European Journal of Cancer Care

CANCER PREVENTION AND AETIOLOGICAL RISK FACTORS

Abstract P-01

What factors influence smoking behaviour in young females?

Robert Atenstaedt[1,3], Kelly Evans[2], Nikki Lloyd-Jones[3]
[1]*Public Health Wales,*
[2]*Social Change Ltd,*
[3]*Institute of Health, Medical Science and Society, Glyndŵr University*

Background: Tobacco smoking is the single biggest cause of cancer in the world. Although there is a lot of research on youth smoking, very few studies have looked at females in the 11–12 year age group – the age at which many studies suggest females start to smoke. This study was designed to address this evidence gap.
Method: To estimate the prevalence of smoking in young females in North Wales, UK, a two page bilingual survey was sent out to all 11–12 year old females in a total of 63 secondary schools, including special schools. In addition, five focus groups were conducted in areas with high levels of deprivation and high adult smoking prevalence. These focus groups were designed to explore in depth current knowledge, attitudes and behaviours in relation to smoking.
Results: Our research found that there is an average smoking prevalence of 2% in 11–12 year old females in North Wales, although this more than doubled in deprived communities. All participants in the focus groups were aware of a family member that smokes. We found that if parents smoke, children are more likely to start. Another finding was that girls with low aspirations that did not take part in sport or after school activities were more likely to smoke or use e-cigarettes. Most participants knew where to purchase e-cigarettes and they were aware that they contain nicotine. Young females felt that smoking was generally unappealing, especially due to the more superficial consequences such as impact on their appearance.
Conclusion: Anti-smoking campaigns should target both parents and young people; campaigns also need to focus on raising aspirations and confidence in young women and stand alone anti-smoking messages are unlikely to work; young females respond best when they perceive themselves or a family member being harmed by smoking.

Abstract P-02

Socioeconomic inequalities in cancer incidence in the West of Scotland: 2010–2012 compared to 2000–2002

Philip McLoone[1], Emily Tweed[2], David Morrison[1]
[1]*West of Scotland Cancer Surveillance Unit, University of Glasgow*
[2]*Public Health, University of Glasgow*

Background: Socioeconomic inequalities in health are well documented. This paper investigates the incidence of cancer in the West of Scotland region between 2000–2012, and examines whether socioeconomic inequalities in incidence changed during a period when primary preventative measures targeted modifiable risk factors.
Methods: We employed the 2006 Scottish Index of Multiple Deprivation which divides Scotland into 6505 geographical datazones ranked by deprivation. We examined cancer rates (ages 50–79, excluding non-melanoma skin cancer) in those datazones located in the West of Scotland region grouped by Scotland-wide quintiles of deprivation. Counts for incidence and the population in each quintile were used to calculate age standardised incidence rates during 2000–2002, 2005–2007 and 2010–2011. We used the ratio of the incidence rate in the most deprived quintile compared to the least deprived (the inter-quintile ratio) to examine changes in the relative inequality in cancer rates.
Results: Incidence for all cancers combined was higher in the more deprived quintiles than the least deprived. In general, differences in cancer incidence by deprivation did not improved over time. Between 2000 and 2012 the inter-quintile ratio for all cancers increased from 1.39 to 1.43 in men, and 1.25 to 1.33 in women. Inequalities in lung, colorectal and head and neck cancers increased, but inequalities in stomach cancer decreased. For cancers in which the incidence was higher in more affluent areas – inequalities in prostate cancer decreased, while inequalities in breast cancer increased.
Conclusions: The concentration of deprivation within the West of Scotland region is unique within the UK. Using the Scotland-wide deprivation index the region's population is over-represented in the most deprived quintiles. We found no evidence to suggest that attempts over the past twenty years to target modifiable risk factors such as exercise, drinking and smoking have reduced socioeconomic differentials in cancer in this population.

Abstract P-03

HPV vaccine acceptance in males

Gillian Prue[1], Olinda Santin[1]
[1]*School of Nursing and Midwifery, Queen's University Belfast*

Background: Despite Human Papillomavirus (HPV)'s impact on the health of both sexes, there is debate around the inclusion of males in HPV vaccination programmes. The aim of this scoping review was to synthesize the evidence on vaccine acceptability to males. Given that the vaccine is most effective in adolescent males, vaccine acceptance in parents and health care professionals (HCPs) was also examined.
Method: A rapid synthesis using specified key words of published systematic reviews into vaccine acceptability in adolescent males, parents and HCPs was conducted. The most common electronic databases were searched including: Medline, EMBASE, PsychINFO, and CINAHL.
Results: There was variability amongst studies with respect to design and methodological approaches. Despite this there appears to be a positive attitude towards male HPV vaccination from both parents and older males. There is currently

insufficient evidence on vaccine acceptance to adolescent males. Understanding the risks involved in HPV acquisition, and receiving a recommendation from a HCP, appear to be the major factors involved in males deciding to be vaccinated. Parents consistently report the importance of a HCP recommendation, yet HCPs (in the US) appear to have a preference for vaccinating older than younger adolescents, and for vaccinating females.
Conclusions: The absence of an agreed definition of vaccine acceptance leads to a lack of a universally accepted tool for its measurement. This makes comparison of studies difficult. With no established theoretical framework the identification and exploration of factors that influence vaccine uptake can be variable. In addition, acceptance is not indicative of uptake. The majority of studies are cross-sectional which makes the identification of factors that lead to actual vaccine uptake difficult. Prospective, longitudinal studies identifying individuals that acted on vaccine intention should be conducted to identify the factors that mediate the uptake.

Abstract P-04

The fraction of cancers attributable to tobacco in Wales, in 2012

Casey Dunlop[1], Katrina Brown[1], Ceri White[2], Dyfed Huws[2], Nick Ormiston-Smith[1]
[1]*Statistical Information Team, Cancer Research UK*
[2]*Welsh Cancer Intelligence and Surveillance Unit*

Background: In 2011, a landmark study estimated that 42.7% of all cancers each year were attributable to lifestyle and environmental factors in the UK (Parkin et al. 2011). This information has been an important component in influencing public health decisions. However, there is a wide variation in exposure prevalence between UK-constituent countries. In addition, the cancer epidemiology evidence-base is constantly changing – new aetiological effect sizes have emerged, or become more robust, since 2010. New calculations are required to establish UK country-specific estimates to inform local public health decisions, and incorporate the most up-to-date risk factor evidence.
Methods: The proportion of cancers attributable to tobacco in Wales was calculated. Cancer types with sufficient evidence in humans for smoking, voluntary and involuntary, as judged by the International Agency for Research on Cancer (IARC) were used. Smoking exposure data was obtained from 2002 to estimate attributable cancers in 2012 – for current smokers, cohabitation with a smoker and workplace exposure. Systematic reviews were conducted to identify the highest-quality evidence available for tobacco aetiological effect sizes.
Results: We expect there will be some differences in the proportion of cancers caused by tobacco in Wales compared to the UK; these differences will be explored for multiple cancer types. Research is ongoing at Cancer Research UK to establish estimates for further lifestyle and environmental factors in Wales.
Conclusions: By using country-specific exposure prevalence, and the latest risk factor estimates, local estimates of the proportion of cancers caused by lifestyle and environmental factors can be derived. These specific estimates will provide valuable information for health organisations in how to tailor public health interventions, and help predict areas for greatest impact.

CANCER SCREENING, EARLY DIAGNOSIS OF CANCER

Abstract P-05

How can the Scottish Government Detect Cancer Early programme contribute to a reduction in health inequalities?

Nicola Barnstaple[1], David Linden[1], Daniel Hawksworth[1], Scott Taylor[1]
[1]*Scottish Government*

Cancer mortality rates in the 20% most deprived areas of Scotland are 1.7 times higher than those in the 20% least deprived areas. Advanced stage at disease presentation contributes to this survival deficit and people living in the most deprived areas of Scotland are more likely to present with a later stage cancer. The Detect Cancer Early (DCE) programme aims to improve the cancer survival rate in Scotland to amongst the best in Europe by diagnosing and treating cancer at the earliest stage.Using a whole systems approach the DCE programme developed a social marketing strategy to provide confidence and education around the symptoms of cancers. The campaigns were extensively tested to reach the target audience of adults C1C2DEs 45 years+ living in Scotland. Campaigns for breast, lung and colorectal cancers included TV adverts, radio adverts, press articles, PR, field activity at high footfall areas such as bingo halls and shopping centres and local targeted interventions in collaboration with NHS Health Boards with the call to action 'Don't' get scared, get checked'. The campaigns have contributed to changes in attitudes of the target audience with 48% feeling more confident about approaching GPs with signs or symptoms of cancer. With 48% strongly agreeing that 'the best way to detect bowel cancer early is to use the home screening kit' and 83% disagreeing that 'there is not much doctors can do for cancer'. Validated statistics show an increase in uptake of the bowel screening programme in most deprived areas (41.7% from 39.6%) and staging data for breast, lung and colorectal cancers has shown a 4.7% increase in stage I presentation with the largest increase observed in most deprived communities (9%) from baseline. Data does not yet include the full programme period therefore the full impact of the campaigns is anticipated to be greater.

Abstract P-06

The impact of the Scottish Government Detect Cancer Early programme on uptake of bowel screening

Nicola Barnstaple[1], David Linden[1], Daniel Hawksworth[1], Scott Taylor[1], Di Primrose[1], Jill Walker[1]
[1]*Scottish Government*

The Scottish Government Detect Cancer Early (DCE) programme aims to improve the cancer survival rate in Scotland to amongst the best in Europe by diagnosing and treating the disease at the earliest stage. Each year around 4000 people living in Scotland are diagnosed with bowel cancer and uptake of the national screening is around 56% with men living in the highest areas of deprivation least likely to participate (41.7%). Using a whole systems approach the DCE programme developed a social marketing campaign highlighting the benefits of

participating in the national bowel screening programme. The campaign collateral included TV adverts, radio adverts, bus panels, press articles and adverts, field activity at high footfall areas such as football stadiums and shopping centres, social media and local targeted interventions in collaboration with NHS health boards. The campaign had a core audience of adults over 45 years C1C2DE with a skew to males with a call to action 'Don't get scared, get screened'. Audience tracking data has shown a significant increase in those agreeing that 'the best way to detect bowel cancer early is to use the home screening kit' (41% compared to 31% pre-campaign) and almost three quarters (73%) say they are very likely to do the test the next time they receive it, compared to 63% before the campaign. The campaign has contributed to a 80.6% increase in replacement kits requested each month since launch and more recently a 8.7% increase in kits returned during the latest period of campaign activity (October 2014). Validated data covering the first phase of activity has also shown an increase in overall uptake of the bowel screening programme of 1.2% nationally with larger increases observed in men in the most deprived communities (2.1% increase). The full impact of the campaign is anticipated to be even greater.

Abstract P-07

Can a social marketing campaign have an impact on early stage breast cancer diagnoses?

Nicola Barnstaple[1], David Linden[1], Daniel Hawksworth[1], Scott Taylor[1], Jill Walker[1]
[1]*Scottish Government*

The Detect Cancer Early (DCE) programme aims to improve the cancer survival rate in Scotland to amongst the best in Europe by diagnosing and treating cancer at the earliest stage. Breast cancer is the most common cancer in Scottish women with around 4600 people diagnosed each year, although five year survival rate is 85.9% there are still 1000 deaths from breast cancer each year. Our research highlighted that almost a quarter of women (45 years C1C2DE) check their breasts less than once a year and are unaware of symptoms of breast cancer other than lumps. Using a whole systems approach the DCE programme developed a social marketing campaign to educate women on the symptoms of breast cancer using images of real breasts. The campaign included TV adverts, radio adverts, press articles, field activity at high footfall areas such as bingo halls and shopping centres and local targeted interventions in collaboration with NHS health boards with the call to action 'Don't' get scared, get checked'. During the campaign spontaneous awareness of breast cancer symptoms doubled and there was a 50% increase in women presenting to GPs with breast symptoms. A corresponding increase of around 50% was observed in referrals to secondary care breast clinics. Staging data for breast cancer for 2012/2013 compared to baseline 2010/2011 does not show any significant improvement in stage I diagnoses (38.8% compared to 38.4%). Corresponding data on breast cancers treated indicates 10% increase in numbers of breast cancers treated in Q2 2014 compared to pre-campaign period Q2 2012, not taking into account annual increases in incidence. A campaign to educate on breast symptoms alone has not contributed to earlier stage presentation at this time. Combining a symptoms based approach with promotion of the breast screening programme may enable increased early stage presentation to be realised.

Abstract P-08

Ethnicity, deprivation and screening: an analysis of survival from breast cancer among screening-eligible women in the West Midlands diagnosed from 1989 to 2011

Melanie Morris[1], Laura Woods[1], Nicola Rogers[2], Emma O'Sullivan[2], Olive Kearins[2], Bernard Rachet[1]
[1]*London School of Hygiene and Tropical Medicine*
[2]*West Midlands Breast Screening Quality Assurance Reference Centre*

Background: Social inequalities in breast cancer survival have been found, but may be smaller when the cancer is screen-detected. We used new analytic techniques to examine survival from screen-detected and non-screen-detected breast cancer and investigate any disparities by ethnicity and deprivation.
Methods: Cancer registry data were linked with screening, ethnicity and mortality data for 20 283 women aged 50–70, diagnosed between 1989 and 2011, and invited for screening continuously. Self-reported ethnicity data were 90% complete, the remaining 10% imputed using name recognition software. We examined three ethnicity categories: Asian, Black and White; and deprivation groups based on the woman's postcode, grouped into categories of less deprived (quintiles 1 and 2) and middle/more deprived (quintiles 3–5). We estimated net survival corrected for lead time bias and for overdiagnosis, using newly-developed ethnic- and deprivation-specific life tables to correct for background mortality.
Results: No significant differences in net survival were found by ethnicity, after adjusting for deprivation. Survival by the extent of disease was similar for all ethnicities. Although survival was generally high, clear deprivation differences were found in five-year net survival: 90.0% (95% CIs: 89.3–90.8%) in less deprived groups and 86.7% (85.9–87.4%) amongst middle/more deprived women. Screening benefitted all ethnic and deprivation groups, but with no evident ethnic differences within screening categories. However, more deprived women had significantly poorer outcomes in both screening categories leading to a difference of 16 percentage points between the more deprived women who were not screen-detected (5-year net survival = 78.0%, 76.7%–79.2%) and the less deprived women who were screen-detected (94.0%, 93.1%–95.1%).
Conclusion: The three main ethnic groups differed little in their experience of breast cancer survival. While screening conferred a survival benefit to all, there were still wide disparities in survival by deprivation. Further research needs to be done to determine the underlying reasons for these differences and tackle them.

Abstract P-09

Cancer Screening Programmes – public knowledge and beliefs in Northern Ireland

Diane Anderson[1], Adele Graham[1], Conan Donnelly[2], Margaret McCrory[1]
[1]*Public Health Agency*
[2]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*

Background: In 2014 the PHA started developing a campaign on cancer awareness in NI. Part of the research undertaken to inform the direction of the campaign was a public survey on

knowledge and beliefs about cancer, including the three NI cancer screening programmes.
Method: Face to face survey of 1410 adults by a market research company, using a mixture of the CAM and ABC tools. A descriptive analysis was undertaken, cross tabs and tests by age group, gender, Trust, deprivation, exposure to cancer and education level.
Results: Awareness of breast screening was highest (77%), followed by cervical screening (66%) and bowel screening (60%). This may reflect the relatively new introduction of bowel screening. Of those eligible for the respective screening programme, 68% reported having recently participated in breast screening, 60% in cervical screening and 53% in bowel screening. The NI actual uptake/coverage figures are higher for breast and cervical screening and on a par for bowel screening. There was high level of agreement with the belief that each cancer screening programme reduces mortality from the relevant cancer (86–89%). A third of respondents felt they would be so worried about what might be found at cancer screening that they would prefer not to have it. Around a fifth believed that cancer screening is only necessary if they had symptoms.
Conclusions: The results demonstrate the variation in knowledge and beliefs about cancer screening programmes in NI. Although the majority of respondents believed that screening can reduce cancer mortality, some still would prefer not to participate because they are afraid and/or believe it is not necessary if they have no symptoms. These findings will inform the PHA's continuing development of ways of encouraging participation in its cancer screening programmes.

Abstract P-10

Stage at diagnosis and early mortality from cancer in England

Sean McPhail[1], Sam Johnson[1], David Greenberg[2], Mick Peake[1], Brian Rous[2]
[1]*National Cancer Intelligence Network*
[2]*National Cancer Registration Service*

Stage at diagnosis is a key predictor of overall cancer outcome. For the first time stage completeness is high enough for robust analysis for the whole of England. We analysed data from the National Cancer Registration Service's (NCRS) Cancer Analysis System on persons diagnosed with breast, colorectal, lung, prostate, or ovarian cancer in England in 2012. One year relative survival (followed-up to the end of 2013) was calculated along with adjusted excess rate ratios, for mortality within 1 year. One year relative survival decreased with increasing stage at diagnosis. For breast, prostate and colorectal cancer survival showed the major reduction being for stage 4 cancers (a fall from stage 3 to stage 4 of 30.8%, 18.2% and 46.6% respectively) while for lung and ovarian cancer there were substantial decreases in relative survival for each level of increase in stage, a fall of 66.9% from stage 1 to stage 4 for lung and 46.6% for ovarian. Excess rate ratios for mortality within 1 year of diagnosis showed that stage and age were the most important cofactors - early stage breast and stage 1–3 prostate cancers had mortality rate ratios close to zero (relative to the baseline case of stage 4). Stage 3 lung cancer had a rate ratio of 0.39, ovarian of 0.49 and colorectal 0.12. Statistically significant impacts of sex, income deprivation and geographic area of residence were also identified. Further reductions in mortality may be most effectively achieved by diagnosing all cancers before they progress to stage 4, but for lung and ovarian cancers there is also a need for a stage shift to earlier stages together with efforts to improve stage specific survival at all stages. Further improvement will be demonstrated in staging data completeness for 2013 registrations.

Abstract P-11

Comparing cancer survival by stage in london

Vivian Mak[1], John Broggio[2]
[1]*National Cancer Intelligence Network*
[2]*Knowledge and Intelligence Team – West Midlands*

To compare the survival of cancer patients resident in London and England by disease stage. Details of patients diagnosed with colorectal (ICD-10 C18-C20), lung (C33-34), breast (C50), ovarian (C56) and prostate (C61) cancer in 2012 and followed up to 31/12/2013 were extracted from the Cancer Analysis System and analysed. Patients were classified into groups based on the disease stage (Stage 1, 2, 3, 4 and not known) at diagnosis. Data for England were used as comparison. We computed the 1-year relative survival estimates for each tumour type, sex and area of residence. Death certificate registrations were excluded from the survival analysis. In London, males diagnosed at early stage of lung cancer had better survival at 88.6% for Stage 1 compared with 17.4% for advanced Stage 4. Similarly, survival for females diagnosed early at Stage 1 was 86.9% compared with 23.3% at Stage 4. Patients diagnosed with Stage 1 colorectal cancer had 1-year survival of 98.6% and 94.6% for males and females respectively compared with 46.9% and 46.3% at Stage 4. Females diagnosed with ovarian cancer at Stage 4 had lower 1-year survival at 61.9% compared to 99.8% at Stage 1. Similarly, breast cancer survival was lower for females diagnosed at Stage 4 72.0% compared with 99.4% at Stage 1. Males diagnosed at Stage 4 prostate cancer had a lower 1-year survival of 81.1% compared to 100% for those diagnosed earlier. Overall 1-year survival following diagnosis of colorectal, lung, prostate or ovarian cancer was higher for London compared to England. The 1-year survival from breast cancer was the same for London and England. 1-year survival for Londoners diagnosed with colorectal, lung, prostate or ovarian cancer in 2012 was better compared with England. Cancer patients diagnosed at a later stage have poorer outcomes than those diagnosed earlier.

Abstract P-12

Implementation of secondary prevention programs in Setif, Algeria

Ettore Bidoli[1], Diego Serraino[1], Abbes Mahnane[2], Slimane Laouamri[2], Zoubida Zaidi[2], Hafida Boukharouba[2], Lamia Kara[2], Silvia Birri[1], Paolo De Paoli[1], Mokhtar Hamdi Cherif[2]
[1]*Unit of Epidemiology and Biostatistics, Centro di Riferimento Oncologico, IRCCS*
[2]*Faculty of Medicine, University of Setif*

Background: Population-based screening programs aimed at reducing breast, colorectal, and cervical cancers will be subsidized by the Algerian National Cancer Plan 2015–19. This study intended to describe incidence rates of these three cancers in the province of Setif, Algeria, from 1986 through 2010.

Method: All incident cancer cases for the 1986–2010 period were provided by the population-based Cancer Registry of Setif, disentangled by site, morphology, age, sex, and calendar period. The general population was obtained from the Algerian Institute of Statistics. Age-standardized rates (world population) (ASR-WR) were computed by calendar period (five quinquennia from 1986–1990 to 2006–2010), while annual percent changes (APCs) were computed for the period 1996–2010.
Results: During 2006–2010 period, colorectal cancers represented 9.6% of all cancers diagnosed in men, while colorectal, breast, and cervical cancers represented 50.9% of all cancers in women. In women, statistically significant decreasing trends were observed for cervical cancer (APC = −4.2%/year), particularly in the 45–64-year age group (−5.9%). In all age groups, a drop of the squamous cell carcinoma (SCC) histologic subtype (89% of all cervical cancer diagnoses in 1986–1990, vs. 53% in 2006–2010) was observed. Statistically significant increasing trends were displayed by both colorectal cancer (+5.4% in men, and +4.5% in women) and breast cancer (+8.2%) mostly above the age of 45 years.
Conclusions: The decrease of cervical cancer can be ascribed to opportunistic early detection by cytological screening, which is more effective in detecting SCC than adenocarcinomas. The variations observed for colorectal and breast cancers can give clues about large scale changes in exposure to risk factors, and to improvements of early diagnosis. International recommendations against cancer must be strongly promoted in Setif after taking into account epidemiological transition, lifestyle, environmental changes, poor health education, and limited access to health care facilities.

Abstract P-13

Barriers and motivators to participation in the Northern Ireland Breast and Cervical Screening Programmes: a qualitative study

Diane Anderson[1], Tracy Owen[1], Adrian Mairs[1], Colin McMullen[1], Adele Graham[1]
[1]*Public Health Agency*

Background: Cancer screening programmes aim to reduce mortality and morbidity from their respective cancers. Across Northern Ireland 75% of eligible women participate in the breast screening programme and 77% in cervical screening, on a par with other UK countries. However there is local variation, with lower participation in Belfast and Derry/Londonderry. This study explores how women from areas of lower uptake decide whether or not to participate in screening.
Method: A market research company was commissioned to undertake focus group work with women from areas of lower participation who were eligible for each screening programme. Six focus groups were with women who chose to participate in the respective screening programme. The remaining focus groups were with women who had never attended screening or who were lapsed attenders. Thematic analysis of the group discussions was undertaken.
Results: The most common reasons for non participation in either screening programme was (a) fear (both of the screening process and getting the results), (b) having made an informed decision not to attend, (c) inconvenience, being too busy, costs/logistics in accessing the screening and (d) personal experience. Identified barriers specific to breast cancer screening were (a) lack of knowledge/awareness of screening and (b) 'meaning to go, but not getting around to it'. Identified barriers specific to the cervical screening programme were embarrassment and avoidance. Exploration of motivators to taking part in screening revealed that those who attended screening acknowledged similar hurdles to the non-attenders, particularly in relation to embarrassment and fear of the results. However they feel obliged to attend as they are aware of the importance of early detection.
Conclusions: The findings will direct the ongoing promotion of informed choice in cancer screening, especially in exploring ways of alleviating women's anxieties about the procedure itself.

Abstract P-14

Men's experience of a prostate biopsy is associated with health-related quality of life

Frances Drummond[1], Finian Bannon[2], Heather Kinnear[2], Anna Gavin[2], Linda Sharp[1,3]
[1]*National Cancer Registry Ireland*
[2]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[3]*Newcastle University*

Background: Prostate cancer is the most frequently diagnosed male cancer in developed countries. Rates have increased due to prostate specific antigen (PSA) testing and subsequent prostate biopsy. Effects of PSA have been investigated but little is known about the effect of biopsy on men. We aimed to investigate mens' experiences of prostate biopsy, and the association between this and health-related quality of life (HRQoL).
Methods: Men (n = 811), 4–6 weeks post-biopsy were given a questionnaire in four clinics in the Republic of Ireland and two in Northern Ireland. To assess biopsy experience men were invited to complete eighteen survey-specific statements on a four-point Likert scale. HRQoL was measured using the EQ-5D-5L. Association between biopsy experience and HRQoL was investigated by multivariate ordinal logistic regression.
Results: 41% of men completed a questionnaire. Of these, 35% were diagnosed with prostate cancer, 33% were not and 32% had either not received, or been given an equivocal result. Most reported that the biopsy was 'necessary' (90%), they were 'glad' they had it (90%), and it made them 'reassured' (83%). Others described it as uncomfortable (76%), unpleasant (66%), anxiety-causing (59%) and painful (53%). In preliminary analysis, after adjusting for socio-demographic and clinical factors, men who had; a cancer diagnosis (OR 2.32 95% CI: 1.20, 4.47), high health anxiety (OR 2.34 95% CI: 1.20, 4.58), urinary retention post-biopsy (4.18 95% CI: 1.73, 10.09) and a negative biopsy experience (OR 1.92 95% CI 1.14, 3.25) were significantly more likely to have low HRQoL.
Conclusion: Most men described the biopsy in positive terms. However, poor experiences were associated with low HRQoL. Increased awareness among clinical teams of the effect of prostate biopsy on men may improve experience and subsequent HRQoL. Acknowledgements: The authors thank the clinical teams who facilitated recruitment; Health Research Board, Prostate Cancer UK, NCCP and R&D office of NI Public Health Agency for funding.

Abstract P-15

Analysis of early stage of diagnosis of cancer and survival

Carina Crawford[1], Nick Ormiston-Smith[1]
[1]*Cancer Research UK*

Background: Early diagnosis of cancer improves the chances that a patient will survive their disease(1). Cancer stage at diagnosis data published by Public Health England enables the proportion of cancers diagnosed at an early stage (stage 1 and 2) to be monitored. The relationship between early stage of diagnosis, survival and other socio-demographic factors was investigated.
Method: The proportion of cancers diagnosed at an early stage where stage known (excluding unknowns) was calculated for all cancers and selected cancer types. The proportion of all cancers diagnosed early was weighted by cancer type for clinical commissioning groups (CCGs). Regression analysis of one year relative survival and proportion of cancers diagnosed early by CCG was carried out taking into account data completeness, deprivation (average IMD score (2010)) and other demographic factors.
Results: One year relative survival for all cancers increased by 1% with a 5% increase in the proportion of cancers diagnosed early. There is a significant negative correlation between deprivation and proportion cancers diagnosed early by CCG for breast, bowel, and prostate cancer. Lung cancer shows a significant positive relationship.
Conclusion: Stage of diagnosis provides a better indication of early diagnosis rather than relying solely on survival as an outcome measure. The effect of early stage of diagnosis on 1-year survival tends to be small. It is possible that larger effects will be seen with longer survival periods. CCGs with higher levels of deprivation tend to have lower levels of early diagnosis for three of the most common cancers. The proportion of cancers diagnosed at an early stage is an important indicator of early diagnosis and hence cancer outcomes. (1) Cancer Research UK, Figure 3.6: One-Year Relative Survival by Stage of Diagnosis for Lung Cancer http://www.cancerresearchuk.org/cancer-info/cancerstats/types/lung/survival/, February 2015

Abstract P-16

Improvements in factors related to early diagnosis and survival in Colorectal and Lung cancer

Isabella Carneiro[1], Nick Ormiston-Smith[2], Lucy Ellis-Brooks[1], Mick Peake[1]
[1]*NCIN*
[2]*Statistical Information Team, Cancer Research UK*

Background: There is evidence that a lower proportion of patients present with early stage disease in the UK, so successful implementation of this initiative should make a major contribution to the long-term goal of achieving world-class cancer outcomes in this country.
Method: The aim of this analysis is to estimate the potential for increasing the proportion of patients with early stage disease at the time of diagnosis and for reducing peri-operative mortality, and then estimating the impact of any such improvements on survival. We examine the impact of factors related to early diagnosis, such as public awareness, screening, peri-operative surgical mortality and the reduction of emergency presentations. Findings from peer reviewed articles on screening, awareness campaigns, emergency presentations and quality of surgery were applied to the population diagnosed with colorectal and lung cancer in 2012 to evaluate the potential improvements on survival. Then 1-year and 5-year survival rates were applied to simulated figures and compared to the 2012 net survival.
Results: Preliminary analysis of screening improvements in colorectal cancer showed that applying the improvements in staging at diagnosis to screening ages 60–69 would result in approximately 300 additional lives saved in 2012. If those figures were applied to a screening population aged 60–74, over 550 lives would be saved. For a screening population aged 50–69, around 450 lives would be saved. Further analysis is underway on the remaining factors for colorectal cancer and those for lung cancer.
Conclusions: The initial results based on just one factor corroborate previous studies, evidencing that the 'size of the survival prize' for early diagnosis might be substantial.
Acknowledgement: This is a CRUK-NCIN Partnership project.

Abstract P-17

MiR205 is a p53/p63-dependent marker lost in poor outcome Triple Negative Breast Cancers

Ezanee Azlina Mohamad Hanif[1,2,3], Richard Kennedy[1], Paul Mullan[1]
[1]*Centre for Cancer Research and Cell Biology (CCRCB), Queen's University of Belfast*
[2]*UKM Medical Molecular Biology Institute (UMBI)*
[3]*National University of Malaysia (UKM)*

Background: Triple negative breast cancer (TNBC) is a heterogeneous subtype of breast cancer with aggressive biology and poor clinical outcomes. TNBCs are so called because they negative for the estrogen, progesterone and Her2 receptors. To date, unlike other subtypes, there are no targeted therapies for TNBCs with current first line treatment consisting of the generic DNA damage chemotherapy cocktail (FEC). The aims of this study was (i) to identify markers of TNBC response to FEC and (ii) to identify genes/pathways associated with this poor biology which could represent novel therapeutic targets.
Results: Differential gene expression analysis of 58 TNBCs produced 114 significant genes to be differentially expressed between 'poor' ($N = 20$) and 'good' ($N = 38$) outcome TNBCs (poor outcome patients relapse <5 years; good outcome as no relapse >5 years post FEC treatment. Many differential genes were found to be highly repressed in poor outcome TNBCs, prominent amongst these was MiR205 (fold-change <-5). MiR205 expression levels were validated in a panel of cell lines ($N = 9$) by RqPCR, showing consistent low expression in TNBC tumours and in cell lines representing poor outcome TNBC. Previous studies have shown MiR205 association with the p53/p63 family of genes. We found that MiR205 was strongly upregulated by exogenous expression of p63 in TNBC cells and was reduced in non-tumourigenic cells following p63 knockdown. Conversely, knockdown of mutant p53 resulted in recovery of MiR205 expression levels confirming that a p53/p63 mechanism is important for regulating this gene. MiR205 is known to be a regulator of epithelial-mesenchymal transition (EMT) and invasion assays showed reduced invasion in TNBC cells with MiR205 overexpression.
Conclusion: In summary, MiR205 is a marker of FEC response in TNBCs and shows clear p53/p63-dependent regulation. We will now investigate the consequences of MiR205 loss, in

addition to the dysregulation of other marker genes, in order to better understand the biology of poor outcome TNBCs.

Abstract P-18

Immunological faecal occult blood testing: can a test using digital rectal examination alone diagnose colorectal cancer?

Jennie Grainger[1], Paul Skaife[1]
[1]*University Hospital Aintree*

Introduction: Colorectal cancers cause frank or occult bleeding. Patients with asymptomatic lesions may be detected by the Bowel Cancer Screening Programme which uses a faecal occult blood test. However the sensitivity of this test is reported as 55–80%, leading to unnecessary investigations. Symptomatic patients are referred to Rapid Access clinics. 85–90% of these patients have non- malignant pathology, again leading to unnecessary investigations. We wanted to see if an immunological FOBt (FOBTi) which uses antibodies specific for human haemoglobin can identify patients who have colorectal cancer. Aim: To determine the sensitivity and specificity of FOBTi in patients referred to Rapid Access colorectal clinics.
Methods: A prospective cohort study was performed on patients referred to Rapid Access colorectal clinic. A digital rectal exam (DRE) was performed on each patient and faecal sample obtained for FOBt testing. Colonic investigations were arranged and results correlated to the FOBt result.
Results: So far 72 FOBt samples with complete colonic investigations are available. 17 patients tested FOBt positive, 55 FOBt negative. In the positive group, 41% had cancer (35% rectal cancer; 6% caecal cancer). Other diagnoses include tubular adenomas (12%), villous adenomas (6%), SRUS (6%), other (12%) and normal (23%). In the FOBt negative group no cancers were detected on further investigations. Using these results, FOBti has a sensitivity of 100% and 85% specificity. The positive predictive value is 42% and negative predictive value 100%.
Conclusion: Immunological FOBt is an instant test which utilises immuno-chromatography to detect blood loss in the stool. When used with DRE in patients with clinical symptoms it has 100% sensitivity and 85% specificity. A negative result means patients are unlikely to have a cancer diagnosis, which may lead a reduction in unnecessary investigations. This study is still ongoing.

Abstract P-19

Challenges in measuring the diagnostic and treatment interval within Northern Ireland; ICBP module 4

Therese Kearney[1], Kerry Moore[1], Conan Donnelly[1], Anna Gavin[1]
[1]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*

The International Cancer Benchmark Partnership Module 4 investigated delays in the diagnosis and treatment of breast, colorectal, lung and ovarian cancer. Time delays were divided into three sub-intervals; patient delay, diagnostic delay and treatment delay. Data were collected from three sources; the patient (questionnaire), their GP (questionnaire, following patient consent), and from patient secondary care notes (Northern Ireland Cancer Registry, NICR data). Patients diagnosed in the previous 3–6 months were identified in NICR using the MDT management system (CaPPs). Using internationally agreed exclusion criteria, individuals aged <40 years, individuals with a previous cancer of same organ and those with synchronous cancers within two months were excluded. Patient eligibility was further scrutinised by research nurses who excluded individuals who were: unaware of their diagnosis, not physically or psychologically capable of participating or close to end-of-life. Checking these exclusions could take the nurses up to six weeks. A vital status check was carried out, deceased individuals were removed from the list and patient questionnaires sent out within 24 h of the check.
The numbers of NI patients excluded using these criteria

	Breast	Bowel	Lung	Ovary	TOTAL
Patients identified via CaPPs	1256	1071	1461	516	4304
Patients eligible and contacted	740	582	663	113	2098

Although this method ensured that only eligible patients receive the questionnaire, it delayed recruitment by up to eight weeks and introduced a bias in the patient delay data. Figures from the NICR between 2009 and 2012 indicate that 27.5% of lung cancer patients die within 8 weeks of diagnosis as do 10.9% of colorectal patients, 16.1% of ovarian cancer patient and 1.52% of breast cancer patients. However, as all 12 jurisdictions in the ICBP are following the same protocol, the data collected will be comparable, although further research is required on individuals with short survival.

Abstract P-20

A single centre feasibility study examining the efficacy of annual reminders to facilitate uptake in Bowel Scope Screening non-attenders

Robert S Kerrison[1], Lesley M McGregor[1], Sarah Marshall[2], John Isitt[3], Jane Wardle[1], Christian Von Wagner[1]
[1]*Health Behaviour Research Centre, Department of Epidemiology and Public Health, University College London*
[2]*St Marks Bowel Cancer Screening Centre, St Marks Hospital, Watford Road,* [3]*Resonant Behaviour Change and Social Marketing*

Background: In England, men and women aged 55 are offered a 'one-off' flexible sigmoidoscopy screening episode as part of the National Bowel Scope Screening (BSS) Programme. Anyone who does not attend can self-refer up until the age of 60, at which time they are enrolled into the biennial faecal occult blood test programme. Since its implementation, uptake of BSS has been low, with <40% of the invited population having taken part.1 If the programme is to improve colorectal cancer (CRC) outcomes in England, a greater level of uptake is needed.2 Reminders prompting non-participants to self-refer for screening have been effective in other programmes, but have never been examined in the context of BSS.3 The aim of this study was to examine the basic-efficacy of sending non-participants a 'reminder-to-screen', 1 year post-invitation.
Method: We undertook a single-centre feasibility study at St. Marks' Hospital in Harrow, London. 160 randomly selected 'non-participants' were sent a 'reminder-to-screen' on the anniversary of their invitation with an 'appointment-request-slip' which included options for the preferred day and time of the

appointment and gender of the practitioner. A theory-based educational leaflet developed for this study was also included. The 'reminder-to-screen' was re-sent to individuals not responding within four weeks. The primary outcome was uptake of BSS within 12 weeks. An A'Hern sample size calculation for single-stage studies was used to determine the sample size ($n = 160$) and minimum number of self-referred appointments ($n = 3$) needed to warrant a full randomised controlled trial (RCT).
Results: Of the 160 participants sent a 'reminder-to-screen', twenty-four (15%) self-referred and were screened, six (3.8%) made an appointment but did not attend and 130 (81.25%) did not respond.
Conclusions: An annual 'reminder-to-screen', sent with a theory-based leaflet and options for appointment and practitioner preferences, was successfully implemented and exceeded the minimum efficacy to merit a RCT.

Abstract P-21

Increasing early detection of lung cancer: pilot chest xray self referral for symptomatic patients (Southern Trust- N. Ireland). Interim Results

Rory Convery[1], Naomi Chapman[1], Stephen Hall[2], Gerry Millar[3]
[1]*Respiratory Medicine, Craigavon Hospital, SHSCT*
[2]*Radiology, Craigavon Hospital, SHSCT*
[3]*GP Macmillan Facilitator SHSCT*

Background: The N. Ireland LUCADA data indicates a 12% resection rate. The Quality Adjusted Life Years for an early stage cancer resection is ~£40 000. Doncaster & Leeds have used public awareness campaigns to enhance Lung Cancer services and encourage self-referral for chest radiographs in symptomatic individuals.
Methods: We modified the Leeds protocol for a 3 month pilot during Lung Cancer Awareness month using local council and churches to distribute information. Smoking cessation advice was highlighted on publicity material. A £900 pound budget funded posters and media campaigns encouraging adults age 50–75 with chest symptoms to self-refer to any of 6 community XRay units. All radiographs were reported by a single radiologist to a virtual clinic with clinicians reviewing findings. Abnormalities were filtered into existing Red Flag pathways. Patients completed a short questionnaire and 4 individuals did not meet the criteria for XRay.
Results: 290 individuals had radiographs performed (55% female, 60% current or ex smokers). 15 married couples attended. Symptoms ranged from persistent cough (86%) to haemoptysis (0.4%). 28 XRAYS (10%) were 'abnormal' (17 male, 73% smokers). All were contacted by phone & GP informed. 9 generated immediate CT requests. Two T1a primary adenocarcinomas have been resected with 7 other patients under review while the 'run out' period is completed.
Conclusions: It is possible to run an interface partnership project through community XRay units by establishing sustainable links with local churches and council bodies. A small outlay has resulted in two early stage cancers resected so far. Patient and Primary Care feedback is positive.

CHANGING CLINICAL PRACTICE/SUPPORTING COMMISSIONING/AUDIT

Abstract P-22

Cancer Treatment Helpline – a national 24/7 triage service for NHSScotland

Scott Taylor[1], Michelle Higgins[2]
[1]*Scottish Government*
[2]*NHS24*

Background: It is well recognised that cancer incidence, and demand for Systemic Anti-Cancer Therapy (SACT) is increasing. For patients experiencing SACT toxicities such as neutropenic sepsis reports indicate robust 24/7 pathways to specialist services make a positive safety impact, and reduce mortality. In response the Scottish Cancer Taskforce (SCT) established a SLWG to explore how NHSScotland could better utilise capability and capacity to deliver safe and high quality pathways.
Method: The SLWG determined a national service, Cancer Treatment Helpline (CTH), be developed around the UKONS triage tool, and pump primed by the Scottish Government. To provide quality assurance the CTH was integrated with the extensive project management and governance structures of NHS24. To enable pathways to develop safely and effectively, with outcomes measured and evaluated, the CTH was piloted within two NHS Boards, following an action research approach, supported by improvement science tools.
Results: Provides NHS Boards a financially viable service model that enables improved front door patient flow, strengthens acute oncology pathways, and capability to meet door to needle targets - Enables NHS Boards to target capacity and capability effectively with staff working at the top of their skill set. - Patients access through a single contact point a consistent, safe, effective, person centred service - 32% of patients triaged are maintained at home, reducing secondary care demand. - Patients present to services earlier, with reduced complexity, leading to reduced length of stay - No patient safety incidents or critical events recorded.
Conclusions: The CTH provides a consistent and safe service for patients, with time to treatment for SACT toxicities such as neutropenic sepsis reduced, with safety improved and risk of mortality reduced. The CTH is rolled out across NHSScotland and supported by a Clinical Expert Group, and provides a model of working for countries or cancer networks.

Abstract P-23

Multidisciplinairy breast cancer registry: improvement of quality of care through the NABON Breast Cancer Audit

Sabine Siesling[1,2], Annelottevan Bommel[3], Marie-Jean Vrancken Peeters[4], Michiel Wouters[4], Ruud Pijnappel[5], Marc Mureau[6], Agnes Jager[6], Pauline Spronk[7], Kay Schreuder[1], Thijsvan Dalen[8]
[1]*Netherlands Comprehensive Cancer Organisation (IKNL)*
[2]*University of Twente*
[3]*Leiden University Medical Centre*
[4]*Netherlands Cancer Institute / Antoni van Leeuwenhoek Hospital*
[5]*University Medical Centre Utrecht*

[6]Erasmus MC Cancer Institute, Rotterdam
[7]Dutch Institute for Clinical Auditing (DICA)
[8]Diakonessenhuis

Background: Breast cancer care in the Netherlands is of high quality with a 3% 5-year local recurrence rate and a 84% overall 5-year survival rate. Still, unexplained variation in treatment was found between Dutch hospitals and further improvement of care might be achievable. The NABON (National Breast Cancer Organisation of the Netherlands) Breast cancer audit (NBCA) has developed a multidisciplinary set of in total 30 process- and outcome indicators related to quality of care.
Material and methods: The nationwide multidisciplinary clinical NBCA started in 2011. Data on all newly diagnosed breast cancer patients are collected by the Netherlands Comprehensive Cancer Organisation (IKNL, 61 hospitals), hosting the Netherlands Cancer Registry or by the physicians themselves (31 hospitals). Data capture and feedback to the hospitals is facilitated using a web-based portal run by the Dutch Institute for Clinical Auditing (DICA).
Results: The NBAC database includes more than 42 000 breast cancer patients (5745 DCIS and 36 396 invasive carcinomas) over the period 2011–2013. Eighty-nine percent of invasive breast cancer patients were treated with primary surgery of which 62% (n = 19 885) with breast conserving surgery. After implementation of the NBCA, several quality assessments are improved. The percentage of patients that were treated with neo-adjuvant systemic treatment (12%; 95% CI: 0–47%) and patients receiving an immediate reconstruction after ablative surgery (19%; 95% CI: 0–73%) was lower than expected with a large variation between hospitals. At the conference, results will be substantiated by funnel plots. Other quality indicators will be presented as well.
Conclusions: The continuous cycle of registration and providing feedback by clinical auditing provides a powerful tool for quality monitoring and improving breast cancer care. Improvements for complex multidisciplinary issues, like the use of neo-adjuvant systemic treatment or immediate reconstruction require detailed analyses of the variation between hospitals to further optimize these aspects of breast cancer care.

Abstract P-24

Development of a chemotherapy capacity calculator tool: An NHS & Pharmaceutical Industry Joint Working Partnership

Steve Williamson[1], Alison Featherstone[1], Gracy Crane[2], Carol Hawkes[2], Theresa Marshall[3], Craig Davidson[3]
[1]North of England Cancer Network
[2]GSK UK Limited
[3]Novartis Pharmaceuticals

Background: A formal joint working project was undertaken to develop a tool to calculate the impact on capacity of introducing newly approved oncology drugs at an NHS Trust and Regional level, in order to better inform planning and service delivery to NHS patients. The tool was conceived as a quick and simple solution that is easier to implement than a full CPORT capacity model.
Method: GSK built the tool, working with NHS staff to realise the vision. The NHS Lead provided guidance on the format of the tool, the default figures and input on supporting materials. The tool was beta tested on nursing and pharmacy staff before being finalised. A joint working steering group was set up by GSK to oversee the development and implementation of the tool. A user manual and FAQ document were produced and the tool made available on the Pharmaceutical Industry Partnership Group website.
Results: (1) The tool provides an overview of a typical chemotherapy pathway, showing the various steps in the pathway. The tool highlights steps where capacity, i.e. time taken, can be calculated. (2) The user has to set up the treatment regimen giving details of infusion times etc. (3) The tool looks at nursing and pharmacy activities. Default times are provided but these can be changed to local figures. (4) The tool delivers a variety of capacity outputs; impact on chair time, nursing time, pharmacy time and tariff income generated for chemotherapy attendance.
Conclusion: As pressure on chemotherapy services continues to grow, being able to estimate and predict the capacity impact of the introduction of new cancer treatments is vital to ensure there are enough oncology staff to deliver these treatments. The capacity tool provides a way of estimating the resource impact of newly approved oncology medicines.

Abstract P-25

Radiotherapy skin care guidance

Rachel Harris[1], Charlotte Beardmore[1], Heidi Probst[2], Gemma Burke[2], Sarah James[1], Amanda Bolderston[3]
[1]The Society and College of Radiographers
[2]Sheffield Hallam University
[3]British Columbia Cancer Agency

Skin reactions from external beam radiotherapy are one of the most common side-effects from treatment [1, 2], and may cause distress to some patients, and in certain cases may be a factor which can limit radiation dose and treatment schedules. Megavoltage linear accelerators with skin sparing capabilities have significantly reduced the severity of reactions from radiotherapy; however accelerated radiation dose schedules with concurrent chemotherapy, and the use of biological agents such as epidermal growth factor receptor (EGFR) inhibitors, have led to an increase in certain skin reactions [3]. Significant skin reactions are also seen in patients receiving high doses to large fields, in patients where there are folds of skin (for example inframammary fold, groin, axilla) and patients receiving radiotherapy to the head and neck region [4, 5]. A Guideline Development Group have reviewed the current evidence to assist radiographers, radiotherapy nurses, and the wider radiotherapy workforce, to give the optimal skin care advice to patients undergoing radical external beam megavoltage radiotherapy. Although it is unlikely that radiation reactions can be completely prevented, the current driver is to delay the onset and minimise the severity of a skin reaction, to reduce symptom related discomfort, and prevent further complications. The recommendation from the guidance document is to standardise skin care education of all staff caring for patients receiving radiotherapy by dissemination of the guidance using a variety of educational methods. Standardise assessment tools across departments in the United Kingdom which are objective and consistent. Consider the evidence on current products and start new high quality trials to investigate interventions for dry or moist desquamation enabling a more consistent approach for patients receiving radiotherapy and inform radiotherapy skin care guidelines.

Abstract P-26

New evidence for workforce planning: 470 specialist adult cancer nurses who cover Cancer of Unknown Primary (CUP) in hospitals in the UK

Rachel White[1], Jacqueline Goodchild[1]
[1]*Macmillan Cancer Support*

Background: CUP can be "a devastating and bewildering diagnosis for the patient and family". Patients are often (57%) diagnosed as an emergency; require additional support due to the uncertainty surrounding their diagnosis, face increased risk of poor coordination and accountability, investigation and treatment delays. Therefore the role of specialist nursing is critical and so the Macmillan commissioned specialist adult cancer nurse census collected information on the CUP workforce for the first time.
Method: The methodology was largely based on the previous NCAT censuses. Data was primarily collected through bespoke spreadsheets. These were sent to senior or lead cancer nurses or cancer managers between April and June 2014. Respondents were asked to describe all hospital-based specialist adult cancer nurse posts on the 24th April 2014. For each post, respondents were asked to select the area of practice where the post holder most frequently delivers care and state 'does this post cover cancer of unknown primary'.
Results: The census identified the whole time equivalent (WTE) of 3595 nurse posts of which 3416 had a known CUP status, of these 14% were identified as covering CUP. All areas of practice include nurses who cover CUP. 42% of CUP nurses specialise in Acute Oncology Services, 16% specialise in upper gastrointestinal cancer and 10% specialise in colorectal cancer.
Conclusion: In the last decade, age-standardised incidence rates for CUP have fallen by almost 40%. This could be due to improvements in diagnostics and registration practices that increasingly code to a specific cancer. It is unclear how this relates to the number of CUP patients which makes workforce planning difficult. Planning is further complicated by the lack of clearly agreed care pathways. Therefore it is important to establish how best to meet the needs of people with CUP and how to support the CUP workforce.

Abstract P-27

One year survival for cancer diagnosed following emergency presentation. An update from the London Cancer A&E audit

Neil Chauhan[1,2], Melanie Ridge[1], Michael Parker[3], Mairead Lyons[1], Kathy Pritchard-Jones[1]
[1]*London Cancer*
[2]*Barts Health NHS Trust*
[3]*Anglia Ruskin University*

Background: In the NCIN Routes to Diagnosis (2013), London has a higher rate of cancer diagnosed following an emergency presentation than the national average (24%). These patients often have more advanced cancer than those patients referred along 'managed' pathways. Such late presentation is one reason that cancer survival in England is lower than the European average. London Cancer, the integrated cancer system for North Central and East London and West Essex, encompasses a population with amongst the worst 1 year survival rates in England. This study aimed to understand patient and service demographics in more depth. One year from audit end we report on one year mortality.
Method: Prospective analysis of all cancer diagnoses made following emergency presentation though 12 A&E Departments at 9 acute hospital trusts between January and August 2013. The patients were identified through clinical teams and trust cancer management processes. Details were requested from primary and secondary care records of route to diagnosis, patient demographics, cancer type and treatment intent. One year on, the acute trusts were contacted to complete survival information on their patients. All returns were received by January 2015 for formal statistical analysis.
Results: 963 patients were identified. This was 13% of patients having a first cancer treatment in the participating trusts in the same period. All trusts returned data on survival. 60 patients had no return (6%). Overall 588 have died (61%). There are differences between cancer types: 40% of colorectal cancer patients have died but 67% and 76% for lung and hepato-pancreato-biliary cancers respectively. Further statistical analysis of one year mortality and survival, broken down by age and cancer types, is in progress.
Conclusions: Cancer diagnosed following emergency presentation is associated with poor survival. These data are informing local initiatives to improve GP access to diagnostics and public/patient awareness of symptoms and services.

Abstract P-28

Cancer diagnosed following emergency presentations at three sites in one Trust. Detailed analysis from the London Cancer A&E audit leading to quality improvement

Neil Chauhan[1,2], Tania Anastasiadis[3], Sarah Slater[2], Melanie Ridge[1], Mairead Lyons[1], Kathy Pritchard-Jones[1]
[1]*London Cancer*
[2]*Barts Health NHS Trust*
[3]*Tower Hamlets Clinical Commisioning Group*

Background: Cancer diagnosed following emergency presentation is associated with poorer outcomes due to late presentation, advanced disease and concurrent acute ill health. Tower Hamlets CCG and Barts Health wanted to understand their own performance in order to learn and introduce quality improvement for patients presenting along this emergency pathway.
Methods: London Cancer collected all cancer diagnosed through Barts Health's three A&E departments (Newham University, Royal London and Whipps Cross University) between January and August 2013. Electronic health records were then used to map the patient journeys with a view to identifying areas for improvement.
Results: Newham had 52 patients, 52% male, and median age 71 years. Royal London had 97 patients, 61% male and median age 73 years. Whipps Cross had 134 patients, 46% male and median age 73 years. Lung and colorectal were the most common cancers identified. The third most common varied: breast at Newham, head and neck at Royal London and upper gastrointestinal for Whipps Cross. Treatment intent was recorded as curative for only 19% of patients. 55% are alive one year from audit. For colorectal cancer the median time to imaging, diagnostic procedure and diagnosis were 1, 8 and 12 days respectively. Median time to inform GP of diagnosis

was 1 day with all being informed by 6 days. There was 31% mortality. For lung cancer the median time to imaging, diagnostic procedure and diagnosis were day of presentation, 7 and 15 days respectively. It took a median 20 days to inform the GP of diagnosis with no record of return for 34% of patients. There was 76% mortality.
Conclusions: In-depth local analysis of system-wide data has shown differences at three sites run by one Trust as well as differences between cancer pathways. This data is being used to drive change within and between primary and secondary care as well as improve communication.

Abstract P-29

New evidence for workforce planning: 3600 specialist adult cancer nurses in hospitals in the UK

Rachel White[1], Jacqueline Goodchild[1]
[1]*Macmillan Cancer Support*

Background: The Cancer Patient Experience Survey has shown giving people a named Clinical Nurse Specialist (CNS) is consistently linked to good patient experience; however 12% in Wales and 11% in England report not having a named CNS. In 2014 Macmillan commissioned the first UK-wide cancer nurse census.
Method: The methodology was largely based on the previous NCAT censuses. Data was primarily collected through bespoke spreadsheets. These were sent to senior or lead cancer nurses or cancer managers between April and June 2014. Respondents were asked to describe all hospital-based specialist adult cancer nurse posts on the 24th April 2014.
Results: The census identified the whole time equivalent (WTE) of 3471 filled nurse posts and 124 vacant posts in the UK, a total of 3595 WTEs. The most common majority areas of practice align with the most common cancers; breast (19% of WTEs), colorectal (12%) and urology (12%). However, there is variation in nurse provision per recent case. Urology has the highest ratio; linked to a diverse case load including prostate, bladder (including in situ) and kidney cancer. The lowest ratio of cases per nurse is in brain and nervous system (incidence) and upper gastrointestinal cancer (2-year prevalence).
Conclusion: Nurses play a critical role so workforce planning is essential. The higher ratio of nurses to patients in urology, together with only 79% of urology patients reporting being given the name of a CNS– lower than any other tumour type, and the 12% increase in prostate cancer cases over 5 years indicate that the urology workforce could be in need for optimization. This must be in the context of the wider healthcare system. Support Workers can play an increased role. Outpatient and primary care can also play an increased role in hormone treatment and follow up (especially cases diagnosed via PSA tests).

Abstract P-30

Clinical Headline Indicators a.k.a. COSD Level 4

Karen Linklater[1], Jackie Charman[2], Lucy Elliss-Brookes[3], Kenny Lee[1], Christopher Almond[1], Barry Plewa[1], Stephen Raynor[1], Michael Peake[3]
[1]*Public Health England, National Cancer Registration Service, London*
[2]*Public Health England, Knowledge and Information Team, West Midlands*
[3]*Public Health England, National Cancer Intelligence Network*

Background: The Cancer Outcomes and Services Dataset (COSD) was developed by the NCIN (National Cancer Intelligence Network) in collaboration with its Site-Specific Clinical Reference Groups (SSCRGs) to be the core cancer dataset upon which to build indicators of activity, performance and outcomes of cancer care in England. It now forms the major data feed into the National Cancer Registration Service (NCRS). The intention is that this core data set will allow the production of a range of indicators that will be fit for the purposes of informing the commissioning and provision of cancer services and driving up standards of care to improve outcomes for patients.
Method: Using the NCIN Service Profiles and discussions on various metrics with the SSCRGs, the London Cancer Alliance and others, we defined 19 generic metrics, such as age, sex, ethnicity, that would be common to most cancer sites. We also defined a further 11 breast and 12 lung site specific metrics such as the number of small cell lung cancers and breast cancers diagnosed via screening. We defined the first acute Trust of attendance for each tumour using an algorithm based on the various events in the patient pathway, such as imaging, diagnosis, surgery etc.
Results: The generic and site specific metrics can be viewed using an online portal and are displayed for the first acute Trust attended in the patient pathway. The reports can be shown for all acute Trusts, grouped by Strategic Clinical Network, and can be drilled down for individual Trusts.
Conclusions: This is a useful tool for commissioners, enabling faster access to clinically relevant data. More work is required on the site specific metrics in conjunction with clinicians in the interpretation of them. The online portal will become more interactive so that users are able to produce totally bespoke reports.

Abstract P-31

Method for finding the organisation code of first trust visited in the English National Cancer Registration dataset

Karen Linklater[1], Jackie Charman[2]
[1]*Public Health England, National Cancer Registration Service, London*
[2]*Public Health England, Knowledge and Information Team, West Midlands*

Background: In order to run the metrics required for the Cancer Headline Indicators (CHIs) we need to be able to look at the Trust the patient first visited on their cancer journey. There are a number of different fields within the Cancer Analysis System (CAS) tables that could be used for a cancer patient on their cancer pathway.
Method: We looked for completeness of date and organisation fields in trusts taken form CAS and Cancer Waiting Times (CWT). As CWT does not have a reliable tumour identifier, CAS breast tumours (C50/D05) diagnosed in 2012 (a total of 49 010) were linked to CWT records for C50/D05 where the 'Date first seen' (DFS), 'Treatment Period Start Date' (TPSD) or 'Treatment Start Date' (TSD) were within ±60 days of the

CAS diagnosis date. We also looked briefly at the available 2013 data to see if there was an improvement with the full implementation of COSD. We then wrote an algorithm which took into account a variety of different tables and events In order; Referral, Imaging, Diagnosis, Surgery, Pathology, Chemotherapy, Radiotherapy, Treatment and finally Death.
Results: We discovered 'trust of first event' is more complete than 'trust of diagnosis', although these two are more equal and more complete in 2013. Other trust sources are less complete. The results confirm that CAS trust of first event is most complete and matches to CWT trust of treatment slightly more than to trust first seen, but is the best match of all CAS trusts considered. The algorithm brought back a better return and gave a first trust for most tumours.
Conclusions: In order to produce meaningful metrics using the cancer cases which have been completed and QA'ed on CAS we decided that the algorithm produced the best match in discussion with the CHI development team.

Abstract P-32

Lung cancer services in London

Karen Linklater[1], Stephen Scott[2]
[1]*Public Health England, National Cancer Registration Service, London*
[2]*London Cancer Alliance*

Introduction: London Cancer Alliance and London Cancer, the two Integrated Cancer Services in London, want to be able look at a variety of generic and site specific metrics within their constituent Trusts in as real time as possible to be able to inform commissioning and the provision of cancer services and to drive up standards of care and thus to improve outcomes for lung cancer patients.
Methods: The main source of data for the lung cancer metrics is the Patient Administration System (PAS) data sent to the National Cancer Registration Service (NCRS). These data are eventually matched to the existing NCRS database to link any existing cases before any new cases are added. We extracted all episodes with a mention of lung cancer from PAS data for the Trusts within London for the period 2013. For certain metrics, where a definite date of diagnosis was needed, the cases which had been fully entered on to the English National Cancer Online Registration Environment (ENCORE) were used.
Results: At the beginning of November the total number of episodes for lung cancer patients seen within a London Trust in 2013 was 6619 which constituted 2292 patients with a diagnosis date in 2013. 49% of the PAS cases linked to a case already on ENCORE and 83% of the linked PAS cases had a diagnosis date in 2013. The majority of patients are seen at the tertiary referral Trusts which are responsible for lung cancer care.
Conclusions: These metrics are a useful tool for both the London Cancer Alliance and London Cancer. Discussions with Pathway Boards and clinicians will better inform the metrics and allow for their clinical interpretation and will lead to improved cancer services and outcomes.

Abstract P-33

The Role of the Multidisciplinary Team (MDT) in the management of early stage endometrial cancers diagnosed outside the regional cancer centre in Northern Ireland: a 5 year review

Meabh Cosgrove[1], Stephen Dobbs[1], Ian Harley[1], Hans Nagar[1], John Price[1]
[1]*Department of Gynaecological Oncology, Belfast City Hospital*

Background: Multidisciplinary Team (MDT) meetings play an important role in the management of gynaecological malignancies. The Campbell report (1997) stated that staging of some cancers of the uterine body was less than adequate in Northern Ireland, resulting in sub-optimal treatment for some women. Evidence suggests that not all MDT decisions are implemented into care. Aims To investigate the role of the MDT in planning the management of patients diagnosed with early stage endometrial cancer outside of the regional cancer centre in Northern Ireland within the last 5 years.
Methods: The patient cohort was identified using the Cancer Patient Pathway IT System (CaPPS). The electronic patient records were retrospectively reviewed to determine route to diagnosis, initial tumour type, grade and stage. The MDT decision for treatment planning was noted, along with the patient outcomes, including type of surgery (open, laparoscopically assisted or total laparoscopic hysterectomy) the final histological grade and stage.
Results: 334 cases were identified within the study period. 15 patients were diagnosed following surgery for perceived benign conditions. Over 90% of cases were endometrioid adenocarcinoma, with the majority being diagnosed at hysteroscopy. Almost all the patients had staging MRI performed. Most patients had laparoscopically assisted vaginal hysterectomies, with a smaller cohort having total laparoscopic surgery. In only 4% of cases was the MDT decision for treatment found to be suboptimal.
Conclusions: Nearly all of the cases of early endometrial cancer within the study period were appropriately staged at local level prior to MDT input. Many patients, particularly those with early stage disease require little discussion. Their management could easily be planned according to an agreed protocol, leaving time for those cases requiring more complex discussion. A significant number of patients outside the regional cancer centre are still undergoing open surgery, where a more minimally invasive approach would be preferable

Abstract P-34

Making raw PAS, PATH and MDT data feeds meaningful

Karen Linklater[1], Karen Graham[1]
[1]*Public Health England, National Cancer Registration Service, London*

Introduction: As part of the implementation of the Cancer Outcomes and Services Dataset (COSD) trusts are required to send Patient Administration System (PAS), pathology (PATH) and MDT data files to the National Cancer Registration Service (NCRS) monthly.
Methods: We looked at the raw data files to see how many episodes and patients had been sent each month and for the PAS and PATH data used the inbuilt conditional formatting in Excel to highlight any gaps in the data for each trust. After processing onto the English National Cancer Online Registra-

tion Environment (ENCORE), we examined the accrual over time, and how many episodes in a given year are actually diagnosed in that year and for what other sites patients have been previously registered. We also looked at the MDT data to ascertain what accrual of cases we could expect.
Results: Cases accrue steadily throughout the year for both PAS and PATH. For breast cancer the number of cases with an episode in 2013 which have a breast cancer diagnosis in 2013 is 55% whilst for lung cancer it is 70%. However, looking at the pathology shows that 92% of breast cases have both a breast pathology and a diagnosis in 2013 but for lung this is 80%. MDT data results are to be run shortly.
Conclusions: These conditionally formatted graphs are a useful tool for highlighting gaps in data and it is hoped that these graphs will become a part of the COSD portal. A major tranche of the COSD care plan data are received via MDT feeds so being able to understand the accrual of these data is crucial. The better we can understand the data we receive the better we are able to improve the data and thus improve service provision and patient outcomes.

Abstract P-35

An electronic tool for aiding the clinical trial referral process

Richard Clapham[1], Andrew Wardley[1], Thomas Thornber[1], Matthew Barker-Hewitt[1], Jacqueline Livsey[1], Catherine O'Hara[1]
[1]*The Christie NHS Foundation Trust*

Background: Evidence suggests not all cancer patients have equal access to clinical trials. Some differences may be associated with patients' understanding of trials that may be improved by increased opportunity for discussion with their oncologist. As clinic time is limited, we have designed a tool to provide rapid access to bespoke information about relevant clinic trials for each patient.
Method: The Christie uses its own in-house system of web forms for recording patient data, each completed by the responsible consultant. We designed a tool to sit within these web forms whereby information, entered by the clinician, is simultaneously matched to clinical trial criteria. Any trial the patient matches to is flagged to the clinician with a link to information about that trial to aid patient-doctor discussions. We developed a prototype of this tool based on two early-phase breast cancer trials (BEECH and FAKTION), focusing on 6 selection criteria. This prototype was tested on a dataset of 2783 breast cancer patients.
Results: The tool successfully identified 31 patients for BEECH and 26 patients for FAKTION. None of these patients had been previously referred for these trials. Both trials are early phase trials and therefore only a small number of patients will meet the criteria. Nevertheless the number of patients currently being referred is lower than expected. Our results present a potential two fold increase of referrals to these trials.
Conclusion: This pilot demonstrates how an innovative adaptation to existing processes can potentially aid and change clinical practice. Our tool capitalises on structured data already been recorded by the clinician, immediately providing patient specific information that can be used to facilitate the trial discussion. Feedback from The Christie Breast Oncology and Early Phase Trial teams has been positive and plans are in place to develop the tool further.

Abstract P-36

Modernising the provision of prostatic surgical services

Eileen Kesson[1], David Morrison[2], Gwen Allardice[1], Iain Wallace[3]
[1]*NHS Greater Glasgow and Clyde Health Board*
[2]*University of Glasgow*
[3]*NHS Lanarkshire Health Board*

Background: In 2012, West of Scotland (WoS) urological surgeons provided only an open radical prostatectomy (ORP) service. The WoS Cancer Surveillance Unit was asked to describe the impact there would be on the service if it was modernised to offer minimally invasive radical prostatectomy (MIRP) in addition to ORP.
Method: (1) Populations We used cancer registry data provided by ISD Scotland (2007–2011) and population data for years 2012, 2015 and 2020 which were provided by GRO-Scotland. Using these sources of data, projected incident cases were calculated for years 2015 and 2020. (2) Predicting demand Using population and prostatectomy service data from regions where MIRP had not been introduced (WoS Cancer Network) and regions where it was an established procedure (North and South-East Scotland Cancer Networks, the Knowledge and Intelligence Team (South West) Public Health England, the British Association of Urological Surgeons (BAUS)), future demand of surgical activity relating to OPR or MIRP was calculated for the WoS.
Results: A lower incidence of prostate cancer is now predicted than was previously envisaged. Introducing MIRP in North and South-East Scotland led to an increase in the overall intervention rate to 15%. MIRP carried out as a proportion of total operations in these regions ranged from 67% in the North to 83% in the South-East. Based on revised projected incidence and intervention data from these two regions, within 1 year of the introduction of MIRP 40% of the interventions in WoS would be MIRP rising to 80% MIRP within 5 years.
Conclusions: (1) We provided a rational basis for modernising a clinical service. (2) Close engagement with managers and clinicians was essential to understanding each other's perspective on the project. (3) Resulting predictions have enabled managers and clinicians to plan for appropriate workforce, skills- mix and facilities. Reference 1 ISD Cancer Statistics

Abstract P-37

Projections of urgent GP referrals for suspected cancer until 2019/20 in the East Midlands

Marta Emmett[1], Carolynn Gildea[1], Jason Poole[1]
[1]*PHE – East Midlands Knowledge and Intelligence Team*

Background: A 51% increase in the number of urgent GP referrals for suspected cancer from 2009/10 to 2013/14 was reported by the Improving Outcomes: A Strategy for Cancer Fourth Annual Report (Department of Health, 2014). Such an increase can have a large impact on diagnostic services and capacity. To support the commissioning of these services in the East Midlands, projections were calculated for the possible future trends in the number of urgent GP referrals for the next 5 years.
Method: For the East Midlands, half-yearly data, from Apr–Sep 2009/10 to Apr–Sep 2014/15, on urgent GP referrals for 14 suspected cancer types were used to calculate projections until

Oct–Mar 2019/20. Projections were based on a simple linear regression, with the use of a summer-winter indicator variable or the exclusion of some initial observations which appeared inconsistent with the recent trend, where relevant.
Results: By 2019/20, compared to 2013/14, the number of urgent GP referrals for all suspected cancer types is projected to increase by around half, from 110 875 to around 162 400. Individually, increases between 39% and 56% are projected for: skin, urological, lung, breast, brain/CNS, gynaecological, upper gastrointestinal, head and neck, lower gastrointestinal and haematological. Larger increases are projected for sarcomas and other suspected cancer; and smaller increases are projected for children's cancer and (non-cancer) breast symptoms.
Conclusions: These results indicate that a large increase in the number of patients being urgently referred from primary to secondary care for suspected cancer across the East Midlands is likely to continue over the next five years. This will have an increasing impact on clinical practice and those involved in commissioning cancer services are urged to take notice of these findings and plan accordingly. Acknowledgements Cancer Waiting Times data was obtained from the National Cancer Waiting Times Monitoring Dataset, provided by NHS England.

Abstract P-38

Quality metrics for evaluation of new Multidisciplinary Diagnostic Centres

Donna Chung[1], Andrew Millar[1,2], Claire Levermore[3], Mairéad Lyons[1], Kathy Pritchard-Jones[1]
[1]*London Cancer, UCLPartners*
[2]*North Middlesex University Hospital NHS Trust*
[3]*University College Hospitals NHS Foundation Trust*

Background: Late diagnosis is a significant cause of the worse cancer mortality in UK compared to Europe. Only a small proportion of abdominal complaints presenting in primary care would subsequently be diagnosed as cancer. Within London Cancer in 2012 a high proportion of cancers were advanced at diagnosis (Stage 4) – 74% of pancreas, 57% of hepatobiliary and gall bladder, and 35% of oesophagus and stomach. To compound the problem, patients with abdominal cancer are often diagnosed after attending Emergency Departments, where the patient pathway is fragmented, resulting in poorer patient experience and outcomes.
Method: Building on our engagements with patients, clinicians and charities, two pilot Multidisciplinary Diagnostic Centres (MDCs) have been developed to provide access to rapid specialist assessment and appropriate diagnostic tests leading to a defined management plan within four days of referral. The MDCs will be available for: (1) patients with severe but non-specific worrying symptoms, warranting rapid diagnosis but not qualifying for a '2 Week Wait' referral; (2) patients with severe symptoms for whom admission to hospital currently offers the only clinically appropriate route to timely care. The Model of Improvement is used as the framework to evaluate whether our intervention will deliver better value for our patients and the population.
Results: Measurement is integral to the pilot for internal process control and tracking outcome of our intervention. Twenty metrics have been identified by our project team, encompassing process (3), outcome (3), health economic (5) and balancing (9) measures. Patient involvement facilitates the focus on outcomes mattered most to our patients.
Conclusion: Demonstration of positive change in outcomes for our patients and population is essential for the new diagnostic pathway. Prospective data relevant to healthcare teams and patients enable them to take ownership of the change process, encourage cross fertilisation and ultimately wider adoption and diffusion of innovation.

Abstract P-39

Stereotactic ablative body radiotherapy for early stage lung cancer – a business case and outcomes audit, NICC, Belfast

Sai Jonnada[1], Gerry Hanna[1], Jonathan McAleese[1]
[1]*NICC, Belfast City Hospital*

Background: Lung cancer is the leading cause of the cancer death. 80% of all lung cancers are non-small cell lung cancers (NSCLC). Surgery is the gold standard with a cure rate of 60–70% for early stage (T1/T2 N0 M0; AJCC stage I). Many of the stage I NSCLC are inoperable. Conventional external beam radiotherapy (EBRT) offer a cure rate of 20% at 5 yrs. There is increasing evidence that Stereotactic Ablative Body Radiotherapy (SABR) is superior to EBRT with cure rates in the order of 40%. A business case was fully approved in May 2014 for Stereotactic Ablative Body Radiotherapy (SABR) for early stage Lung cancers following a pilot programme. The current practice and outcomes of SABR has been audited against the standards of business case and UK SABR consortium guidelines
Methods: Data on Patient demographics, stage, dose fractionation, toxicities outcomes was collected on patients who were treated with SABR either at Northern Ireland Cancer Centre, Belfast or sent to England, between August 2010 and August 2014.
Results: 35 patients were identified of which 17 patients were treated in England and 18 patients were treated at Belfast. With a median age of 74, 19 (54%) were women and 16 (46%) were men. All the patients were staged as AJCC Stage I (100%). Common dose fractionation schedule used was 55–60 Gy in 5 fractions delivered over two weeks (57%). Median survival was not reached but estimated was 36 months and estimated 2 year overall survival was 80%. Grade 2 or more toxicities include breathlessness (6.7%), rib fracture (3%)
Conclusions: Key parameters are in line with the standards and show the superiority of SABR over conventional EBRT. The data need to mature to assess long term efficacy and toxicities. It was suggested that standard objective assessment of toxicities should be documented.

Abstract P-40

Personal and Public Involvement in Cancer Registry Research – The Northern Ireland model

Margaret Grayson[1], Ruth Boyd[2], Anna Gavin[3], Conan Donnelly[3]
[1]*Northern Ireland Cancer Research Consumer Forum*
[2]*Northern Ireland Cancer Trials Centre*
[3]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*

Background: In 2011 the NI Cancer Research Consumer Forum (NICRCF) was established to align with a strategy for Personal and Public Involvement (PPI) in cancer research in

Northern Ireland, and provide a visible focus and resource for all cancer researchers in NI. The Northern Ireland Cancer Registry (NICR) is responsible for producing official statistics on cancer incidence and survival in NI and is engaged in a number of population level studies to inform cancer services and policy in NI. In 2012 the NI Cancer Registry established links with the NICRCF, developing a relationship to systematically incorporate PPI within the work of the NICR.
Methods: The NICRCF is a group of patients and carers affected by cancer, working in partnership with researchers for the benefit of patients. Researchers contact the PPI Lead based in the NI Cancer Trials Centre, who liaises with Forum members about PPI opportunities. Mechanisms for PPI include e-mail consultation, research presentations and discussion with Forum members, review of patient information, membership of study steering groups and research committees.
Results: As well as continuous improvements in the delivery of cancer registration, the NICR has planned and implemented three population studies alongside the NICTN. Activities undertaken with the Forum have included:
Establishing understanding of the work of the NICR including a tour of facilities by NICRCF:

- Review of new NICR service improvement and study proposals
- Review and endorsement of research funding applications
- NICRCF member on study steering groups and NICR Council
- NICR speaker at Forum-hosted public event
- Consultation on the NICR public information leaflet and video
- Forum Chair membership of NCIN conference scientific committee

Conclusions: The Forum and NICR have effectively worked in partnership enhancing the development of registration and research protocols demonstrating the success of this model in NI, and the value of a strategic approach to PPI.

Abstract P-41

The experiences of people living with cancer (plwc) when undergoing care transitions

Jon Ardill[1], Arwenna Davis[1], Olamide Iyiola[1]
[1]*Macmillan Cancer Support*

Background: While there is substantial evidence around the experiences of people living with cancer (plwc), there is currently only a fragmented view of their experiences at the transition points between services and providers. The research aimed to identify and measure the experiences of plwc at these times.
Method: There were three stages to this research: a) 13 scoping interviews and a review of the literature; b) 86 qualitative depth interviews using a journey mapping approach to explore the experiences of plwc across the care transitions, and c) a quantitative stage to measure the issues that are most likely to lead to positive and negative experiences of care. The final stage of the research is currently in progress.
Results: The literature review identified a paucity of research around this issue. The findings from this suggested that those who were better informed and received the support of clinical nurse specialists were more likely to have positive experiences. The qualitative stage found that plwc had varied experiences of transitions both in terms of their support needs, and in the quality of the support and care that they received. Some found transition periods particularly stressful. The issues are now being explored and measured using online and paper surveys. The findings will also be used to determine any gaps in data collected in the Cancer Patient Experience Survey (CPES).
Conclusions: Those taking part in this research have valued the opportunity to have their say about an under-reported but vital aspect of their experience. Patients and health and care providers need to work together to ensure that transitions are well managed & people living with cancer have the information and support that they need in periods of transition as well as times when services are available.

Abstract P-42

Colorectal cancer outcomes – comparing local data for the Taunton and Somerset NHS Foundation Trust with results reported in the National Bowel Cancer Audit Progress Report 2014

Helen Weaver[1], Dylan Chew[1], Adam Wood[1], Louise Hunt[1]
[1]*Taunton and Somerset NHS Trust, Musgrove Park Hospital*

Background: The National Bowel Cancer Audit Progress Report 2014 (NBCA) analysed data from 31 723 patients diagnosed with colorectal cancer (April 2012–March 2013) and reported a national 90 day post-operative mortality rate of 4.6%. The reported rate for Taunton and Somerset NHS Foundation Trust (TSFT) was 8.7%. We assessed local post-operative mortality, length of stay and laparoscopic surgery rates and compared them with the NBCA results.
Method: Patients who underwent primary colorectal cancer resection between 1st April 2012 and 31st October 2014 were identified from the Enhanced Recovery Programme (ERP) database and additional information was collected from their medical records.
Results: 310 primary resections were performed. 18 patients died giving an overall mortality rate of 5.8%. 5 died within 90 days of their primary resection (1.6%). In the NBCA timeframe, there were 136 resections and 3 patients died within 90 days. This gives a 90 day mortality rate of 2.2% compared to the 8.7% reported by the NBCA. 228 (73.5%) of resections were initially laparoscopic but 43 were converted to open. The NBCA reported 61% of resections nationally were initially laparoscopic. According to the NBCA, over two thirds of patients remain in hospital for more than 5 days (62% in TSFT). Local data shows 45.2% discharged after day 5 (55.9% in the NBCA timeframe).
Conclusions: There is a significant difference in the NBCA reported 90 day mortality for TSFT compared to the local data, however, reported length of stay and laparoscopic resection rates are similar. Non-ERP patients are more likely to have been frailer and have poorer survival chances overall. Therefore, it is accepted that the findings of this audit are skewed by lack of access to the Somerset Cancer Registry and this may partly explain the discrepancy between the NBCA and local data.

Abstract P-43

An analysis of unscheduled care for oncology patients within a regional cancer centre

Peter Gallagher[1], Nick Henry[1], Debbie Wightman[1], Paula Scullin[1]
[1]*Cancer Centre Belfast City Hospital, Belfast HSC Trust*

Background: From 2010 to 2014 there has been an increase in the number of unscheduled care admissions to the Cancer Centre (CC) Belfast City Hospital from approximately 1200 admissions per year, to now over 1700 admissions per year. Over the same period there has been an increase in patients being admitted directly to the CC (via its current unscheduled care service which includes a 24/7 chemotherapy helpline) and fewer (now 5%) via Emergency Departments. Therefore unscheduled care pathways in the CC are being increasingly utilised. The aim was to examine the current unscheduled care pathway with the objective of identifying areas for development and suggesting ways that could improve the pathway thereby improving patient care.
Method: Using data from patient flow teams the unscheduled assessments and admissions process in the CC was evaluated over a 2-week period in autumn 2014 and data collected on the (1) number of patients requiring unscheduled assessment ± admission (2) time from initial assessment to admission to an acute oncology bed. (3) reason for admission (4) median length of stay for all unscheduled admissions and (5) factors that could improve patient management
Results: Over the audit period there were 88 recorded oncology unscheduled assessments through the helpline. Of these 41% required admission. In this group 78% were admitted to an oncology bed within 4 h of medical assessment. There were a total of 53 admissions for unscheduled care to the CC over the audit period. The most common reasons for admission were for management of side effects secondary to systemic anti-cancer therapy and for management of cancer symptoms. The median length of stay for unscheduled admissions was 6.8 days, which is above the peer average.
Conclusion: A new unscheduled care pathway is being developed to improve patient flow and experience during both the assessment and admission process.

Abstract P-44

Improving breast services – it's in the DNA

Caroline Byrne[1], Leena Chagla[1]
[1]*St Helens and Knowsley NHS Trust*

Introduction: All breast referrals must be seen within 2 weeks. The sheer volume of referrals from primary care makes this a challenging target to achieve. It is therefore extremely important that clinics are utilised appropriately and that every effort is taken to minimise non-attendance. Current hospital policy is to re-appoint all patients referred under the 2 week rule who do not attend (DNA) their first appointment. The purpose of this audit was to review all the DNAs and see if giving a second appointment is cost effective or is in fact a useful policy.
Method: A retrospective review of all new breast referrals who did not attend their appointment over a 12 week period (01/08/14 – 31/10/2014) was performed.
Results: A total of 56 clinic appointments were not attended by patients over the 12 week period. Only 33.9% ($n = 18$) of those appointments re-issued were attended. Out of those patients who attended no cancers were identified and 44.4% ($n = 8$) had no clinical/radiological abnormality.
Conclusion: National and hospital policy of automatically sending a second appointment does not work for breast 2 week referrals and is a major waste of resources. Accepting Consultant review of referral information, then issuing a further appointment if indicated, rather than having a blanket policy would have saved our Trust approximately £14 000 in 3 months.

Abstract P-45

Mohs' micrographic surgery: a needs assessment of patients with basal cell carcinoma attending a large UK Health Care Trust

Gemma McIntyre[1], Louise MacDonald[2], Olivia Dolan[2], Olga Kerr[1]
[1]*Belfast City Hospital*
[2]*Royal Victoria Hospital*

Mohs' Micrographic Surgery (MMS) is recognised as the gold standard treatment for high-risk basal cell carcinoma (BCC). 'High Risk' BCCs have a greater risk of recurrence and are typically located on the 'H-zone'. The British Association of Dermatology (BAD) and the British Society for Dermatological Surgery (BSDS) have outlined recommendations for optimal management of BCC with particular reference to eligibility for MMS. The aim of this needs assessment was to establish baseline information on current practice and to compare the number of patients with BCC being referred for MMS with the number deemed eligible based on BAD/BSDS recommendations. A total of 463 patients with a histological diagnosis of BCC during a 3-month period (October–December 2013) were identified from the Trust Pathology database. The sample included those cases treated by both Dermatologists and Plastic Surgeons working within the Trust. We excluded all non-head-and-neck BCCs. Data collected included site, size of lesion, histological subtype, recurrence, clinical definition, post-excision margin involvement, perineural/lymphovascular/extra-dermal spread and other risk factors including immunosuppression. Data was risk stratified based on established BAD and BSDS guidelines. 73% (337/463) of cases were suitable for MMS. 61% (207/337) had two or more risk factors as per BAD guidelines and 70% (235/337) as per BSDS recommendations. Margins were involved post-excision in 15% (52/337) of MMS-eligible cases and 11% (36/337) were known to be recurrent lesions. 7% (24/337) had perineural/extradermal involvement stated on the histopathology report. Of the total cases suitable only 16.6% (56/337) were referred for MMS. On review of the literature this appears to be the first large scale MMS needs assessment for management of high risk BCC in a UK centre. This study highlights that there is a significant unmet demand for MMS and emphasises the importance of establishing a fully commissioned MMS Service for the region.

CHILDHOOD, TEENAGE & YOUNG ADULTS

Abstract P-46

Coping with cancer – supporting young people's resilience

Helen Gravestock[1], Ruth Plackett[1], Rachel Tappenden[1], Tracy Cosgrave[1]
[1]*CLIC Sargent*

Background: CLIC Sargent research found that many young people were anxious about the future and highlighted the impact of the cancer journey on their confidence. To explore these issues further, research was undertaken on how young people seek support, information and advice to cope with cancer and develop self-confidence, looking in particular at how this might be linked to the notion of resilience.
Method: A literature review was undertaken to understand the evidence base on help-seeking and resilience and its applicability to young people with cancer. 138 young people (aged 16–24) were consulted through an online survey (124) and a focus-group (14). Interviews were conducted with academics and practitioners to understand their views of help-seeking behaviour and resilience among young people with cancer.
Results: Access to quality information is key to helping young people with cancer feel confident managing their illness and building resilience. The source of information chosen depends on the topic; 96% of survey respondents use the internet; 74% of the young people would speak to a healthcare professional for advice and support. It's useful to conceptualise resilience as an outcome of successfully coping with stressful experiences. 'Resilience' is often linked to 'coping' and 'competence'. Approaches to building resilience include those focused on individuals and those focused on the wider health and social care system – both are relevant to young people with cancer.
Conclusion: The research has enabled CLIC Sargent to reflect on its services and identify ways to improve support for young people. For example, an online community for young people with cancer was launched in early 2015. CLIC Sargent also propose a number of priorities for change for the wider health and social care sector, to move towards a system of support that fosters resilience in young people with health conditions such as cancer.

Abstract P-47

Rethinking long term follow up of childhood cancer survivors in Northern Ireland

Judith Ewing[1]
[1]*Public Health Agency*

Background: Survivors of childhood cancer (CC) are at risk of a wide range of late effects that may develop and persist throughout the life course. Long term follow up (LTFU) is recommended to identify and mitigate late effects and optimise outcomes. There is a lack of consensus regarding the best context for LTFU delivery. The aim of this project was to: i. Examine international models of care for LTFU of CC survivors. ii. Describe the epidemiology of CC in Northern Ireland (NI). iii.Review current services for CC survivors in NI and consider how their needs can best be met.
Methods: A literature review was performed to identify models of LTFU delivery that have been proposed and trialled internationally. NI Cancer Registry data were used to describe the local epidemiology of CC and estimate the number of survivors living in NI. An audit of LTFU for central nervous system (CNS) CC survivors was carried out to ascertain current service provision.
Results: There are over 800 people living in NI with a history of CC diagnosed between 1993 and 2012. Five year survival for 2001–2005 is estimated at 79.0%, which compares favourably to UK figures and with a mean of 50 new cases per year will contribute to an on-going increase in the survivor population. Currently in NI, LTFU occurs in a dedicated late effects clinic provided by paediatric oncology which provides a high quality service, but is not an appropriate or sustainable means for LFTU throughout the life course.
Conclusion: A sustainable model for LTFU involves a focus on health education to empower survivors and a risk-based approach to ensure that LTFU is individualised and appropriate. Further stakeholder engagement with survivors, parents and providers is required to reach consensus on how best to deliver care.

Abstract P-48

Central venous access devices in childhood cancers; does site affect complication rate?

A. E. Louise McMurran[1], Atul Sabharwal[1]
[1]*Department of Paediatric Surgery, Royal Hospital for Sick Children, Glasgow*

Background: Central venous access devices (CVADs) may be used to deliver chemotherapy in childhood cancers. However, their use is often complicated by issues such as infection, blockage and poor line position. Staff at the Schiehallion haemato-oncology unit at our institution suggested that certain line sites were more likely to develop complications, and therefore necessitating antibiotic treatment, line repositioning or removal. We investigated complications at each CVAD site, to help advise line placement and reduce rates of complications overall.
Method: Patient demographics, line site and complications were recorded for all 1st CVADs listed in the Schiehallion CVAD database over a period of ten years.
Results: 688 CVADs were inserted during this time period in children with a mean age of 6.5 years. 58% had a diagnosis of haematological malignancy, with the remainder receiving treatment for solid tumours. The right internal jugular vein was the most commonly used site (36%). The highest rate of complications were seen at the left internal jugular (48%) and the left subclavian (40%). The most common reason for line removal was infection at 22% across all sites, although lines placed in external jugular veins had a lower rate of infection (18%).
Conclusions: This study shows that the site used for CVAD placement does affect the rate of complications in children receiving chemotherapy. Therefore, it provides information to surgical teams choosing CVAD site for these patients. In particular, we would recommend avoiding the left internal jugular and left subclavian sites, if possible, and suggest that placement in the external jugular veins may be beneficial in immunocompromised patients who are more susceptible to infection.

Abstract P-49

Childhood Cancer Registry a Romanian initiative in order to ensure access to data of higher quality at national level

Daniela Coza[1,2], Luminita Blaga[2], Alexandru Todescu[3], Mihaela Bucurenci[4], Monica Dragomir[4]
[1]*The Oncology Institute 'Prof. Dr. Ion Chiricuta', Cluj-Napoca, Romania*
[2]*Cluj Regional Cancer Registry*
[3]*Romanian Society of Pediatric Oncohematology*
[4]*The Oncology Institute 'Prof. Dr. Alexandru Trestioreanu*

Background: In European populations, about 1% of all malignant neoplasms arise in patients younger than 20 years. Romania, with 20 million inhabitants, is failing in assuring national cancer registration coverage. In 2009, Romanian Society of Pediatric Oncohematology had the initiative to found and support National Childhood Cancer Registry (NCCR), aiming at collection, presentation, and interpretation of data for cancer incidence and survival in children (0–14) and adolescents (15–19).
Method: Cases are collected, regularly, by trained personnel, from 9 out of 12 treating centers, representing about 80% out of national coverage. Registration of all malignant neoplasms, together with nonmalignant nervous tumours, in patients younger than 19 years, is compliant with the ENCR/IACR standards and recommendations. Tumours, ICD-O-3 coded, were grouped according to the International Classification of Childhood Cancer (ICCC3) for presentation of results. For survival analysis we used Kaplan Meier method, applied to the 2010 cohort of new cases, followed up to 15th August 2014.
Results: A number of 1371 new cancer cases were recorded (2010–2014), among those 263 deaths occurred (5.2%). In 2010 were registered 335 cases (187 in boys and 148 in girls, sex ratio 1.2), 244 for children 0–14 years (144 boys and 104 girls, sex ratio: 1.3). According to these data, leukemias at 24.9%, lymphomas at 20.9%, and brain tumours at 19.2%, represent the largest diagnostic groups among the under 15-year-olds, and lymphomas at 27.5%, leukemias at 20.9% and malignant bone tumours at 16.5% in adolescents. 1-year and 3 year survival rate was higher in children than in adolescents and in girls than in boys.
Conclusions: The low frequency, a major difficulty for studies of putative risk factors and clinical management, was the trigger for the professional society in developing NCCR, allowing access to information about the truth burden of childhood cancers in Romania.

Abstract P-50

Skin cancer in under 18 years old in England

Veronique Poirier[1], Paul Losty[2], Julia Verne[1]
[1]*Knowledge and Intelligence SW, PHE*
[2]*University of Liverpool*

The incidence of skin cancer is increasing in England and while it remains predominantly an adult cancer and a rare cancer in children (4% of overall paediatric cancers), timely referral, treatment and advice to parents must be established for paediatric cases. This study reports data for a cohort of patients under 18 years old who presented with skin cancers in England during the era(s) 2005–2012. Skin cancer data (ICD10 C44 – non melanoma skin cancer (NMSC) or C43 – malignant melanoma (MM)) were extracted from the National Cancer Registry Service. Tumour morphology, anatomical distribution, gender, type of first treatment, Breslow thickness at presentation and lymph node operation(s) including mortality rate(s) were analysed. 489 cases under the age of 18 years were diagnosed with skin cancer in England. 285 cases were diagnosed with NMSCs -151 were basal cell carcinoma, 16 squamous cell carcinoma, 43 dermatofibrosarcoma and others. 204 had MM and of these 64 cases were superficial spreading MM. The majority of index cases occurred in 11–17 year old patients (n = 399) with an overall male to female ratio of 1:1.6 for MM and 1:1 for NMSC. Anatomical distribution showed that 28% of MMs were on the trunk region and 59% of NMSCs on the head and neck area. 34% of MM cases had a Breslow thickness > 2 mm with 18% also > 4 mm.11% of MM cases underwent lymphadenectomy operation(s). 16 deaths occurred within 0–6 year period from primary diagnosis. This study highlights national data, clinical management and outcomes(s) of skin cancer(s) in a paediatric population. It usefully serves a public health warning. Whilst a ban on sun bed usage has been introduced for those <18 years it has not however led to a decline in 'tanning burns' from those who continue this practice (1). 1. N.Bowtell et al, NCIN conference 2014

Abstract P-51

Cause-specific late mortality among survivors of childhood cancer in Switzerland: a population based cohort study

Matthias Schindler[1], Corina S. Rueegg[2], Ben D. Spycher[1], Marc Ansari[3], Roland A. Ammann[4], Gisela Michel[2], Claudia E. Kuehni[1]
[1]*Swiss Childhood Cancer Registry, University of Bern*
[2]*Department of Health Sciences and Health Policy, University of Lucerne*
[3]*Department of Pediatrics, Geneva University Hospital*
[4]*Department of Pediatrics, University of Bern*

Aims: Survivors of childhood and adolescent cancer have a higher mortality compared to the general population. We described cause specific late mortality (>5 years since diagnosis) in the nationwide Swiss childhood cancer survivor cohort.
Methods: We included all persons diagnosed with cancer in Switzerland (1976–2004) at age 0–14 years who survived ≥5 years from diagnosis. Survivors were followed until December 31, 2009. We obtained causes of death (COD) via record linkage with the Swiss mortality statistics. Age, calendar year and sex standardized mortality ratios (SMR) and absolute excess risks (AER) were calculated for different causes of death by Poisson regression using data from the Swiss general population. Cumulative mortality was calculated treating COD other than the one under observation as competing risks.
Results: 3815 survivors and 44 453 person years at risk were included. Of these, 219 persons (5.7%) died, which was 11 times the number expected (SMR 10.7; 95% CI: 9.3–12.2). We observed 45, 36 and 9 excess deaths per 10 000 person years due to all causes, all causes except recurrence and all causes except cancer, respectively. Mortality was particularly elevated for deaths due to secondary neoplasms (SMR 11.3, CI: 7.6–16.7), congenital malformations (SMR 9.1, CI: 3.8–21.8), infectious diseases (SMR 7.3, CI: 2.7–19.3) and circulatory diseases (SMR 3.2, CI: 1.0–9.8). Mortality form external causes was lower compared to the normal population (SMR 0.5, CI: 0.2–1.2), but without being statistically significant. Cumula-

tive mortality from recurrence increased steeply in the first 15 years after diagnosis to 3.9% (CI: 3.4–4.5) and increased thereafter more slowly to 5.4% (CI: 4.5–6.4) at 30 years after diagnosis. Cumulative mortality from all causes except recurrence increased nearly linear with a 30-year mortality of 4.3% (CI: 3.3–5.6).
Conclusions: Early detections of secondary neoplasms and other late effects might help to reduce late mortality in childhood cancer survivors.

Abstract P-52

Loss in expectation of life due to a childhood cancer diagnosis; an example using CNS tumours

Mark J Rutherford[1], Raoul C Reulen[2], David L Winter[2], Paul C Lambert[1,3], Michael M Hawkins[2]
[1]*Department of Health Sciences, University of Leicester*
[2]*Centre for Childhood Cancer Survivor Studies, University of Birmingham*
[3]*Department of Medical Epidemiology and Biostatistics, Karolinska Institutet*

Background: It has been established that childhood cancer survivors suffer from excess mortality compared to the general population for many years after their diagnosis, due in part to long-term impacts of intense treatment at a young age. It is vital to be able to meaningfully quantify the impact of this extra mortality burden.
Methods: Using data from the British Childhood Cancer Survivor Study, we restrict to patients with a childhood diagnosis of tumour of the Central Nervous System (7892 of 34 567 five-year survivors of childhood cancer). For those diagnosed recently, we extrapolate the long-term excess mortality burden using 3 different approaches relying to a greater or lesser extent on historical data. We present the impact of the different assumptions by calculating the estimated average age at death for the cancer patients and compare this to those in the general population. Model 1 assumes that there is relatively little long-term impact of the diagnosis, whereas Models 2 and 3 rely on trends for those diagnosed in the past to estimate the long-term impact.
Results: The results from all 3 models show that there is a considerable loss in life expectancy in spite of the fact that these patients have survived for at least 5 years following diagnosis. Male patients aged 10 at diagnosis are estimated to lose 8.4, 11.1, and 17.6 years on average from their life expectancy because of their diagnosis under the 3 different models respectively.
Conclusion: Under all scenarios, there is a significant loss in life expectancy for survivors of childhood CNS diagnosis when comparing to the general population. The more realistic scenarios (Models 2 & 3) incorporate an increase in excess mortality in the long-term. These scenarios show that whilst there is a continual improvement in the number of patients who survive for 5 years, there are significant long-term impacts for these patients.

Abstract P-53

Place of death for mortality aged under 25 years

Shivaun Fleming[1], Andy Pring[1], Luke Hounsome[1], Julia Verne[1]
[1]*Public Health England*

Background: Few statistics are available about the wishes of people aged under 25 regarding end of life care.
Method: ONS mortality death registrations (2004 to 2013) were analysed according to age bands (Neonatal (under 28 days), Post-neonatal (28 days to under 1 year), 1–4 years, 5–9, 10–14, 15–19, and 20–24 years), place of death, and whether the underlying cause is listed in the Directory of Palliative Care (DPC; v1.4 (Hains, R et al.)). The proportion of hospital deaths in each age group was compared to the national average for England (All ages).
Results: In England, each year between 2004 and 2013, on average 6510 people die aged under 25 years (1.4% of all deaths). 72% died in hospital compared to all ages (54%). Nearly a third of deaths aged under 25 years are neonatal (31%; annual average 2033 deaths), and almost all of these are in hospital (98%). Excluding neonatal deaths, around 60% of deaths under 25 years are in hospital and the proportion of deaths in hospital decreases with age (28 days to 1 year, 86%; 20 to 24 years, 44%). Exclusion of external causes increases this proportion to 79%. Excluding neonatal deaths 60% of deaths are in hospital regardless of whether the underlying cause is listed in the DPC. Excluding external causes in addition increases non DPC deaths in hospital to 69%.
Conclusions: Planning well to configure and improve end of life care services for children and young people is complex and challenging. In the last ten years the proportion of deaths in hospital has fallen by about 10% for those aged 25 and over, but remains higher and relatively unchanged for deaths aged under 25. Further research regarding the wishes of under 25s and their families/carers is required.

Abstract P-54

The development of a lifestyle intervention for teenage and young adult cancer survivors in the UK: protocol

Gemma Pugh[1], Helen Gravestock[2], Rachael Hough[3], Wendy King[3], Jane Wardle[1], Abigail Fisher[1]
[1]*University College London*
[2]*CLIC Sargent*
[3]*University College London Hospitals*

Background: Teenage and Young Adult (TYA) cancer survivors are at an increased risk cancer re-occurrence and chronic health conditions. Thus there is a strong need for this high risk group to adopt a healthy lifestyle in order to reduce the impact cancer diagnosis and treatment has upon growth and development as well as long-term health. Before lifestyle interventions are developed and designed specifically for the TYA cancer survivor population it is important to gain a clearer understanding of TYA cancer survivors' current health behaviours as well as factors relating to intervention delivery.
Methods: A cross-sectional survey will be carried out to gather data on TYA cancer survivors' current health behaviours, well-being, and desire for lifestyle advice. In conjunction a series of focus groups will be carried out with TYA cancer survivors in order to determine the preferred type and format of

lifestyle advice as well as the best time point and mode of delivery of lifestyle intervention to this population. A health professional survey will be carried out simultaneously.
Results: These studies are part of a programme of research that aims to test the impact and feasibility of a lifestyle intervention designed specifically for TYA cancer patients. The findings from these initial studies will guide the development of such an intervention. Understanding the association between TYA cancer survivors health behaviours, well-being, and medical and demographic variables (e.g age at diagnosis/treatment) will guide the development of a more targeted lifestyle intervention for this population.
Conclusion: Collaboration between UCL Department of Epidemiology and Public Health, young person's cancer charity CLIC Sargent and London Cancer will maximise on the impact of the research findings. We believe that the development of a best practice lifestyle intervention specifically for TYA cancer survivors could be widely disseminated leading to an improvement in TYA cancer survivorship.

Abstract P-55

Long-term renal morbidity in survivors of childhood cancer in the British Childhood Cancer Survivor Study (BCCSS) using data from the national Hospital Episode Statistics database.

Kwok Wong[1], Raoul Reulen[1], Chloe Bright[1], David Winter[1], Joyeeta Guha[1], Miranda Fidler[1], Julie Kelly[1], Clare Frobisher[1], Rod Skinner[2], Mike Hawkins[1]
[1]*The University of Birmingham*
[2]*Newcastle University*

Background: Survival after childhood cancer has improved considerably over the last few decades, however, there is uncertainty regarding the risks of being hospitalised due to subsequent renal morbidities.
Methods: The British Childhood Cancer Survivor Study (BCCSS), which includes 34 489 individuals diagnosed with cancer aged under 15 years, between 1940 and 2006, in Britain, and who survived at least 5-year, was linked to the Hospital Episode Statistics (HES) to investigate the risk of being hospitalised due to renal disease between 1997 and 2012. Observed number of first hospitalisations for a renal disease was compared to that expected from the general population to obtain Standardised Hospitalisation Ratios (SHR) and Absolute Excess Risks (AER) per 10 000 person-years.
Results: Overall, 1217 patients were hospitalised for a renal disease corresponding to a 1.4-fold increased risk compared to that expected (SHR = 1.4; 95% CI: 1.3–1.5). Survivors of childhood neuroblastoma (SHR = 2.6; 95% CI: 2.1–3.1) and Wilms' tumour (SHR = 2.2; 95% CI: 1.8–2.6) had the highest excess risk with 28 and 22 extra renal episodes observed per 10 000 person-years, respectively. Survivors of Wilms' tumour experienced an increased risk of all subtypes of renal disease except for urolithiasis: glomerular disease (SHR = 2.6; 95% CI: 1.1–6.2), renal tubulo-interstitial disease (SHR = 2.3; 95% CI: 1.5–3.5), renal failure (SHR = 16.0; 95% CI: 11.7–21.8), kidney diseases (SHR = 3.3; 95% CI: 1.1–10.2) and other urinary tract diseases (SHR = 1.5; 95% CI: 1.2–2.0). Admission for renal failure was highest after Wilms' tumour (16-fold), neuroblastoma (6-fold), bone tumour (5-fold) and soft tissue sarcoma (4-fold).
Conclusion: Survivors of childhood cancer, particularly neuroblastoma and Wilms' tumour, were at increased risk of being hospitalised for a renal event. Survivors of Wilms' tumour experienced an excess risk for almost all subtypes of renal disease possibly reflecting late adverse effects of treatment and, in some cases, the impact of associated conditions.

Abstract P-56

Cerebrovascular disease among 34,489 five-year survivors of childhood cancer diganosed aged 0–14 years using Hospital Episode Statistics: The British Childhood Cancer Survivor Study

Joyeeta Guha[1], Raoul Reulen[1], David Winter[1], Julie Kelly[1], Clare Frobisher[1], Michael Hawkins[1]
[1]*Centre for Childhood Cancer Survivor Studies, University of Birmingham*

Background: Survival from childhood cancer has improved dramatically in recent decades. Previous studies have shown an increased risk of cerebrovascular disease due to cranial irradiation; however the extent to which long-term childhood cancer survivors have been hospitalised for specific cerebrovascular conditions remains largely unknown.
Methods: The population-based British Childhood Cancer Survivor Study (BCCSS) cohort, comprising 34 489 individuals diagnosed with cancer when aged under 15 years, between 1940 and 2006, in Britain and who survived at least 5 years, was linked to the national inpatient Hospital Episode Statistics database. The excess risk of hospitalisation due to a cerebrovascular condition was quantified by comparing the observed (O) numbers of cerebrovascular conditions with the number of expected (E) from the general population. Standardised hospitalisation ratios (SHR) defined as O/E and Absolute Excess Risks (AER) per 10 000 person-years quantified excess risk.
Results: Overall, 303 survivors were hospitalised for a cerebrovascular condition compared to 67 individuals being expected (SHR = 4.5, 95% CI: 4.0–5.0). Survivors of a central nervous system (CNS) tumour (SHR = 10.7, 95% CI: 9.2–12.3) or leukaemia (SHR = 4.9, 95% CI: 3.7–6.4) revealed the greatest excess risk of hospitalisation due to any cerebrovascular condition. Diagnosis of a childhood cancer between 1990 and 1999 (SHR = 10.2, 95% CI: 7.8–13.2) or between 2000 and 2006 (SHR = 11.8, 95% CI:7.0–20.0) yielded an excess risk of hospitalisation due to any cerebrovascular condition. Of the specific cerebrovascular conditions, the most frequent hospitalisations among survivors were for haemorrhagic stroke (SHR = 4.3, 95% CI: 3.6–5.2) and ischaemic stroke (SHR = 4.2, 95% CI: 3.5–5.2).
Conclusion: Hospitalisations due to a cerebrovascular condition is greatest in survivors who were initially diagnosed with a CNS tumour or leukaemia. A risk-stratified approach to clinical follow-up, would ensure survivors at highest risk of cerebrovascular complications undergo surveillance.

Abstract P-57

Cause-specific mortality in 23,477 5-year survivors of central nervous system tumours diagnosed under age 40

Chloe Bright[1], Raoul Reulen[1], Martin McCabe[2], David Winter[1], Mike Hawkins[1]
[1]*Centre for Childhood Cancer Survivor Studies, University of Birmingham*
[2]*School of Cancer and Enabling Sciences, University of Manchester*

Background: This largest ever study of teenage and young adult (TYA) cancer survivors is the first to address the gap in knowledge regarding the risk of long-term cause-specific mortality in survivors of specific central nervous system (CNS) tumour types.
Methods: This cohort consists of 23 477 5-year survivors of CNS tumours diagnosed before the age of 40, between 1971–2006 in Britain. Standardised Mortality Ratios (SMRs) and Absolute Excess Risks (AERs) were used to investigate cause-specific mortality for each CNS tumour type stratified by age and years from diagnosis.
Results: Survivors of meningioma, glial, embryonal and pituitary tumours were at 3, 20, 22 and 3-times increased risk of death. The excess number of neoplastic deaths per 10 000 person-years increased with increasing age at diagnosis from 61 to 562 for those aged 0–14 and 25–39 years at diagnosis of a glial tumour, respectively. In contrast after pituitary tumours the AER declined from 65 to 11 for those diagnosed at similar ages, respectively. The SMR for respiratory deaths after pituitary tumours declined from 56 to 3 for those diagnosed aged 0–14 and 25–39 years, respectively. Among those diagnosed aged 15–39 years the excess of neoplastic deaths increased with later decade of diagnosis of glial tumours. For those followed-up 5–14 years from diagnosis the SMR was 95, 125 and 179 among those diagnosed in the 1970s, 1980s and after 1990, respectively. The excess non-neoplastic deaths declined with later decade of diagnosis after pituitary tumours. For those followed-up 15–24 years from diagnosis the AER was 50, 30 and 7 per 10 000 person-years for those diagnosed in the 1970s, 1980s and after 1990, respectively.
Conclusions: Risks of specific causes of death varied with CNS tumour type and were dependent on decade and age at diagnosis. Variation by treatment decade gives clues to potential treatment effects which may be explored in case-control studies.

Abstract P-58

Improving data quality: children, teenagers and young adults data in the Systemic Anti-Cancer Therapies (SACT) dataset

Michael Wallington[1], Ralphael Oghagbon[1], Wayne Brown[1], Kellie Peters[1]
[1]*Public Health England*

Background: The Systemic Anti-Cancer Therapies (SACT) dataset has been developed as a repository for data on the cancer chemotherapy delivered by English NHS hospitals. Adult data held within SACT has, with coordinated efforts, made significant progress in improving the level of data completeness and data quality. However, headway on SACT data for children, teenagers and young adults has not been made to the same extent, impacting confidence in data quality.
Methods: Data provided by English NHS hospital trusts for children, teenagers and young adults receiving chemotherapy were analysed using data completeness reports. The performance of hospital trusts was compared to national averages. Data reporting practices were observed and evaluated.
Results: An analysis of the SACT data completeness reports indicates significant variations in data reporting practice and data field completion.
Conclusions: Improvements in data quality and increased data completeness within SACT will allow for more robust analysis of the chemotherapy provision for children, teenagers and young adults with cancer. The quality of the SACT dataset is maturing but until improvements are made in the compliance of data recording, the validity of outputs will have its limitations.

Abstract P-59

Population-based long-term cardiac mortality among 34,489 5-year survivors of childhood cancer

Miranda Fidler[1], Raoul Reulen[1], David Cutter[2], Julie Kelly[1], Clare Frobisher[1], David Winter[1], Michael Hawkins[1]
[1]*Centre for Childhood Cancer Survivor Studies, University of Birmingham*
[2]*University of Oxford & Oxford Cancer and Haematology Centre*

Introduction: Exposure to thoracic radiotherapy or anthracycline chemotherapy is known to increase the risk of cardiovascular disease among survivors of childhood cancer. In this study we investigated the risk of long-term cardiac mortality among 5-year survivors within the recently extended British Childhood Cancer Survivor Study (BCCSS).
Methods: The BCCSS is a population-based cohort of 34 489 5-year survivors of childhood cancer diagnosed before age 15 between 1940–2006, and is the largest cohort to assess late mortality to date. Standardized mortality ratios (SMRs) and absolute excess risks (AERs) were used.
Results: Overall, 182 cardiac deaths were observed, which was 3.4-times the number expected. When assessed by cardiac subgroups, survivors were 2.5- and 5.9-times more at risk of death from ischemic heart disease (IHD) and cardiomyopathy/heart failure (CM/HF) than expected, respectively. Although the SMR declined with increasing attained age, 24 excess cardiac deaths per 10 000 person-years were observed beyond age 60. Survivors of acute myeloid leukemia (SMR:23.3) had the greatest SMR, followed by survivors of Wilms (SMR:6.4) and Hodgkin lymphoma (SMR:5.6). When assessed by treatment decade, evidence of a quadratic relationship was identified ($P = 0.0249$) where the SMR was higher among those treated in the 1980's than those treated in decades before or since. Comparing those diagnosed in 1980–1989 with those diagnosed in 1990–2006, the overall cardiac SMR declined from 9.0 to 5.2, respectively; this reduction was largely due to the SMR significantly decreasing ($P = 0.0003$) for CM/HF deaths from 1980–1989 (SMR:16.9) to 1990–2006 (SMR:3.9), after adjusting for age at diagnosis, attained age, first primary neoplasm type, and sex.
Conclusions: Among 5-year survivors of childhood cancer treated in Britain, the excess mortality from cardiac disease was significantly increased beyond age 60. However, the fact that the highest SMR was observed in those diagnosed from 1980–1989 is reassuring and suggests that initiatives to reduce cardiac toxicity among those treated more recently may be having a measurable impact.

Abstract P-60

Population-based long-term cause-specific mortality among 34,489 5-year survivors of childhood cancer

Miranda Fidler[1], Raoul Reulen[1], Julie Kelly[1], Clare Frobisher[1], David Winter[1], Michael Hawkins[1]
[1]*Centre for Childhood Cancer Survivor Studies, University of Birmingham*

Introduction: The recent extension of the British Childhood Cancer Survivor Study (BCCSS) to include 5-year survivors diagnosed between 1940 and 2006 provides an opportunity to investigate risk of death in relation to era of treatment, and, in particular, to address whether more modern treatments are associated with net increased or decreased risk of death from neoplastic and non-neoplastic causes.
Methods: The BCCSS is a population-based cohort of 34 489 5-year survivors of childhood cancer diagnosed between 1940–2006 before the age of 15 in Britain, and to date is the largest cohort to assess late mortality. Standardized mortality ratios (SMRs) and absolute excess risks (AERs) were investigated for all deaths.
Results: Overall, 4483 deaths were observed, which was 9.1-times the number expected. The SMR declined significantly with increasing attained age, but significant excess mortality remained even after age 65 [AER: 139.4; 95%CI: 41.2–237.6]. All types of childhood cancer, except non-heritable retinoblastoma, were associated with increased mortality relative to that expected, with the greatest SMRs observed among CNS and leukemia survivors. With respect to cause-specific deaths, survivors were 27.0- and 2.9-times more at risk of neoplastic and non-neoplastic death than expected, respectively. As attained age increased, the AERs significantly decreased for neoplastic causes and significantly increased for non-neoplastic causes (both $P\text{trend} < 0.0001$). Both neoplastic and non-neoplastic AERs significantly decreased with more recent treatment decades (both $P\text{trend} < 0.0001$); specifically, the neoplastic and non-neoplastic AERs in those treated from 1990–2006 were less than a third and half of that observed in those treated before 1970 after multivariate adjustment, respectively.
Conclusions: Among 5-year British survivors of childhood cancer, there is evidence that the net effect of more modern treatments is to reduce the excess numbers of both neoplastic and non-neoplastic deaths observed among 5-year survivors.

CLINICAL TRIALS/BIOBANKS

Abstract P-61

Integration of digital pathology in biobanking quality assurance and biomarker analysis

Anne Carson[1], Jacqueline James[1], Stephen McQuaid[1], Peter Bankhead[1], Darragh McArt[1], Manuel Salto-Tellez[1], Peter Hamilton[1]
[1]*Queen's University Belfast*

Access to high quality human tissue samples through biobanks enhance the standard of translational biomedical research, supporting biomarker discovery in cancer prognosis and treatment. The Northern Ireland Biobank (NIB) is a joint collaboration between Queens University Belfast (QUB) and the Belfast Health and Social Care Trust, prospectively collecting high quality tissue and blood samples from consented patients across a range of defined solid cancer types and establishing large cohorts of annotated retrospective FFPE cancer samples and tissue microarrays (TMA). Digital pathology is important in biobanking, providing means to store, share and analyse tissue samples derived from solid tumours. QUB has embedded digital pathology within the NIB and NI-MPL. All tissue sections derived from FFPE samples collected are routinely scanned within NIB. The NIB information management system creates a record of patient consent, sample processing, tracking, storing and distribution, with a digital slide record of originally assessed tissue morphology and baseline IHC biomarkers. Potentially this could allow researchers to view samples online with corresponding clinical and pathological data from anywhere in the world. The construction of NIB cancer specific (TMAs) allows NIB samples to be scored on-line allowing use of biomarker data to further annotate the samples. Digital pathology integration allows on-line viewing of TMA samples linked with clinical and pathology data within a TMA study, facilitating biomarker analysis and validation. Automated TMA scoring software provides rapid high throughput biomarker analysis currently at the frontline of integrating Digital Pathology with Biobanking. NIB is developing a pipeline for automated analysis of baseline biomarkers across all samples. This should further enrich the Biobank sample collection allowing researchers to select samples with defined IHC biomarker profiles. Digital pathology has the potential to play a major role in biobanking of solid tumours. NIB has established a framework to integrate digital pathology with Biobank processes, the goal to support cancer research locally, nationally and internationally.

Abstract P-62

Audit of trial recruitment in Non-Hodgkins and Hodgkin lymphoma –Single centre analysis

Isabella Lo[1], Alison Milne[1]
[1]*Basingstoke North Hampshire Hospital*

Haematological malignancies accounted for 8.4% of all malignant disease diagnosed in England between 2001 and 2010, of which 46% are Hodgkin and Non-Hodgkin lymphoma. Despite advances in clinical practice, organisation of care and new treatments the 5 year survival is 68%. There is significant potential for improvement in both care and treatments. Developing and using new therapeutics is a key element to improving outcome. Nationally the cancer recruitment target is 20% of cancer incident cases and 7.5% to interventional studies. Actual recruitment is less than this and there is significant variation between networks and centres. Identifying the issues preventing patient participation is important in increasing trial entry. We therefore conducted an audit in North Hampshire Hospital of 95 newly diagnosed lymphoma patients between 2013 and 2014. There is a dedicated lymphoma service and team locally committed to clinical research. 13% of patients were entered into clinical trial at diagnosis. We examined in details the reasons for non-trial entry. Of those not recruited 29% were excluded by the trial entry criteria, due to a combination of co-morbidities, previous malignancy and pre-treatment with steroids. In 50% there was no trial available at our site for that stage or sub-type. In 5% patients refused despite of suitability. 9% were referred to Regional Cancer Centre where trial was available. There are many different reasons limiting patient trial entry. Optimal trial entry requires a number of organisational factors to be in

place which include trial support for clinical staff; a Research and Development team at network and local level. In addition collaboration and cooperation between Centres with a wider trial portfolio is also important. As trials predictably close then succession planning for opening new trials is vital despite the challenge of trial setup and the plethora of newer chemotherapy and biologics.

Abstract P-63

The Northern Ireland Biobank: Biomedical Scientist Role

Christine Sterrett[1], Edwina O'Doherty[1], Stephen McQuaid[1], Jacqueline James[1]
[1]*Northern Ireland Biobank, Molecular Pathology Programme, CCRCB, Queen's University*

Access to high quality human biospecimens is a pre-requisite for discovery and development of novel approaches to cancer prediction, treatment and response. Biobanking has subsequently emerged as a mechanism for the standardised collection of quality assured samples for use in basic and clinical research studies. The Northern Ireland Biobank (NIB) was established as a joint initiative between Queen's University Belfast (QUB) and Belfast Health and Social Care Trust (BHSCT) to support local cancer research through the prospective collection of tumour and non-tumour control tissues and match blood samples, from consented patients undergoing cancer treatment. The pivotal role of NIB Biomedical Scientists (BMS) is to provide the operational link from NHS Tissue Pathology to NIB and includes the collection, processing, analysis and storage of tumour and non-tumour control tissues from consented patients with a confirmed or suspected diagnosis of cancer. Data management, audit and quality control of samples are vital processes performed by the BMS and are essential to ensure an efficient high quality Biobank. The importance of collecting high quality biospecimens linked to patient demographics and relevant clinical and pathological data is essential for a diverse range of research applications. To ensure the NIB samples are of high quality a number of diverse quality audits have been performed by NIB Biomedical Scientists, covering collection (cold ischaemic time, %tumour in fresh frozen), processing (H&E quality) and pre-analytical protocols (DNA and RNA extraction quantity and quality). The NIB is the first of its kind in Northern Ireland, offering a unique collection of high quality tissues and associated biosamples to underpin local cancer research. Such a collection is vital to deliver on the promise of stratified medicine for cancer patients in Northern Ireland. Without the vital contribution provided by BMS staff the efficient operation of NIB and high quality performance would be compromised.

Abstract P-64

DNA and RNA quality control experiments of biobanked FFPE and fresh frozen tissue

Edwina O'Doherty[1], Christine Sterrett[1], Stephen McQuaid[1], Jacqueline James[1]
[1]*Northern Ireland Biobank, Molecular Pathology Programme, CCRCB, Queen's University*

Background: The importance of standardized and robust collection and pre-analytical processes to obtain high quality biospecimens is essential for downstream research analyses such as next generation sequencing. To ensure the Northern Ireland Biobank (NIB) samples are of high quality a number of diverse quality audits are being performed by NIB Biomedical Scientists, including DNA and RNA quantity and quality analysis of banked FFPE and fresh frozen tissue.
Method: DNA was extracted from matching FFPE and fresh frozen (breast, colorectal, prostate and ovarian samples) tissue using a Maxwell kit on the automated Maxwell extractor. DNA quantity was determined using nanodrop and quality determined using a Biomed-2 QC gel analysis. RNA was extracted from FFPE tissue manually using Qiagen Rneasy FFPE Kit. RNA quantity was determined using nanodrop and quality determined using RNA Integrity Number (RIN) analysis.
Results: A high concentration of good quality DNA as determined by gel analysis was obtained from fresh frozen colorectal samples. Good quantity and quality of DNA was also obtained from FFPE samples albeit lower than from fresh frozen tissue samples. RNA extraction was performed on FFPE samples only and this yielded high quantities of good quality RNA with sufficient RIN values for downstream applications.
Conclusions: These quality control experiments confirm that high quality samples are being biobanked in NIB as part of all collection protocols. Such audits are essential to demonstrate that on-going collection processes are robust and constantly yield stored samples that are suitable for downstream analysis and complex molecular investigations.

Abstract P-65

Northern Ireland Biobank (NIB) – a nursing perspective

Paul Murray[1], Adrina O'Donnell[1]
[1]*Queen's University Belfast, Belfast Health and Social Care Trust*

The pursuit of precision medicine with a personalised approach to treatment remains core to the landscape of cancer care. High quality biosamples are necessary for the discovery of novel biomarkers to aid cancer diagnosis and treatment choices. 'Biobanks' provide a robust and regulated infrastructure to ensure standardised collection of quality-assured samples for use in biomarker-driven translational research programmes. The Northern Ireland Biobank (NIB) has been established as a joint initiative between the Belfast Health and Social Care Trust and Queen's University, Belfast (QUB) to support cancer research locally, nationally and internationally. The NIB works closely with the Northern Ireland Molecular Pathology Laboratory in the QUB's Centre for Cancer Research and Cell Biology (CCRCB). The clinical research nursing team are central to the effective, efficient operation and delivery of the prospective Biobank collections as part of a multidisciplinary team approach from the wider NIB operation. The Clinical Research Nurses (CRNs) are the 'face' of the NIB to the patient population and to the staff in the BHSCT; they explain the background for the NIB's existence and invite patient participation. Current collection protocols to which patients are invited to participate includes: Colorectal, Breast / High Risk Breast, Gynaecological, Non-Neoplastic Gynaecological, Genitourinary / Prostate, and Haematology. However there is also a growing portfolio of project-specific research studies with bespoke tissue collection requirements. From November 2011 to January 2015, the NIB has consented a total of 1283 patients. The collections include fresh frozen

samples, formalin-fixed paraffin-embedded tissue blocks (both inclusive of tumour and non-tumour controls) and blood samples.

Abstract P-66

A population level study of clinical trial participation among cancer patients in Northern Ireland

Conan Donnelly[1], Amy Wotherspoon[2], Melanie Morris[3], Richard Wilson[4], Anna Gavin[1]
[1]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[2]*Centre for Public Health, Queen's University Belfast*
[3]*Belfast Health & Social Care Trust*
[4]*Centre for Cancer Research and Cell Biology, Queen's University Belfast*

Background: Clinical trials provide information to improve care, however, evidence suggests recruitment is low and they are not truly representative of the population they seek treat. This population level study aims to investigate factors associated with trial participation since the establishment of a regional Cancer Trials Network in 2008.
Method: This study applies linkage between population based cancer registration data and an independent database of all hospital cancer trial participants in a UK region to investigate and explain variation in trial participation and factors associated with lower likelihood of trial participation.
Results: Clinical trial participation in the cohort was low but there has been a significant annual increase in recruitment since the establishment of the network. Lower likelihood of trial participation in adults was associated with older age, distance from the regional Cancer Centre, deprivation and early stage disease. Variation by deprivation quintile was mainly explained by the distribution of trials by disease site. Trial availability remains a significant factor in explaining increasing trial participation rates.
Conclusion: This study highlights specific areas to target for increasing participation. Linkage of trial data and cancer registries should be undertaken in future to further monitor trial participation in other populations and to help promote and achieve more representative recruitment.

DATA PROCESSING AND MANAGEMENT

Abstract P-67

Does weekly monitoring lead to improved performance?

Daniel Hawksworth[1]
[1]*Scottish Government*

In January 2014, the proportion of patients receiving cancer treatment within 62 days of referral in Scotland was at its lowest level for years, at 90.6%. At this time, it was decided that the particularly challenged Health Boards should provide weekly information on their cancer waiting times performance to the Scottish Government. These monitoring reports include information on the numbers of new urgent referrals within the previous week, the numbers of patients treated (both within the relevant standard and the number of breaches) for each reported cancer type, and a written summary for each breached patient, explaining the reasons for the delay. The reports, formatted using a Scottish Government supplied standardised template, enable the monitored Health Board and Scottish Government to identify areas of poor performance, so that targeted advice and assistance can be offered. Since September 2014, these weekly reports have been collated into a single spreadsheet – this allows for easy analysis of the time series for each monitored board, and is a useful evidence resource for internal meetings. The cancer waiting time performance has improved markedly for each of the monitored boards – in light of this improvement, two of the original seven monitored boards are no longer required to submit these weekly reports. Nationally, the 62-day cancer waiting time performance has also rallied, the latest published data (for July to September 2014) show that 93.5% of patients were treated within the 62-day standard. To conclude, it is suggested that the concept of board-level cancer waiting time weekly monitoring be considered for use in challenged boards out-with Scotland, as it offers both the Government and health boards an insight into areas of under-performance and allows for focussed discussion and intervention.

Abstract P-68

A cancer health intelligence hub for Wales – positive outcomes from data linkage

Janet Warlow[1], Ceri White[1], Dyfed Huws[1]
[1]*Public Health Wales, Welsh Cancer Intelligence and Surveillance Unit*

Background: Together for Health – Cancer Delivery Plan is Welsh government's vision for tackling cancer. It recognises that quality information is critical to improve cancer services and prevention. It required the creation of a cancer data warehouse for Wales.
Method: We engaged stakeholders to examine and conceptualise the potential uses, form and processes of a cancer data warehouse with a redeveloped cancer registry at its core. We identified new data collection requirements, existing datasets and existing linked warehouses that could form part of a future cancer data warehouse. We examined their potential usefulness, quality and feasibility of access.
Results: We developed a conceptual model of a cancer data warehouse with an enhanced cancer registry. We identified existing datasets and data warehouses that could be accessed and linked with an enhanced cancer registry. We prioritised the Secure Anonymised Information Linkage Databank and the NHS Wales Informatics Services' emerging health data warehouse, and routine access and linkage to GP data, hospital admissions, A&E, oncology treatment data, as an example. We are completely reviewing the processes, data sources and content of our core cancer registry, as well as seeking to improve some source datasets.
Conclusions: We found numerous existing datasets and data warehouses that could be accessed and linked with an enhanced cancer registry. GP data linkage is a priority. New and improved data sources and processes will be vital to redevelop the cancer registry. Collaboration, joint processes and agreements across organisations, along with robust information governance appear more important than building a new cancer data warehouse from scratch. This model together with adequate analytical and statistical resource will allow a more rapid and efficient delivery of a cancer health intelligence hub for Wales.

Abstract P-69

Systemic Anti Cancer Therapy (SACT) dataset improvement and analysis in an integrated cancer system

Stephen Scott[1], Hilary Wilderspin[1], Nisha Shaunak[1], Jamie Ferguson[1]
[1]*London Cancer Alliance*

Background: The London Cancer Alliance was established in 2012 as a provider network of 15 cancer providers in south and northwest London covering a resident population of 5.7 million. The structure of the LCA is based on 13 tumour groups. The Systemic Anti-Cancer Therapy (SACT) dataset has become increasingly prominent nationally during 2014/15.
Methods: A particular focus has been improving quality of submission to the Systemic Anti-Cancer Therapy (SACT) dataset. In support of this work, the LCA metrics have provided regular feedback on data completeness. The informatics team set up an LCA Users Group to bring together LCA providers of SACT data to share approaches and concerns and to discuss data quality and comparative analysis. This has regularly included representation from the Chemotherapy Intelligence Unit to create a link with the national team. As the LCA has access to data for all LCA providers, comparative analyses have been provided to pathway groups in areas such as, 30, 60 and 90 day mortality, regimen type and number of cycles prescribed by provider.
Results: The quality of key data items and the volume of records submitted has improved significantly. LCA providers submitted approximately 12 000 regimens in Q2 2014/15 compared with approximately 2000 per quarter in 2012/13. Data completeness of Treatment Intent and Performance Status data fields is at 70% and 62% in the most recent data from Q2 2014/15 from a baseline of 51% and 37% in Q4 2013/14.
Conclusions: LCA wide comparisons have identified, shared learning and differences in recording practices between Trusts. Some of the variation seen in the data is due to these differences in recording practices rather than pathway or service variation. As data quality improves there will be further investigation of mortality rates at tumour and provider level, in addition to comparison of regimen prescribing.

Abstract P-70

Building institutional capacity for increasing cancer data quality within Northwestern Regional Cancer Registry from Romania

Luminita Blaga[1,2], Alexandru Todescu[1,2], Jan Nygård[3], Daniela Coza[1,2], Florian Nicula[1], Anton Bereschi[1,2], Elisabete Weiderpass[3,4,5,6], Adela Moldovan[1,2], Ciprian Turcu[1,2], Patriciu Achimas-Cadariu[1,7]
[1]*The Oncology Institute "Prof. Dr. Ion Chiricuta"*
[2]*Cluj Regional Cancer Registry*
[3]*Cancer Registry of Norway*
[4]*Department of Medical Epidemiology and Biostatistics, Karolinska Institutet*
[5]*Faculty of Health Sciences, The Arctic University of Norway*
[6]*Folkalsan Research Center*
[7]*Iuliu Hatieganu University of Medicine and Pharmacy*

Background: Northwestern Regional Cancer Registry, covering six Romanian counties, accounting for 14% of country's surface and 12.7% of population, hosted by the Oncology Institute from Cluj-Napoca, started in 2014, within EEA Grants framework, the collaboration with Cancer Registry of Norway (CRN), aiming to ensure access to data of higher quality at regional level.
Method: CRN network was taken as model in designing the Northwestern Cancer Control Portal (NWCCP). Through Counties Public Health Directorates' support, we conducted a survey among potential cancer registry stakeholders (72 health units), using an in-house questionnaire. Based on survey's analysis we developed a streamlined data collection and communication system to meet an eclectic multi-source information system.
Results: The project will help cancer care institutions to save time and human resources. By using the NWCCP, time consuming activities, such as reading free texts reports and performing classification or information extraction, will be reduced. Our web-based application is designed to integrate easily in the daily activities of various staff involved in cancer care. It is also designed to improve consistency and accuracy of case abstraction and to enhance the standard dataset with high resolution site specific data. Confidentiality, protection and security of data are addressed according to official rules. We target an improvement in completeness and timeliness of regional cancer data and figures, increased consistency including precision and reliability of data and completeness of follow-up information.
Conclusions: The project provides a unique opportunity to evaluate the performance of such a program in the regional public health system, which can subsequently be expanded to cover specific population groups (ethnic, disadvantaged, etc), or patient selection for clinical trials. This is expected to lead to a more complete data management system for cancer outcomes reporting with higher accuracy and certainty, also creating premises and acquired experience for improvement at national level.

Abstract P-71

Using metrics to improve breast cancer services in London

Stephen Scott[1], Karen Linklater[2]
[1]*London Cancer Alliance*
[2]*National Cancer Registration Service*

Introduction: London Cancer Alliance and London Cancer, the two Integrated Cancer Systems in London, want to be able look at a variety of generic and site specific metrics within their constituent Trusts in as real time as possible. This allows them to inform commissioning, the provision of cancer services and to demonstrate compliance to clinical guidelines and thus to improve outcomes for breast cancer patients.
Methods: The main source of data for the breast cancer metrics is the Patient Administration System (PAS) data sent to the National Cancer Registration Service (NCRS). These data are eventually matched to the existing NCRS database to link any existing cases before any new cases are added. We extracted all episodes with a mention of breast cancer from PAS data for the Trusts within London for the period 2013. For certain metrics, where a definite date of diagnosis was needed, the cases which had been fully entered on to the English National Cancer Online Registration Environment (ENCORE) were used.
Results: At the beginning of November the total number of episodes for breast cancer patients seen within a London Trust in 2013 was 98 625 which constituted 14 665 patients with a diagnosis date in 2013. This data has allowed population of 13 separate data items including day case rates, immediate breast reconstruction rates and proportion of patients having their HER2 and ER status recorded.
Conclusions: These metrics are a useful tool for both the London Cancer Alliance and London Cancer. Discussions with Pathway Boards and clinicians will better inform the metrics and allow for their clinical interpretation and will lead to improved cancer services and outcomes.

Abstract P-72

Improving the ascertainment and coding of Chronic Myeloid Leukaemia (CML) in England

CE Brook[1], J Churchill[1], SE Oliver[2], R Ireland[3]
[1]*National Cancer Registration Service, Public Health England*
[2]*Department of Health Sciences University of York and Hull York Medical School*
[3]*Department of Haematology, King's College Hospital NHS Foundation Trust*

Background: Approximately 550 CML cases are registered annually across England. Historically these have been difficult to capture and code accurately; coding systems did not support the required levels of specificity. More recently these cases have been identified using ICD-10 code C92.1. A publication by NCIN (Trends in incidence and outcome for haematological cancers in England: 2001–2010; 2014) reported significantly poorer CML survival rates in the 65 + than the <65 age group and not consistent with clinical observation. This identified the need to review processes of ascertainment and coding.
Methods: All 2013 registered CML cases were identified by morphology codes M99863 (CML NOS), M98753 (CML, BCR/ABL +ve) or by ICD 10 C92.1. This identified 523 cases from NCRS Encore, England. An initial subset review of cases was undertaken by NCRS NY to identify the coding associated with data coming into the NCRS and establish accuracy of confirmed CML cases.
Results: 34 cases were manually reviewed with all incoming data. These were primarily in the youngest and oldest age groups. 10 out of 30 which were coded as CML NOS (M99863) on Encore had some evidence of the more specific code (M98753) within the incoming data feeds, however 20 had no further specific code provided.
Conclusions: This review confirms the need to comprehensively examine notification sources and the specificity of incoming data for CML from haemato-pathology feeds and COSD (Cancer Outcomes Data Set) returns. BCR/ABL +ve CML is defined by a pathognomonic chromosomal abnormality. NCIN reported outcomes for CML in the >65 year age group are not consistent with clinical and trials data but have been quoted in a comparative study without caveat (Pulte D et al. Eur J Haematol. 2014 Oct). We recommend that a specialist group examines 2014 registrations to provide a foundation for improving registration of all haematological malignancies.

Abstract P-73

Building a pseudonymised, linked, cross-setting dataset covering Breast and Lung Cancer pathways in Manchester

David Chapman[1], George Ulmann[1], Mike Standing[1], Julie Flynn[2], Nicola Cook[2], Ashley Woolmore[3]
[1]*Monitor Deloitte*
[2]*Macmillan Cancer Support*
[3]*IMS Health*

Background: In 2009, Macmillan Cancer Support worked with Monitor Group and several City of Manchester partners to develop an understanding of the baseline of service use across the secondary care breast and lung cancer pathways. This identified a need to better understand the needs of people living with and beyond cancer. This programme of work, which brings together data on survival, morbidities and demographics, became known as 'Routes from Diagnosis' (RfD) [1]. In 2014 this methodology was replicated and extended to provide evidence at a population level to inform redesign programmes of work across Greater Manchester, including the Macmillan Cancer Improvement Partnership (MCIP) across the City of Manchester.
Methods: This project brought together a cross-sector team of c.50 individuals across Macmillan, NHS and third-sector healthcare providers, commissioners, PHE and the private sector to create a patient-level, pseudonymised, cross-care setting database by linking local providers' data. This dataset covers all breast and lung cancer patients resident in the City for cohort years 2002, 2004, 2006 and 2009, and captures pre- and post-diagnosis interactions with primary, secondary and palliative care providers.
Results and Conclusions: Our experience on this programme has highlighted the ongoing challenges faced by researchers in this field; these have been documented elsewhere [2]. However, it has demonstrated that even in what have been very challenging times for the healthcare community, it is possible for local stakeholders to partner to share and analyse data to improve patient outcomes. Outputs from the analysis have

the potential to identify areas for service redesign to improve outcomes and the delivery of cancer services in the City of Manchester, supplementing other workstreams that Macmillan is pursuing locally. [1] Routes from Diagnosis (Macmillan Cancer Support, 2014) [2] Mapping cancer patients' routes from diagnosis in Manchester (Macmillan Cancer Support & Greater Manchester Academic Health Science Network, 2015)

Abstract P-74

The National Cancer Research Institute Clinical Studies Group portfolio triaging analysis: A tool to monitor funding and recruitment activity within the NCRI CSG portfolio

Seema Alexander[1], Michelle Cashin-Cox[1], Eileen Loucaides[1], Rachel Moser[2], Matthew Seymour[1,2]
[1]*National Cancer Research Institute*
[2]*National Institute for Health Research (NIHR) Clinical Research Network: Cancer*

Background: The NCRI CSG portfolio triaging system categorises open studies in the UK Clinical Research Network (CRN) portfolio according to type of research funding and extent of NCRI CSG involvement during development, and examines participant recruitment to each category.
Methods: Cancer studies open on the NIHR CRN portfolio in February 2014 were assigned the following categories based on consensus by CSG Chairs, Chief Investigators and trial managers: •CSG involvement: 'Developed'; 'Consulted', 'Other' •Funding: 'Academic'; 'Partnership' ('Academically sponsored with industry support'), 'Industry' Preliminary UK study recruitment data for the year ending 31 March 2014, was provided by NIHR CRN: Cancer in March 2014, combined with the categorisation data and patterns of recruitment examined across the various categories.
Results: 542 studies were categorised, 58% (312) of studies had CSG involvement (CSG-developed or consulted); these studies accounted for 72% of recruitment to all 542 studies. 353/542 studies were interventional; 62% had CSG involvement and accounted for 85% of the total recruitment to all intervention studies. Analysis of all studies by funding demonstrated 52% (281) were academically funded, 25% (136) by industry and 23% (125) were partnership funded. Analysis of interventional trials showed, 40% (140) were academically funded, 30% (107) were industry funded and 30% (106) were partnership.
Conclusions: The NCRI CSGs had input into a majority of open studies on the NIHR CRN: Cancer portfolio in February 2014. The CSGs made significant contributions to interventional trials, notably those with an academic sponsor; interventional studies which had some element of CSG involvement accounted for 85% of total recruitment to interventional studies in 2013–2014 by March 2014. Almost half of the CSG-involved trials have academic funding and half funded by industry or partnership. Future work will categorise remaining studies, recruiting in 2013–2014 and repeat this analysis using the definitive 2013–2014 recruitment data cut.

Abstract P-75

The Mapping of datasets in the Cancer Analysis System (CAS)

Christopher Lawrence[1], John Broggio[1], Matthew Francis[1]
[1]*Public Health England Knowledge and Intelligence Team West Midlands*

Background: Now that CAS is the primary national source of cancer data, it is essential for cancer analysts to find their way around its structure in order to link two or more tables, either directly or using intermediary tables, via common fields. The aim of this project was to provide cancer analysts with a tool for determining the best route for linking tables, which could be readily updated to accommodate for changes to the structure.
Methods: Details of every occurrence of every field available in CAS datasets were logged in a table along with its unique address in the format USER.TABLE.FIELD Addresses for fields occurring twice or more in CAS were collated within the dataset.
Results: The dataset was published as an interactive html document which provided the user with the chance to view all details of a particular field and therefore determine the best route for linking tables. The html page presents information such as the tables containing a particular field, and whether the field is indexed or a primary key. The html page can also be updated to incorporate the data items in new datasets as they become available.
Conclusion: The universal feedback from this tool has been that it complements the supporting documentation from the NCRS and better allows analysts to construct complex queries with greater ease.

Abstract P-76

A comprehensive database system with high resolution pathology data for breast cancer screening – a pilot study

Bogdan Fetica[1], Carmen Lisencu[1], Alexandru Eniu[1], Daniela Coza[1], Luminita Blaga[1], Bogdan Pop[1,2], Florian Nicula[1], Patriciu Achimas-Cadariu[1,2], Alexandru Irimie[1,2]
[1]*The Oncology Institute "Prof. Dr. Ion Chiricuta"*
[2]*Iuliu Hatieganu University of Medicine and Pharmacy*

Background: Breast cancer is the first leading cause of cancer death in women in Romania with an age-adjusted (world) mortality rate of 15.2 (GLOBOCAN 2012). The country completely lacked organized cancer screening programs until recently. An exception is attempted by the national cervical cancer screening program recently initiated (2012) and a breast cancer screening pilot study in Northwestern region of Romania that started in 2014 at the Oncology Institute from Cluj-Napoca, within Norway Grants framework, in collaboration with the Cancer Registry of Norway. The correct pathological classification plays a central role in order to avoid misdiagnosis, overdiagnosis and overtreatment.
Method: We designed a database management system and a high resolution pathology dataset to ensure an optimum communication between clinician, radiologist and pathologist.
Results: The first challenge was the lack of standardization and consistency in breast biopsy result-reporting. We designed the pathology report and the subsequent high resolution dataset to integrate traditional pathological data with diagnostic molecular information to provide a quantification of the risk

associated with a particular breast lesion and the ability to distinguish indolent from aggressive disease. A special attention was given to ductal carcinoma in-situ cases, a potential pitfall for a successful screening program, as well as atypia terminology and cancer progression. We developed a breast pathology lexicon and implemented a multi-level relational database structure, integrating also digital mammography and ultrasound results.
Conclusions: Notably, a well-functioning cancer information system (screening information system but also cancer registration) is vital to investigate and evaluate the efficacy of screening interventions for cancer. Therefore, our goal is to integrate cancer screening databases with the Northwestern Cancer Registry targeting a comprehensive database management system for cancer prevention, early diagnosis and outcomes reporting and control.

Abstract P-77

Transformation of oncology nursing documentation

Ben Wilson[1], Olivia Samuel[1], Katie Johns[1], Jo Jackson[1], Dan Tibble[1], Jac Livsey[1]
[1]*The Christie NHS Foundation Trust*

Background: Clinical documentation is routinely underutilised. The format in which it has traditionally been captured does not facilitate re-use of the data. We wanted to use the information to help decision making in real time and have it available for monitoring, research and analysis. We recognised that many assessment algorithms lent themselves to electronic data capture and that modern electronic dashboards could deliver an interactive care planning tool. The challenge was to put these technologies together, tailor them to oncology nursing care and make them intuitive enough to work routinely in the ward environment. Our aim was to provide real-time decision support while keeping the focus of attention on patient-centered care and get high quality data from every shift.
Method: We implemented a comprehensive change away from paper recording for all wards at The Christie Hospital so that >90% of nursing documentation was covered by 72 new electronic assessments with care plans. For each one, the previous documentation was reviewed, updated and transformed for electronic delivery. Form design was clinically-led with ward staff engaged fully in user acceptance testing. Staff training took place over two weeks. By go-live 80% were trained. Implementation took place on one day in Dec 2014.
Results: We are beginning to collect user feedback data but widespread acceptance has meant excellent completeness and quality from go-live. The system captured >160000 submissions on 1500 patients in less than two months. The median time to complete a form was 37 s. Preliminary results indicate collection of data for CQUINs reporting has become more timely and the system is poised to provide continuous audit of care data. Secondary benefits include improved precision and timeliness on recording admission and discharge times.
Conclusion: With a high level of user-engagement and clinical expertise it is possible to transform clinical data capture.

Abstract P-78

Electronic skin cancer reporting

Michael Eden[1], Veronique Poirier[1]
[1]*National Cancer Registration Service, Eastern Office*

Background: The RCPath datasets provide guidance on cancer diagnosis and staging based on published evidence and facilitate consistency in reporting. The National Cancer Registration Service (NCRS) aimed to develop an electronic skin cancer reporting tool to address the issues of user-friendliness, report quality and limited data available nationally on skin cancers. The current under reporting specifically of non melanoma skin cancers represents a major issue in term service planning
Method: The tool was developed in Microsoft Word with an electronic signature to enable operation on any NHS computer. The tool facilitates reporting as per the RCPath and COSD datasets and also provides benefits over other systems including preventing entry of text characters in numeric fields, automatic disabling of deep/peripheral margins in non-excision specimens, automatic calculation of MDT risk status, automatic SNOMED coding and automated use of correct TNM version based on anatomical site with suggestion of TNM components based on data items selected.
Results: The reporting tool has been endorsed by the Working Group on Cancer Services and allows electronic extraction of dataset items from pathology reports across England. It is being published in conjunction with the revised datasets. The launch of the dataset was in April 2014. Very early results show that it has been used to report 233 cases of Non Melanoma Skin cancer and malignant melanoma. 14 Trusts were involved.
Conclusion: The NCRS has developed an electronic reporting tool for skin cancers that reduces the duplication and burden of work and adds features not found in other electronic reporting systems whilst complying with national RCPath and COSD datasets. Its adoption by colleagues in Trusts would allow better assessment of workload and cost associated with the care of skin cancer in England

ECONOMICS OF CANCER

Abstract P-79

The effect of deprivation on cancer incidence and mortality rates in the United Kingdom and the Republic of Ireland

Eamonn O'Leary[1]
[1]*National Cancer Intelligence Network*

Background: This study examined the effect of deprivation on rates of incidence and mortality between 2008–2012 across the United Kingdom (UK) and Republic of Ireland (RoI). The study aimed to determine whether age standardised rates (ASRs) of incidence and mortality differed across the five countries.
Method: Deprivation was measured using the index of multiple deprivation (IMD) in the UK (composite index in Wales, income domain of IMD in England, Scotland and Northern Ireland) and the Pobal HP deprivation index in RoI. Populations were split into quintiles, from least deprived to most deprived. ASRs for incidence and mortality were calculated by sex using the 2013 European Standard Population for the fol-

lowing cancers: Breast; Cervix; Prostate; Colorectal; Lung; Stomach; Malignant Melanoma; Laryngeal; Lip, mouth & pharynx. Regression models were used to test for trends in ASRs and to test for differences between countries, benchmarked against English ASRs.
Results: Similar ASRs and trends in ASRs were observed between England, Wales and Northern Ireland for most cancer sites. Significant differences between English and Scottish incidence and mortality ASRs were observed for, amongst others, lung and lip, mouth & pharynx, with the most deprived quintile having higher incidence and mortality rates in Scotland than their counterparts in England. Significant differences were also observed when comparing Irish and English incidence ASRs for a number of sites, including cervical and prostate cancer, with higher rates observed across all quintiles in RoI.
Conclusions: The most striking outcome from the analysis was the similarities in ASRs, and trends in ASRs, for incidence and mortality across the UK and RoI, with similar results for most cancer sites. The effect of deprivation on cancer appears to be similar throughout the five countries, with the poorest 20% of the population having the highest burden of cancer incidence and mortality for most cancers.

END OF LIFE CARE

Abstract P-80

Factors associated with Palliative Outcomes among cancer patients in a UK region

Victoria Cairnduff[1], Conan Donnelly[1], Finian Bannon[1], Deirdre Fitzpatrick[1], Barbara Gomes[2], Anna Gavin[1]
[1]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[2]*Cicely Saunders Institute of Palliative Care, Policy & Rehabilitation, King's College London*

Background: Cancer patients nearing the End-of-life (EoL) often have many physical symptoms including pain and psychological distress with EoL care aiming to alleviate these by focusing on the needs of the patient and their family in a holistic way. Little is known about the aspects of palliative care that assist patients in experiencing better outcomes.
Aim: To investigate the relationship between palliative outcomes and a range of patient, disease and service characteristics.
Methods: A postal questionnaire including the 10 item Palliative Outcome Scale (POS) was completed by bereaved relatives. A total POS score for last week of life was calculated for each patient with a lower score representing a better palliative outcome. Backward-selection multivariate linear analysis was carried out to identify factors associated with the POS score at EoL.
Results: 467 completed questionnaires were returned (response rate: 31.3%) with 384 respondents completing the full POS. The mean POS score was 14.2 + 6.1 (range1–35). The final model explained 31.1% of variation in POS scores and included factors relating to patient and service characteristics. No associations between disease type, time since diagnosis, place of death and POS score were observed. Ambulance use during last three months (yes vs no; Mean Difference (MD): 1.67; $P = 0.014$), pain medication during last week (yes vs no; MD 3.47; $P = 0.012$), family unhappy with aspects of care (yes vs no; MD 3.48; $P < 0.001$) and younger age at death (0–49 years and 50–69 years vs 80 + years; MD 3.83; $P = 0.032$ and 2.16; $P = 0.011$ respectively) were associated with poorer outcomes. Whereas district nurse knowledge (MD −4.35; $P = 0.001$), hospital doctor providing the help needed (yes vs no; MD −4.04; $P = 0.010$) and male respondents (MD −2.09; $P = 0.001$) were associated with better outcomes.
Conclusion: These findings highlight the importance of patient and service characteristics in explaining POS scores and indicate that further investigation into the role of service providers in relation to palliative outcomes is required.

Abstract P-81

Factors associated with terminally-ill cancer patients achieving their preference to die at home

Finian Bannon[1], Deirdre Fitzpatrick[1], Janine Blaney[1,2], Conan Donnelly[1], Barbara Gomes[3], Anna Gavin[1]
[1]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[2]*Belfast Trust*
[3]*Cicely Saunders Institute of Palliative Care, King's College London*

Background: Most terminally-ill cancer patients prefer to die at home, yet only a minority achieve this. In a population-based survey in Northern Ireland (NI), we investigate potential factors associated with cancer patients achieving their preference to die at home.
Methods: A range of factors relating to care at the end of life were measured in postal questionnaires completed by bereaved relatives. Using multivariate logistic regression, we identified factors associated with patients achieving their preference to die at home.
Results: 467 bereaved relatives out of 1493 invited (31.3%) completed the survey. 362 patients (75%) who expressed a preference of dying at home and spent time at home in their final three months were included in the study. Of these, 53.4% achieved their preference for home death. Factors positively associated with dying at home were living in an affluent area (most affluent: most deprived Odds Ratio [OR] 4.0 [95% Confidence Interval [CI]: 1.4–11.8]), receipt of the good satisfactory care from a district nurse (yes: no OR 6.1 [95% CI: 2.5–15.2]), discussion about place of death with a health professional (yes: no OR 4.7 [95% CI: 1.9–11.5]), and relative's preferred place for the patient's death being home (yes: no OR 17.7 [95% CI: 5.3–59.3]). Factors negatively associated with dying at home were being older (80 + : 0–69 OR 0.45 [95% CI: 0.20–0.99]), Presbyterian religion (Presbyterian: Catholic OR 0.30 [95% CI: 0.11–0.87]), and being unconscious most of the time in their final week (yes: no OR 0.14 [95% CI: 0.03–0.74]).
Conclusion: Interventions aimed at improving district nurse services, and discussion about place of death between health care professional and patient, could increase the proportion of patients achieving their wish to die at home.

EPIDEMIOLOGY

Abstract P-82

HPV prevalence and type-distribution in cervical cancer and premalignant lesions of the cervix: a population-based study from Northern Ireland

Michael O'Rorke[1], Lesley Anderson[1], Robbie Wilson[2], Jackie Jamison[2], Anna Gavin[3]
[1]*Centre for Public Health, Queen's University Belfast*
[2]*Cellular & Molecular Pathology, Northern Health & Social Care Trust*
[3]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*

Background: Human papillomavirus (HPV) is the primary cause of cervical cancer. Assessment of HPV prevalence and genotype distribution is important for monitoring the impact of prophylactic HPV vaccination.
Aim: This study aims to demonstrate the HPV genotypes predominating in pre-malignant and cervical cancers in Northern Ireland (NI) prior to the vaccination campaign's effects.
Method: Formalin fixed paraffin embedded (FFPE) tissue blocks from 2303 women aged 16–93 years throughout NI were collated between April 2011 and February 2013. HPV DNA was amplified by PCR and HPV genotyping undertaken using the Roche® linear array detection kit.
Results: In total, 1241 out of 1830 eligible samples (68.0%) tested positive for HPV, with the majority 1181/1830 (64.5%) having high-risk (HR) HPV infection. 37.4% were positive for HPV 16 (n = 684) and 5.1% for HPV 18 (n = 93). HPV prevalence was 48.1%, 65.9%, 81.3%, 92.2% and 64.3% among cervical intraepithelial neoplasias (CIN) grades I-III, squamous cell carcinomas (SCC) and adenocarcinoma (AC) cases respectively. 82.8% of SCC cases had only one HPV genotype detected and almost a third (32.0%) of all cervical pathologies were HPV negative including 51.9% of CIN I (n = 283), 34.1% CIN II (n = 145), 18.7% of CIN III (n = 146), 7.8% of SCC (n = 5) and 35.7% of AC cases (n = 5).
Conclusions: This study provides important baseline data for monitoring the effects of HPV vaccination in NI. In common with other studies in Europe and elsewhere, HPV 16 was the most prevalent HPV genotype identified. The coverage of other HR HPV genotypes including HPV 45, 31, 39 and 52, the potential for cross protection and issue surrounding HPV negativity in cervical pathologies should also be considered when selecting future polyvalent vaccines in NI.

Abstract P-83

Statin use after diagnosis of breast cancer and survival: a population-based cohort study

Chris Cardwell[1], Blanaid Hicks[1], Carmel Hughes[2], Liam Murray[1]
[1]*Centre for Public Health, Queen's University Belfast*
[2]*School of Pharmacy, Queen's University Belfast*

Background: Pre-clinical studies have shown that statins, particularly simvastatin, can prevent growth in breast cancer cell lines and animal models. We investigated whether statins used after breast cancer diagnosis reduced the risk of breast cancer-specific, or all-cause, mortality in a large cohort of breast cancer patients.
Methods: A cohort of 17 880 breast cancer patients, newly diagnosed from 1998 to 2009, was identified from English cancer registries (from the National Cancer Data Repository). This cohort was linked to the UK Clinical Practice Research Datalink, providing prescription records, and to the Office of National Statistics mortality data (up to 2013), identifying 3694 deaths including 1469 breast cancer-specific deaths. Unadjusted and adjusted hazard ratios (HR) for breast cancer-specific, and all-cause, mortality in statin users after diagnosis were calculated using time-dependent Cox regression models. Sensitivity analyses were conducted using multiple imputation methods, propensity score methods and a case-control approach.
Results: There was some evidence that statin users after a diagnosis of breast cancer had reduced breast cancer-specific mortality and all-cause mortality (fully adjusted HR = 0.84, 95% CI: 0.68–1.04 and HR = 0.84, 95% CI: 0.72–0.97, respectively). These associations for all-cause mortality and breast cancer-specific mortality were more marked for simvastatin (fully adjusted HR = 0.79, 95% CI: 0.63–1.00 and HR = 0.81, 95% CI: 0.70–0.95, respectively).
Conclusions: In conclusion, in this large population-based breast cancer cohort, there was some evidence of reduced mortality in statin users after breast cancer diagnosis. However, these associations were weak in magnitude and were attenuated in some sensitivity analyses.

Abstract P-84

Hospital outpatient attendances linked to cancer registrations in England: analysis of peri-diagnostic period

Sarah Miller[1], Sean McPhail[2], Jonathan Shelton[2], Lucy Irvine[2], Mick Peake[2]
[1]*Knowledge & Intelligence Team (East), Public Health England*
[2]*National Cancer Intelligence Network, Public Health England*

Background: In 2012/13 there were 15 million inpatient admissions in England NHS hospitals across all disease types. There were more than 75 million outpatient attendances. Hospital Episode Statistics (HES) inpatient admissions for cancer patients have been reasonably well explored. In contrast to this, the volume and nature of outpatient attendances for cancer patients are much less well known or understood.
Methods: Cancer registrations in England were linked to HES outpatient data using a standard algorithm in the PHE Cancer Analysis System (CAS). Outpatient records were examined for 473 718 residents of England diagnosed between 2008 and 2010 with the five most commonly diagnosed cancers in England: cancers of the breast, prostate, lung, colorectum, skin, and ovary. Data were analysed over the four years around diagnosis, followed by a focus on the 24-week peri-diagnosis period and breast versus lung cancer attendance patterns.
Results: The cancer patient cohort attended 11.4 million outpatient appointments in the specified period. Breast cancer patients had the highest number of attendances, around 3.75 million with an average 30 attendances per patient. In contrast, lung cancer patients had the lowest number of outpatient attendances per patient (20). Outpatient attendances peaked for all cancer types around diagnosis. The specialty data provided valuable information. For instance, specialties for respiratory and general medicine showed a steady increase in activity for lung cancer patients from around 6–8 weeks pre-diagnosis; due to patients becoming increasingly symptomatic leading up to their diagnosis.
Conclusions: When linked with cancer registration data, outpatient data have the potential to provide us with a more

enriched view of the cancer patient pathway and their interface with secondary care. Linked cancer registration and hospital data have the potential to greatly improve the monitoring and commissioning of cancer services.

Abstract P-85

Does the route in which the diagnosis of pancreatic cancer is made affect the likelihood of surgery and survival?

Victoria H Coupland[1], Niteen Tapuria[2], William Allum[2], Daniela Tataru[1], Margreet Lüchtenborg[1,3], Ruth H Jack[1]
[1]*Public Health England*
[2]*The Royal Marsden NHS Foundation Trust*
[3]*King's College London*

Background: Almost half of pancreatic cancer patients are diagnosed through an emergency route. This study aimed to assess the impact of the route in which patients were diagnosed on receipt of surgery and survival among patients with this cancer.
Methods: Data on pancreatic cancer patients diagnosed in England between 2006 and 2010 were extracted from the national cancer registration dataset. Patients were assigned to a non-emergency, emergency or unknown diagnosis route. Surgery information was obtained from the Hospital Episode Statistics dataset. Cox proportional hazards regression analyses were used to estimate the all-cause mortality hazard ratios (HRs) according to diagnosis route for patients who had surgery and for those who did not. Adjustment was made for case-mix variables including age, sex, socioeconomic deprivation, comorbidity and diagnosis year.
Results: Of the 31 964 patients, 15 146 (47.4%) were diagnosed through a non-emergency route, 15 451 (48.3%) through an emergency route and 1367 (4.3%) through an unknown route. Those diagnosed as emergency presentations were less likely to undergo surgery (4.6%) than those diagnosed through a non-emergency route (13.5%). Among patients that did not have surgery, being diagnosed through an emergency route was associated with higher mortality (HR = 1.63 [1.59–1.67], fully adjusted model). Similarly, in the patients that had surgery, the emergency route was also associated with higher mortality (HRhave surgery, being diagnosed through an emergency 1.45 [1.31–1.61], fully adjusted model).
Conclusions: Patients diagnosed through an emergency route were less likely to have surgery. In both patients who had surgery and those who did not, patients diagnosed through the emergency route had a higher mortality. It will be important to examine this group in more detail to determine if it is possible to diagnose a greater proportion of patients through the non-emergency route. Diagnosing more patients through the non-emergency route could potentially improve outcomes in pancreatic cancer patients.

Abstract P-86

Tobacco smoking and survival after prostate cancer

Antonella Zucchetto[1], Jerry Polesel[1], Andrea Gini[1], Luigino Dal Maso[1], Carmen Stocco[2], Silvia Birri[1], Ettore Bidoli[1], Diego Serraino[1]
[1]*CRO Aviano National Cancer Institute*
[2]*Istituto Oncologico Veneto*

Background: The increasing number of men living with prostate cancer (PCa) highlights the importance of modifiable factors on PCa prognosis. This study aimed to investigate the impact of tobacco smoking on all-cause and PCa mortality among men with PCa in the long-term.
Methods: A clinical cohort including 780 PCa patients aged 46–74 years, enrolled in Northeastern Italy between 1995 and 2002. Vital status up to 2013 (median follow-up 12.7 years) and cause of death was retrieved through digital health archives. Hazard ratios (HRs) of death from any cause or from PCa, with corresponding 95% confidence intervals (CIs), according to smoking-related variables, were calculated using Cox models adjusted for major confounders.
Results: 263 deaths (including 81 deaths from PCa) were documented. Compared to never smokers, increased risks of death from any cause (HR = 1.5, 95% CI: 1.1–2.2) and from PCa (HR = 2.0, 95% CI: 1.1–3.8) emerged among current smokers at PCa diagnosis, with the effects being stronger for men who smoked more than 15 cigarettes/day (HR = 1.9, 95% CI: 1.3–3.0, for all-cause; HR = 2.3, 95% CI: 1.1–4.9, for PCa). Smoking duration was associated to higher risks of all-cause (HR = 1.6, 95% CI: 1.0–2.4 for >45 years) and PCa mortality (HR = 2.1, 95% CI: 1.0–4.5). No statistically significant risks emerged among former smokers, except for increased all-cause mortality among those who had been smokers for more than 30 years (HR = 1.5, 95% CI: 1.1–2.1) and those who had quitted from less than 15 years (HR = 1.5, 95% CI: 1.1–2.2). The unfavorable effect of tobacco smoking was consistent in strata of Gleason score.
Conclusions: Smoking habit negatively affected the survival of PCa patients, with a dose-response effect in terms of intensity and duration. Findings point to the importance of quitting smoking after PCa onset for reducing the risk of PCa death, beyond preventing other smoking-related diseases leading to death.

Abstract P-87

Establishing a population-based register of monoclonal gammopathy of undetermined significance (MGUS) in Northern Ireland

Charlene M. McShane[1], Liam J. Murray[1], Anna T. Gavin[2], Eve Roman[3], Han-I Wang[3], Lesley A. Anderson[1]
[1]*Centre for Public Health, Queen's University Belfast*
[2]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[3]*Epidemiology and statistics research group, University of York*

Background: Monoclonal gammopathy of undetermined significance (MGUS), the most prevalent of the plasma cell dyscrasias precedes almost all cases of multiple myeloma (MM). Previous observational studies have reported an annual progression rate of 1% to MM and associated lymphoproliferative disorders and this risk has been reported to remain elevated beyond 25 years of observation. Recently, the term monoclo-

nal gammopathy of renal significance (MGRS) was coined to reflect the association between kidney disease and monoclonal gammopathy. Associated with significant morbidity and mortality, MGRS has not yet been investigated at a population-based level. The aim of this project is to establish a population-based register of MGUS (and MGRS) within Northern Ireland (NI).
Method: To identify MGUS cases within NI, all serum protein electrophoresis investigations with a detectable paraprotein carried out in NI from 1993 will be reviewed and linked to the NI cancer registry. As MGUS can be caused by a number of haematological malignancies, individuals with a previous or concurrent lymphoproliferative malignancy (up to 12 months following MGUS diagnosis) will be excluded. To obtain information on important confounding variables, the MGUS register will be linked to a number of existing databases housed within the NI cancer registry and to the NI renal register to allow for identification of MGRS patients.
Results: The newly established register will be used to determine the incidence and prevalence of MGUS/MGRS within NI and to investigate the rate of MGUS evolution during the follow-up period. The register will also be analysed to investigate the impact of MGUS on important patient outcomes.
Conclusions: The proposed NI MGUS register will provide an excellent population-based resource to investigate the impact of a relatively common pre-malignant condition for which there is currently limited population-based data/registers available.

Abstract P-88

Examining methods to visualise the cancer population using cartograms

Samuel Jones[1], Hannah McConnell[1], Ceri White[2], Dyfed Huws[2], Lucy Irvine[3], Sarah Miller[4]
[1]*Macmillan Cancer Support*
[2]*Public Health Wales, Welsh Cancer Intelligence and Surveillance Unit*
[3]*Public Health England, National Cancer Intelligence Network*
[4]*Public Health England, Knowledge and Intelligence Team* East

Background: An estimated 2.5 million people are living with cancer in the UK, predicted to increase to four million by 2030. The Macmillan-NCIN Cancer Prevalence project aims to provide the most granular understanding of the cancer population in the UK, with outputs produced at sub-national geographies. A key challenge is how to visualise geographic variations in cancer prevalence, and how to best communicate which areas have the highest number of people living with cancer.
Methods: We use the National Cancer Data Repository (cancer registrations in the UK linked to mortality records) to identify people diagnosed with cancer between 1991 and 2010 and still alive on 31st December 2010. The sub-national geography data is matched to spatial layers using ESRI ArcGIS software. GIS-based output is produced across different formats including: chloropleth/thematic maps and contiguous and non-contiguous cartograms. The results from each type of output are compared.
Results: There were 1.8 million people in the UK diagnosed between 1991 and 2010 who were matched to a sub-national geographical area. Standard chloropleth maps, which are often used within public health, result in small-scale variations being masked in small inner city areas such as London boroughs. Initial cartogram output, based on a density-equalising method, distorts the overall shape of the UK but highlights geographies containing the highest number of people living with cancer by increasing their size, whilst maintaining geographical relationships. We will explore further comparisons of different visualisations using different cartogram and mapping techniques.
Conclusions: Cartograms can help form a visual narrative to visualise geographical areas which contain the highest levels of cancer prevalence in absolute terms. This can demonstrate which areas are under the most increasing demand for health services, helping commissioners quickly understand and plan for better service delivery.

Abstract P-89

Cancer incidence projections to 2035 in northern Ireland

David Donnelly[1], Anna Gavin[1]
[1]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*

Introduction: Monitoring trends in cancer incidence is essential if high quality cancer services are to be maintained and resourced. With incidence rates of many cancers increasing and the size of the elderly population expected to rise, projections of cancer incidence up to 2035 are presented to help guide future allocation of health service resources.
Methods: Age-specific rates for all cancers combined and 30 common cancers are determined for both sexes by year of diagnosis. The data is fitted separately for ages 0–49, 50–59, 60–69, 70–79 and 80 + using a generalised linear model with a power 5 link function. Five-year age group, five-year birth cohort and year of diagnosis are used as predictor variables. The resulting model is used to predict rates in future years, which are combined with population projections to provide estimates of the future number of cases.
Results: For all cancers (excluding non-melanoma skin) age-standardised rates are expected to fall by 1% by 2035 among males and rise among females by 13%. The number of cases is projected to increase by 25% among males and by 24% among females by 2020, while by 2035 increases of 65% for males and 63% for females are expected.
Rates are projected to fall for male lung, bladder, brain, cervical, prostate, ovary and stomach cancers and leukaemia. Increases are expected for breast, colorectal, kidney, liver, oral, female lung, female pancreatic and uterine cancers, melanoma and non-Hodgkin's lymphoma. The number of cases is expected to increase for all cancer types except for cervical and stomach cancers.
Conclusion: This work monitors past changes to cancer cases and rates and predicts an increase of new cancer cases which will require preparation by service planners to meet the needs of future cancer patients. The potential exists to alter these projections through tobacco and alcohol control.

INEQUALITIES – ACCESS TO OPTIMAL CARE AND SURVIVAL

Abstract P-90

Better lung cancer stage distribution in more deprived areas of wales offset by much worse stage 1 and 2 one year survival

Ceri White[1], Rebecca Thomas[1], Julie Howe[1], Tamsin Long[1], Ciaran Slyne[1], Dyfed Huws[1]
[1]*Welsh Cancer Intelligence and Surveillance Unit*

Background: Lung cancer is a priority in Wales because of poor outcomes. We examined stage at diagnosis and one-year relative survival by stage. We considered the effect of several demographic factors.
Methods: We identified residents of Wales diagnosed with lung cancer in 2010–2012 from our cancer registry. We described the distribution of cases by stage, sex, age, area deprivation and health board. We calculated one year survival by stage and the same factors.
Results: Over two-thirds of 2373 lung cancer patients were at stages 3 or 4 compared to a fifth at stages 1 or 2. Others had unknown stage. Men were slightly more likely to have a later stage. Stages 1 and 2 accounted for a slightly higher proportion as age increased. Stage distribution was slightly more favourable as area deprivation increased (early stage 16% in least deprived, 19% most deprived). Stage distribution varied by health board (early stage 14% in worst, 21% in best). Nearly a third of patients survived at least one year. Survival by stage varied considerably (stage 1 78%, stage 4 14%). Almost a third of women and a quarter of men survived at least one year. Survival decreased with age. Deprivation had little effect on all-stage one-year survival, but one-year stage 1 survival was 91% in least deprived areas, 74% in the most. Stage 2 had large variation in survival by deprivation, but later stages varied little.
Conclusions: Although most people are diagnosed at late stages, a large minority have potentially treatable early stage lung cancer in Wales. Despite slightly more favourable stage distribution in more deprived areas, survival is considerably higher in less deprived areas for stages 1 and 2. Many factors such as health seeking behaviour, referral practice, access to diagnostics and treatment, as well as comorbidity may contribute. This needs further exploration and action.

Abstract P-91

Barriers to early presentation with, and diagnosis of, symptomatic breast cancer across the UK: a qualitative study comparing Black African, Black Caribbean and White women

Emma Ream[1], Claire Jones[2], Grace Lucas[3], Elizabeth Davies[2], Ruth Jack[4], Jill Maben[2]
[1]*University of Surrey*
[2]*King's College London*
[3]*The Royal Marsden NHS Foundation Trust*
[4]*Public Health England*

Background: In the UK, breast cancer rates are lower in Black African and Black Caribbean women than White British women. However, Black women have poorer survival outcomes. Unfortunately, paucity of in-depth qualitative evidence hinders understanding of barriers to early diagnosis of symptomatic breast cancer.
Method: A two-phase qualitative research design was used. Phase 1 comprised in-depth interviews with 20 Black African, 20 Black Caribbean and 20 White British Londoners diagnosed with symptomatic breast cancer. In Phase 2, interview findings were validated through focus groups with 14 Black African and 20 Black Caribbean women in Somerset, West Midlands and Greater Manchester. Interview data were analysed following tenets of grounded theory. Focus groups data were compared against interview findings using Framework Analysis.
Results: Women from 33–91 years participated. Time to presentation was influenced by country of birth, time in UK and age. First generation Black African women experienced most barriers to diagnosis and longest delays. Second generation Black Caribbean and White British women were similar and experienced fewest barriers. Absence of pain was a barrier for Black women. Older White British women and first generation Black women shared conservative attitudes and taboos about breast awareness. All women viewed themselves at low risk of the disease (particularly if no family history) and voiced uncertainty over breast awareness and appraising non-lump symptoms.
Conclusions: Findings challenged reporting of Black women homogenously in breast cancer research; distinctions within and between ethnic groups can be masked. Current media and health promotion messages need reframing to promote early presentation with breast symptoms. More emphasis needs to be placed on non-lump symptoms and less on importance of family history. Working with communities and developing culturally appropriate materials may lessen taboos and stigma, raise awareness, increase discussion of breast cancer and promote prompt help-seeking for women with low cancer awareness.

Abstract P-92

Using the 'Routes from Diagnosis' framework to understand variations in survivorship outcomes for Breast Cancer in the City of Manchester

David Chapman[1], George Ulmann[1], Mike Standing[1], Julie Flynn[2], Nicola Cook[2], Ashley Woolmore[3], Wendy Makin[4], Nigel Bunfred[5]
[1]*Monitor Deloitte*
[2]*Macmillan Cancer Support*
[3]*IMS Health*
[4]*The Christie Hospital NHS FT*
[5]*University Hospital of South Manchester NHS FT*

Background: 'Routes from Diagnosis' (RfD) links and analyses routinely collected cancer registry and HES data to map the cancer journey for whole cohorts of patients post-diagnosis. This approach, which brings together information on survival, morbidities and demographics, has been replicated in the City of Manchester (CoM) and expanded to include locally sourced primary, secondary and palliative care data.
Method: The RfD methodology, applied to a linked national NCDR-Inpatient HES dataset, was used to compare survivorship outcomes of patients diagnosed with breast cancer in 2002 and 2004 in the CoM with those of the national English cohort. Subsequently, local provider data were used to construct a patient-level pseudonymised dataset capturing patients' treatment activities across multiple settings of care. This dataset was used to investigate geographic variations in demographics, service use and outcomes of breast cancer patients.
Results: CoM patients diagnosed with breast cancer in 2002 and 2004 were slightly younger at diagnosis and significantly more deprived than the English cohort. However, data analysis demonstrated a similar survivorship outcome profile for Manchester patients compared to the English cohort. However, local provider data, which provide a greater level of geographic detail, reveal large variations in demographics, service usage patterns and survivorship outcomes across the local health economy. For example, across CCGs the proportion of patients surviving 7+ years post-diagnosis without cancer complications varied from 35% to 53%. Key geographic differences in the rate and cause of unplanned admissions were also evident.
Conclusion: Localising the RfD framework has highlighted the considerable inequalities in outcomes that exist across a local health economy, but which can be masked in aggregate data. Outputs have identified areas for service redesign to improve outcomes and the delivery of cancer services in the CoM, supplementing other workstreams that Macmillan is pursuing locally. [1] Routes from Diagnosis (Macmillan Cancer Support, 2014).

Abstract P-93

Using the 'Routes from Diagnosis' framework to understand variations in survivorship outcomes for Lung Cancer in the City of Manchester

David Chapman[1], George Ulmann[1], Mike Standing[1], Julie Flynn[2], Nicola Cook[2], Ashley Woolmore[3], Wendy Makin[4], Philip Barber[5]
[1]*Monitor Deloitte*
[2]*Macmillan Cancer Support*
[3]*IMS Health*
[4]*The Christie Hospital NHS FT*
[5]*University Hospital of South Manchester NHS FT*

Background: 'Routes from Diagnosis' (RfD) [1] links and analyses routinely collected cancer registry and HES data to map the cancer journey for whole cohorts of patients post-diagnosis. This approach, which brings together information on survival, morbidities and demographics, has been replicated in the City of Manchester (CoM) and expanded to include locally sourced primary, secondary and palliative care data.
Method: The RfD methodology, applied to a linked national NCDR-Inpatient HES dataset, was used to compare survivorship outcomes of patients diagnosed with lung cancer in 2002 and 2004 in the CoM with those of the national English cohort. Subsequently, local provider data were used to construct a patient-level pseudonymised dataset capturing patients' treatment activities across multiple settings of care. This dataset was used to investigate geographic variations in demographics, service use and outcomes of lung cancer patients.
Results: CoM patients diagnosed with lung cancer in 2002 and 2004 were slightly younger at diagnosis and significantly more deprived than the English cohort. However, data analysis demonstrated a similar survivorship outcome profile for Manchester patients compared to the English cohort. However, local provider data, which provide a greater level of geographic detail, reveal large variations in demographics, service usage patterns and survivorship outcomes across the local health economy. For example, significant geographic variation was observed in patients' pre-diagnosis pattern of contact with the NHS between CCGs. These cross-City variations in activity were replicated in patients' survivorship, with between 42% and 61% of patients surviving <6 months post-diagnosis across CCGs.
Conclusion: Localising the RfD framework has highlighted the considerable inequalities in outcomes that exist across a local health economy, but which can be masked in aggregate data. Outputs have identified areas for service redesign to improve outcomes and the delivery of cancer services in the CoM, supplementing other Macmillan workstreams. [1] Routes from Diagnosis (Macmillan Cancer Support, 2014).

Abstract P-94

Are women with cervical cancer, diagnosed at the same stage of disease, treated differently according to age, deprivation or region?

Jennifer Lai[1], Rebecca Elleray[1], Jason Poole[1]
[1]*Public Health England, Knowledge and Intelligence*

Background: The results presented are drawn from a new Public Health England report describing the incidence, treatment and survival for cervical cancer by stage of disease. It uses the most detailed stage data available, and investigates equality of treatment and outcomes by patient age, deprivation and region of England.
Method: Cervical cancer cases diagnosed in all women in England between 2007 and 2010 were extracted from the National Cancer Data Repository and linked to the regional Quality Assurance Reference Centre (QARC) datasets in order to improve the completeness and detail of stage data. Further linkages were then made to Hospital Episode Statistics and radiotherapy data in order to obtain information regarding the three major types of treatment.
Results: Nationally, women living in more deprived areas appear less likely to be diagnosed with early stage IA cancer compared to those in less deprived areas. There is also some variation geographically. Younger women diagnosed with stage IA appear more likely to receive loop or cone excision as their only treatment compared to older women, who appear more likely to receive surgery alone. For local stage IB disease, surgery alone decreased with age, with chemo radiation appearing more common in older women. However, for more advanced stage of disease older women were more likely to have no treatment recorded. Women in less deprived areas appear to have more unrecorded treatment for early stage cancer, whereas for later stage disease those in more deprived areas had no treatment recorded. There is also some variation in the treatment by stage across region.
Conclusions: This analysis prompts further investigation into whether this variation is related to variations in the quality of the data, in higher comorbidities that preclude certain treatments in some patient groups, or in differences in the way women are offered or accept treatment.

Abstract P-95

Issues needs and concerns of women with Breast Cancer in rural Scotland

Karen Scanlon[1], Gill Hubbard[2], Richard Kyle[3], Christine Venning[1], Alison Walker[1], Emma Lavelle[1]
[1]*Breast Cancer Care*
[2]*University of Stirling*
[3]*Edinburgh Napier University*

Background: The purpose of this study was to identify the needs and concerns of women living in remote and rural areas of Scotland who have completed treatment for primary breast cancer.
Methods: A mixed methods study was undertaken in 2013 using a supportive care needs Questionnaire (SCNS-SF34) and then a semi-structured telephone interview with those who reported the greatest unmet need.
Results: The mean age of respondents was 59 years (ranged from 38 to 83 years). Most women (71.4%, $n = 30$) were married, with the remainder separated or divorced (11.9%, $n = 5$), widowed (9.5%, $n = 4$) or single (7.1%, $n = 3$). Just over half of women (52.4%, $n = 22$) were receiving medical treatment from a doctor for something not related to cancer at the time of the survey (Table 1). Exactly half of women were diagnosed with cancer more than 5 years ago (50%, $n = 21$), 38% ($n = 16$) were between 18 months and 5 years since diagnosis, and 12% ($n = 5$) were diagnosed in the previous 18 months. This presentation will present key findings from the survey and describe more fully the following themes from the telephone interviews:

- Lack of appropriate information – lack of information and verbal communications
- Extraneous issues – facing up to cancer and concern for the family
- Systemic problems – during treatment and further treatment

Conclusions: Rural women with BC report similar unmet needs to their counterparts. However, they also report unique unmet needs because of their rural location. It is critical that cancer services address the additional unmet needs of rural women with BC and, in particular, needs relating to distance from services.

INTERNATIONAL COMPARISONS OF OUTCOMES/QUALITY OF CARE

Abstract P-96

Comparing South Island NZ chemotherapy data using the Systemic Anti-Cancer Therapy Dataset (SACT)

Di Riley[1], Shaun Costello[1], Ursula Jewell[1], Sarah Tomlinson[2], Drew Winter[3], Chris Jackson[2]
[1]*Southern Cancer Network*
[2]*University of Otago*
[3]*Canterbury District Health Board*

Background: Cancer is the leading cause of death in New Zealand (NZ), and the incidence is projected to increase 5-fold in the next decade. With a rising incidence and prevalence, the utilization of systemic anti-cancer therapy is also projected to increase. Effective and efficient use of chemotherapy is required to maximize health gains and avoid unnecessary expenditure. Increasingly, data sets collected as part of routine care are being utilized to monitor treatment patterns and outcomes. The Southern Cancer Network (SCN) services the South Island of NZ, a population of 1 million, via 2 Cancer Centres and several regional sites. We recently introduced an electronic chemotherapy prescribing module of the Mosaiq oncology patient management system (Elekta).
Aim: To ascertain whether MOSAIQ could be used to reliably assess chemotherapy utilisation across the NZ SCN Region, based on the English SACT dataset. Methods: We undertook a retrospective review of prescribing for breast and colorectal cancer at two Cancer Centres, measuring data completeness, regional variations in prescribing patterns, and chemotherapy utilisation by age, using SACT definitions. All cases of breast (C50, $n = 271$) and colorectal (C18.1–20, $n = 210$) cancer treated with chemotherapy between 1 Nov 2013 and 31 Oct 2014 were reviewed.

Results: Pathological stage data was present for 67% of breast but only 31% of colorectal. Treatment intent was recorded in all cases, however 10% of breast cancer cases and 11% colorectal had a treatment intent that was incongruent with recorded stage. Considerable variation in recording of regimens was noted, resulting in a high need for manual analysis. Prescribing levels were also shown to reduce by patient's age.
Conclusion: Our data demonstrates the need for validation of stage and treatment intent as well as harmonisation of chemotherapy protocols prior to routine data sets being useful for understanding and monitoring patterns of chemotherapy care.

Abstract P-97

Role of treatment in international differences in one-year mortality from early stage non-small cell lung cancer: a tentative answer from the International Cancer Benchmarking Partnership study

Tsion Solomon[1], Michael Peake[2], John Butler[3], Michel Coleman[4], William Evans[5], Erik Jakobsen[6], Michael Boyer[7], Tom Børge Johannesen[8], Bernard Rachet[4]
[1]*Cancer Survival Group, London School of Hygiene & Tropical Medicine*
[2]*Department of Respiratory Medicine, Glenfield Hospital*
[3]*Royal Marsden Hospital*
[4]*Cancer Survival Group, London School of Hygiene & Tropical Medicine*
[5]*Juravinski Cancer Centre at Hamilton Health Sciences, Cancer Care Ontario*
[6]*Odense University Hospital*
[7]*Department of Medical Oncology, Royal Prince Alfred Hospital*
[8]*Norwegian Cancer Registry*

Background: International differences in lung cancer survival are well known. Using population-based data, we assessed if variation in the provision of treatment may explain some of this variation, focusing on early-stage non-small cell lung cancer (NSCLC) where guidelines recommend resection of curative intent.
Method: Population-based registry data were obtained for all 6375 adults diagnosed with early-stage NSCLC during 2004–2006 in Australia (New South Wales), Canada (Manitoba), Denmark, Norway and the UK (East of England, West Midlands), and merged with surgery information. Age- and sex-adjusted logistic regression models were fitted considering surgery of curative intent and death within one year since diagnosis as distinct outcomes.
Results: Patients in Norway, Manitoba and West Midlands had higher adjusted odds of receiving surgery of curative intent (range: OR 1.40–1.51) and lower odds of dying within one year after diagnosis (OR 0.59–0.83). The converse was found in East of England and New South Wales (surgery: OR 0.45–0.54; dying within one year after diagnosis: OR 1.49–1.56). In Denmark there was an unusual higher likelihood of both surgery of curative intent and early death.
Conclusions: Higher likelihood of surgery of curative intent was generally associated with better short-term prognosis in this large population-based study. Improving access to surgical treatment would probably reduce the survival gap among patients with early-stage NSCLC.

Abstract P-98

Morbidity and Mortality in Gynaecological Oncology

Thumuluru Kavitha Madhuri[1,2], Simon Butler-Manuel[1], Sarada Kannangara[1], Patricia Ellis[1], Anil Tailor[1]
[1]*Royal Surrey County Hospital NHS Foundation Trust*
[2]*University of Surrey*

Background: Data on ouctomes in gynaecological oncology is limited due to lack of standardized data collection. While surrogate markers exist in the form of length of stay, there is no consistent outcome data.
Method: Prospective data collection was undertaken in a tertiary referral centre for minimal access surgery and gynaecological oncology. All patients undergoing surgery were included. Contemporaneous data collection included per-operative as well as post-operative data collection. Complications were graded using the Clavien – Dindo system based on the severity and intervention required.
Results: A total of 297 major and complex major procedures were undertaken by 3 full time surgeons and one locum over a 12 month period. 129/297 were complex majors and the remaining 168/297 were majors. The total patient bed days were 1267 with an average length of stay of 4.27. 15 episodes of per-operative morbididty were recorded which included injury to bowel (4), bladder (1), ureter (2). During this period there were 2/297 deaths and 5/297 return to theatres.199/297 cases had a Clavien-Dindo score of 0. 35/297 had a Clavien-Dindo score greater than I (11.78%).
Conclusions: This is a prospective single centre study with a dedicated database reporting on the post-operative mortality and morbidity. This study was driven by a need to obtain robust data. The UKGOSOC is a multicentre initiative that has recently published similar figures however the study has concluded. We hope to present our data on database management and report on clinical outcomes. This study has also shown a change in our practice when compared with our previous rates of open surgery which has significantly reduced due to conversion to robotic surgery.

LESS COMMON CANCERS

Abstract P-99

James Lind Alliance (JLA) neuro-oncology priority setting partnership (PSP): Process to identify the top 10 UK priorities for clinical research

Helen Bulbeck[1], Robin Grant[2], Julia Day[3], Lucy Macdonald[3], Richard Morley[4], Gail Quinn[5], Kathy Oliver[6]
[1]*Brainstrust*
[2]*Department of Clinical Sciences, Western General Hospital*
[3]*NHS Lothian*
[4]*James Lind Alliance (JLA)*
[5]*Cochrane Collaboration*
[6]*International Brain Tumour Alliance (IBTA)*

Background: Many clinical questions about brain and spinal cord tumours remain unanswered – therefore patients, carers and clinicians should work collaboratively to establish the most important research priorities. The primary objective of the Neuro-Oncology PSP was to identify the top 10 treatment uncertainties in diagnosis and management of primary central nervous system (CNS) tumours. A secondary objective was to

highlight the necessity of a brain tumour community collaborative approach to priority setting in clinical research.
Method: Scope:
- Clinical uncertainties of interventions for primary CNS tumours, any age, from diagnosis to terminal stages.
- Identification of stakeholders from cross section of the brain tumour community (30 members).
- Funding from brain tumour charities, Cochrane Neuro-Oncology and Edinburgh and Lothian Health Foundation.
- Development of specific website (www.neuro-oncology.org.uk).
- Widely publicised survey using multi-disciplinary databases to brain tumour community.
- Categorisation and standardisation of questions into PICO (participants, interventions, comparisions, outcomes) format.
- Systematic Cochrane style literature searching to ensure genuine uncertainties.
- Prioritisation using James Lind Alliance methodology and unbiased facilitators.
- Second public survey on prioritised questions.
- Final workshop to determine top 10 questions using a modified Delphi and Nominal Group technique.

Results: Over 600 individual questions were generated from the initial survey, a patient forum and the Database of Treatment Uncertainties (DUETS). A second public survey comprised 44 PICO questions. Over 200 people voted for their Top 10. 25 questions were discussed at a final workshop which reached agreement on the final top 10 uncertainties.
Conclusion: To focus attention on what matters to those affected by brain and spinal cord tumours, it is crucial to promote the ten clinical research uncertainties (listed at http://www.neuro-oncology.org.uk) to governmental, neuroscience and cancer charity funders. This has been a very successful, rewarding collaboration between CNS patients/carers, charities and multidisciplinary professional organisations.

Abstract P-100

Retroperitoneal sarcoma long term outcomes

Matthew Francis[1], Nicola Dennis[1], John Broggio[1], Dirk Strauss[2]
[1]*Public Health England Knowledge & Intelligence Team West Midlands*
[2]*The Royal Marsden NHS Foundation Trust*

Background: Patients with retroperitoneal sarcoma (RPS) tend to present late with large tumours which can infiltrate nearby anatomical structures, making it difficult to achieve wide surgical margins for many RPS patients. As a consequence, these tumours are prone to recurrence and can remain indolent for many years. The aim of these analyses was to investigate the long term survival patterns for patients with RPS.
Methods: Information relating to retroperitoneal and other intra-abdominal sarcomas was extracted from the Cancer Analysis System for the period 1985 to 2009 to allow maximum follow-up. Fifteen-year relative survival was calculated for patients diagnosed with RPS between 1985 and 1995. The results were compared with long term survival rates for other intra-abdominal sarcomas.
Results: Across all intra-abdominal cancer sites relative survival rates appear to stabilise at around five years post diagnosis. However, RPS five-year relative survival rates continue to decrease significantly at fifteen years post diagnosis in the 30–59 age group only. The current data cannot explain this trend, although this is possibly due to the increased occurrence of liposarcomas in this age group which can remain indolent for many years.
Conclusion: One of the limitations of the results presented is the absence of information relating to dates of diagnosis with local recurrence, as well as information relating to the stage of the tumour at diagnosis. These data items are currently being collected in the Clinical Outcomes and Services Dataset. However, it will be 15 years before a robust set of data and follow up period is available to provide an in-depth insight into why patients aged 30–59 years show such an unusual long-term survival pattern.

Abstract P-101

A landmark programme to understand the needs and experiences of all people affected by blood cancer

Lauren Dias[1], David Henderson[1]
[1]*Leukaemia & Lymphoma Research, Holborn*

Blood cancers represent one in 10 of all new cancers diagnosed each year in the UK. Overall, an estimated 230 000 people in the UK are living after a diagnosis of blood cancer or closely related condition. Leukaemia & Lymphoma Research are on a mission to beat blood cancer. With over 50 years of experience under our belt we are proud of the knowledge we have acquired about blood cancers and blood cancer patients. Data and evidence exists, but there is currently no single and comprehensive authoritative source that evidences the needs of all blood cancer patients. Our Prioritisation of Patient Need (PPN) Programme is changing that. PPN is a continuous research programme gathering and collating data and experiences to truly identify the needs of blood cancer patients across the whole spectrum of blood cancers. As part of the programme we initiated a series of qualitative and quantitative work to capture the patient voice: 17 focus groups, 2 facilitated support groups, 7 in-depth patient interviews, an online survey with 1725 people personally affected by blood cancer, including 1029 patients, 21 in-depth interviews with healthcare, research and policy professionals, desk based research collating sources and evidence of blood cancer patient needs, analysis of data and publications including work by HMRN, NCIN and NCPES. The results of this phase of PPN have shown a number of thematic need areas across the entire patient pathway. Needs range from blood cancer awareness to psychological support, information and advice and needs post treatment. This first phase has highlighted the breadth of patient need across all blood cancers. We aim to extend and gather more evidence by undertaking further research. We also want to work with other organisations to explore what is already available for blood cancer patients and ultimately improve patient experience and outcomes.

Abstract P-102

Designing specialist services for cancer of unknown primary in the West of Scotland

Gwen Allardice[1], David Morrison[1], William Jones[2]
[1]*West of Scotland Cancer Surveillance Unit*
[2]*University of Glasgow*

Background: Cancers of unknown primary (CUP) are metastatic malignancies for which a primary site has not been

identified. They are a disparate group of cancers that present at an advanced stage and respond poorly to treatment The incidence of CUP has risen and then fallen over the past 50 years possibly driven first by greater diagnostic sensitivity and later by better identification of the primary site. Worldwide, CUP are the 6–8th most common cancers, accounting for 2–5% of all cancer diagnoses but the 3–4th most common cause of death from cancer. National Institute for Health and Care Excellence guidelines recommend that every hospital with a cancer centre should have a dedicated CUP team. Our aim was to describe hospital care to inform implementation of these guidelines.
Methods: We conducted a retrospective observational cohort study utilising West of Scotland Cancer (WoS) Registry data from 2010–2011. All incidences of CUP, ICD codes C77–80, were extracted and linked to SMR01 hospital discharge records; information from the hospital stay during which the diagnosis was made was extracted.
Results: During 2010–2011 837 cases were diagnosed; approximately 8 per week. Median age was 76 years; 60% were admitted to General Medicine, 27% to General Surgery and 9% to Geriatric medicine; 88% presented as emergency admissions. The median length of hospital stay (continuous in patient stay following that admission) was 10 nights during which time 35% of the cases died. Median survival is 43 days.
Conclusion: Patients with CUP are elderly, usually diagnosed following emergency presentation, managed within a range of specialties, relatively rare and have short survival All of these factors contribute to this population being difficult to identify and manage. Further work describing in-hospital care patterns is required to inform the design and implementation of specialist CUP services.

Abstract P-103

Review of establishing a Cancer of unknown primary two week wait GP referral service at University Hospitals Bristol NHS Foundation Trust

Joanita Ocen[1], Anna Kuchel[1]
[1]*Bristol Cancer Institute*

Background: Cancer of unknown primary (CUP) is where a patient has a malignancy without an identified primary source. Following National Institute of Health and Care Excellence guidance, many hospital trusts have established a CUP service to coordinate care for these patients. University Hospitals Bristol NHS Foundation Trust (UHB) and North Bristol NHS Trust run a joint CUP service accepting internal referrals and, since July 2014, a GP two-week wait service. Currently the clinic is staffed by 1 consultant and 3 clinical nurse specialists.
Methods: Data for this project was collated from a database of GP referrals made to the CUP service at UHB from July 2014 to January 2015, compiled by the CUP specialist team. It included details of dates of referrals, when they were seen in clinic, when cases were discussed at the CUP multi-disciplinary team (MDT) meeting and their outcomes. Clinic letters/discharge summaries were used collect details on management and outcomes. Details on initial CT imaging requests were collected from Sunquest online system.
Results: 44 GP referrals were made to the CUP service. Full body CT scans were requested by the GPs with 24 of the referrals. 19 patients were seen in clinic from July to January, 79% within 2 weeks. 5 were admitted to hospital before being seen. 29 cases were referred directly to the CUP MDT for discussion. 20% of the referrals were inappropriate. 10 patients were found to have had confirmed CUP, 8 were for best supportive care and later died. 5 patients had no cancer. 13 of the referrals had site-specific cancers.
Conclusion: This project has shown this service to be an effective 2 week wait referral system with the majority of patients being seen within 2 weeks. It highlights the importance of early CT imaging and MDT involvement when assessing and managing these patients.

LINKS WITH OTHER DISEASE AREAS: HEALTH INTELLIGENCE NETWORKS

Abstract P-104

Long-term cardiac morbidity among 5-year survivors of childhood cancer

Miranda Fidler[1], Raoul Reulen[1], Chloe Bright[1], Katherine Henson[1], Joyeeta Guha[1], Kwok Wong[1], Julie Kelly[1], Clare Frobisher[1], David Winter[1], Michael Hawkins[1]
[1]*Centre for Childhood Cancer Survivor Studies, University of Birmingham*

Introduction: Although survival from childhood cancer has increased, long-term sequelae remains a concern due to the treatment received. Cardiac disease is among the leading causes of both morbidity and mortality among survivors, and thus warrants further exploration in order to better understand this risk. In this study we investigated the risk of long-term cardiac morbidity among 5-year survivors within the British Childhood Cancer Survivor Study (BCCSS).
Methods: The BCCSS, which is a population-based cohort of 34 489 5-year survivors of childhood cancer diagnosed before age 15, was linked to the national Hospital Episode Statistics database for England in order to ascertain cardiac-related hospital admissions. Observed (O) numbers of first cardiac hospitalization were compared to that expected (E) from the general population.
Results: In total, 594 individuals were hospitalized for a cardiac condition, which was 80% higher than that expected [O/E: 1.8, 95% CI: 1.7–2.0]. Survivors of acute myeloid leukemia (AML) [O/E: 13.8, 95% CI: 10.5–17.8], Hodgkin lymphoma (HL) [O/E: 3.4, 95% CI: 2.8–4.1], and Wilms [O/E: 3.0, 95% CI: 2.3–3.9] were greatest at risk. By cardiac subgroups, survivors were hospitalized for cardiomyopathy/heart failure (CM/HF) and valvular conditions 7.8- [95% CI: 6.7–9.0] and 4.0-times [95% CI: 3.0–5.2] more than expected, respectively. Among first primary neoplasm (FPN) diagnoses with >5 CM/HF observed events, the risk was substantially raised (O/E > 5) for AML [O/E: 114.4, 95% CI: 81.7–155.8], Wilms [O/E: 13.8, 95% CI: 8.6–2.1], bone sarcoma [O/E: 12.7, 95% CI: 7.0–21.3], soft tissue sarcoma [O/E: 11.5, 95% CI: 17.7], leukemia (excluding AML) [O/E: 8.5, 95% CI: 5.8–12.0], non-HL [O/E: 8.1, 95% CI: 4.2–14.2], and neuroblastoma [O/E: 6.4, 95% CI: 2.1–14.9] survivors. Similarly, among FPN diagnoses with >5 valvular observed events, survivors of HL [O/E: 23.0, 95% CI: 15.4–33.0] and Wilms [O/E: 6.8, 95% CI: 2.7–14.0] were markedly at a higher risk (O/E > 5).
Conclusions: Survivors of childhood cancer are at a significantly increased risk for cardiac-related hospitalizations. As there are variations in the degree of observed excess depending

on which cardiac outcome is assessed and FPN, risk needs to be assessed in a stratified way. These findings should provide useful evidence for risk stratification and updating clinical follow-up guidelines.

OLDER PEOPLE & CANCER

Abstract P-105

Bridging The Age Gap in Breast Cancer – improving treatment decisions for older women using routine data

Paul Richards[1], Sue Ward[1], Jenna Morgan[2], Matthew Francis[3], Karen Collins[4], Maria Burton[4], Ant Nettleship[5], Katherine Lifford[6], Malcolm Reed[7], Lynda Wyld[2]
[1]*School of Health and Related Research, The University of Sheffield*
[2]*Department of Oncology, The University of Sheffield*
[3]*Public Health England, Knowledge and Information Team (West Mids)*
[4]*Centre for Health and Social Care Research, Sheffield Hallam University*
[5]*EpiGenesys, The University of Sheffield*
[6]*Institute of Primary Care and Public Health, Cardiff University*
[7]*Brighton and Sussex Medical School*

Introduction: A third of new cases of breast cancer are diagnosed in women aged ≥70. In the UK older women are less likely to receive guideline therapy and there are variations in practice. The Bridging the Age Gap (BTAG) study is developing a decision support tool (DST) using observational data to improve decision making in this population. The study focusses on two decision problems; a) surgery or primary endocrine therapy (PET) for women with ER+ operable disease and b) surgery with or without chemotherapy.
Methods: Evidence on decision making behaviour and information needs of patients and clinicians were assessed using qualitative interviews and questionnaires. Predictions of survival for the DST were derived using statistical modelling of 23 960 cancer registration records covering all patients diagnosed with breast cancer at age 70+ in the West Midlands and Northern & Yorkshire regions between 2002–2010. Frailty as measured by Activities of Daily Living (ADL) is incorporated into survival models using external survey data. A multi-centre UK observational cohort study is collecting detailed prospective data on baseline characteristics, treatments and outcomes, including frailty, which will be used to modify and validate the final DST.
Results: A web-based support tool based on the retrospective data is complete. The predictive models developed so far are being validated using external data and a clinician survey. The tool presents survival data in pictorial format, reflecting preferences expressed in the qualitative interviews. Recruitment to the cohort study is ongoing.
Discussion/Conclusion: The BTAG study shows that in principle cancer registration data can be used to build predictive models which can be used in the process of making treatment decisions. A randomised controlled trial of the tool commencing in July 2015 will evaluate its effectiveness in improving decision making for older women with breast cancer.

Abstract P-106

Understanding areas of need and patient experience in older patients with blood cancer

Lauren Dias[1], David Henderson[1]
[1]*Leukaemia & Lymphoma Research, Holborn*

An estimated 230 000 people in the UK are living after a diagnosis of blood cancer or closely related condition. An expected 64% of people diagnosed each year will be over 65. It is well documented that the experience of older patients with cancer is complex. Part of our Prioritisation of Patient Need (PPN) programme aims to understand the needs of blood cancer patients in this age group. PPN was initiated to understand patient need in a series of qualitative and quantitative work. We conducted an online survey with 1725 people personally affected by blood cancer, including 375 respondents over 65. Out of all respondents over 65, 64% have or had a blood cancer. Qualitative work within this programme included a series of focus group and in-depth interviews with a mixture of ages. Older patients with blood cancer in our survey highlighted a number of need areas which were similar across all age groups. For example, information and support on prognosis (needed by 96% of patients aged 16–64 and 93% of older patients). However, there were several need areas which were different to the rest of the surveyed patient population. Including: Psychological/emotional support – a need by 66% of older patients in our survey in comparison to 84% of patients aged 16–64. Advice regarding financial support and benefits – a need by over 50% of respondents aged 16–64 in comparison to 25% of older patients. We've also began to understand what different needs mean to older patients in our qualitative work, such as needs around dealing with co-morbidities, locality of services and telling family members. The results highlighted that there are some clear need areas specific to older patients. Further research will create a clearer picture of the needs of older blood cancer patients and how to improve patient experience.

Abstract P-107

Impact of patient's age on treatment and outcome in diffuse large B-cell lymphoma (DLBCL): an analyses from the UK's population-based Haematological Malignancy Research Network

Alexandra Smith[1], Eve Roman[1], Debra Howell[1], Russell Patmore[2]
[1]*University of York*
[2]*Hull and East Yorkshire Hospitals NHS Trust*

Background: Concerns have been raised that older people may be offered less intensive treatments than their younger counterparts; with decisions being based on 'chronological' rather than 'biological' age. We aimed to examine this in an aggressive, but potentially curable cancer – diffuse large B-cell lymphoma (DLBCL) – using data from a specialist population-based patient cohort (www.hmrn.org).
Methods: For 2137 patients newly diagnosed 2004–2012 and followed-up to 2014, the likelihood of being treated with chemotherapy was examined by age, sex, deprivation, performance status (ECOG) and prognostic factors. Outcome was estimated for overall survival (OS) and relative survival (RS).
Results: 83% of patients were treated with chemotherapy; increasing age (Odds Ratio = 0.92; 95% CI: 0.91–0.93) and poor performance status (OR 0.60; 95% CI: 0.55–0.66) being

the strongest predictors for not receiving intensive therapy. 5-year OS and RS were 46% and 55% respectively; and for treated patients this increased to 57% and 65% respectively. Amongst treated patients RS fell with increasing age from 72% (<65), to 63% (65–74) and 55% (≥75); and increasing performance status falling from 87% in those with the best score (ECOG = 0) to 18% in those with the worst (ECOG = 3/4). Age trends were less marked within performance status strata; for example for those with ECOG = 0, RS was 88% in both those <65 and 65–74, falling to 76% in those over 75. By contrast ECOG retained its strong predictive capacity within all age-strata; for example in those aged ≥75 RS decreased from 76% (ECOG = 0) to 13% (ECOG = 3/4).
Conclusion: Older patients and those with poor performance status were less likely to receive intensive treatment; trends with performance status being more marked than those for age. Indeed, outcomes for older people with a good performance status were similar to those of younger patients.

Abstract P-108

Older people and cancer in England – pulling together the evidence

Lucy Irvine[1], Sean Duffy[2], Mike Birtwistle[3], Laura Harper[2], Hannah McConnell[4], Selina Mehra[4], Nick Ormiston-Smith[5], Katrina Brown[5], Jodie Moffat[5], Lucy Elliss-Brookes[1]
[1]*PHE National Cancer Intelligence Network* NCIN
[2]*NHS England*
[3]*Incisive Health*
[4]*Macmillan Cancer Support*
[5]*Cancer Research UK*

Background: The PHE National Cancer Intelligence Network and NHS England Older People and Cancer report, released in December 2014, tells the story of cancer in older people. The report summarises the evidence that exists on older people and cancer, supporting England's National Clinical Director's 'call to action' on the issue. The report is a product of many organisations' efforts.
Method: A wide range of, both new and old, analysis and information is included in the report. The information is summarised in chapters that follow the patient pathway, including earlier diagnosis, treatment, patient experience, survivorship and end of life.
Results: The report provides a wide range of statistics and analysis. Key messages include:
- Nearly two thirds of cancer diagnoses occur in the over 65s. By 2020 there will be nearly two million people aged 65 and over alive following a diagnosis of cancer.
- Survival decreases with increasing age, in particular for people over 70. Older people with late stage tumours have substantially lower survival.
- Older people are less likely to receive surgery, radiotherapy or chemotherapy treatment than younger people.
- Seven in ten inpatient hospital admissions for cancer for the 75 and overs were emergencies, compared to just over half for those aged 65 and under.
- Older people are more likely to be diagnosed following an emergency presentation, which is associated with poorer outcomes.
- Older people may be more likely to experience frailty and have other health conditions that may impact upon their quality of life and affect cancer treatment options.
- Older people are less likely to have access to a Clinical Nurse Specialist or to have been given information on the side effects of treatment.

Conclusions: The report provides an important contribution which sets a baseline as we seek to improve cancer outcomes for older people.

PATIENT REPORTED OUTCOME/EXPERIENCE MEASURES (PROMS/PREMS)

Abstract P-109

Radiotherapy patient experience survey – NHS Scotland results

Scott Taylor[1], Fiona Hodgkiss[1]
[1]*Scottish Government*

Background: To better understand the experience of patients receiving radiotherapy within NHSScotland, and to inform a quality improvement programme the Scottish Cancer Taskforce (SCT) commissioned a national radiotherapy patient experience survey.
Method: The patient experience work was extensively trailed within the five radiotherapy centres. All patients attending for their last radiotherapy treatment received from staff a 'patient experience pack' containing information sheet, survey form (based on the NHS England survey), and SAE. To achieve a minimum return rate analysis identified field work would require to run for five months within the smallest centre and for two months within the largest centre. A national report with five radiotherapy centre reports were published as part of the wider Scottish Care Experience Survey Programme.
Results: A response rate of 54% was achieved Patients are positive about their overall radiotherapy care 97% rated overall care as excellent or very good 91% indicated staff always took account of what mattered to them 97% indicated staff always treated them with compassion and understanding There is room for improvement 21% indicated they were only involved in decisions about their treatment 'to some extent' 36% indicated information at the start of radiotherapy was 'satisfactory' 26% indicated they hadn't had a 'formal review' of their treatment There is some variation across the five radiotherapy centres Results were broadly similar, but there was considerable variation around changing facilities, information provided and treatment reviews Comparisons between Scottish and English results found more similarities than differences.
Conclusions: The SCT are reassured that 97% of patients rated overall care as 'excellent' or 'very good', and will now support a cycle of improvement at centre, and national level. A Scottish cancer patient experience survey will be undertaken within 2017, and to enable comparisons it is anticipated the survey will incorporate the key radiotherapy questions.

Abstract P-110

A methodological review of the Short Form Health Survey 36 (SF-36) and its derivatives among breast cancer survivors

Charlene Treanor[1], Michael Donnelly[1,2]
[1]*Centre for Public Health, Queen's University, Belfast*
[2]*UKCRC Centre of Excellence for Public Health, Queen's University, Belfast*

Background: Breast cancer survivors may experience adverse or late effects and it is important to understand the impact of these effects on the health and well-being of cancer survivors. Increasingly, focus is moving from traditional clinical outcomes to patient reported outcomes such as quality-of-life and health status.
Method: We undertook a systematic review to identify the validity, reliability and responsiveness of the Short Form (SF) health survey measures among breast cancer survivors. We searched a number of databases for peer-reviewed papers. The methodological quality of the papers was assessed using the Consenus-based Standards for the selection of health Measurement Instruments (COSMIN) tool.
Results: The review identified seven papers that assessed the psychometric properties of the SF-36 ($n = 5$), partial SF-36 ($n = 1$) and SF-12 ($n = 1$) among breast cancer survivors. Internal consistency scores for the SF measures ranged from acceptable to good across a range of language and ethnic subgroups. The SF-36 demonstrated good convergent validity with respective subscales of the Functional Assessment of Cancer Treatment- General scale (FACT-G) and two lymphedema-specific measures. Divergent validity between the SF-36 and Lymph-ICF was modest. The SF-36 demonstrated good factor structure in the total breast cancer survivor study samples. However, the factor structure appeared to differ between specific language and ethnic sub-groups. The SF-36 discriminated between survivors who reported or did not report symptoms on the Breast Cancer Prevention Trial Symptom Checklist (BCPT); and SF-36 physical sub-scales, but not mental subscales, discriminated between survivors with- or without lymphedema. Methodological quality scores varied between and within papers.
Conclusions: SF measures appear to provide a reliable and valid indication of general health status among breast cancer survivors though caution is required when interpreting scores provided by non-English language groups. Further research is required to test the sensitivity or responsiveness of the measure.

Abstract P-111

The people behind cancer care: understanding the link between patient and staff experiences

Anna Chourdaki[1], Hannah McConnell[1]
[1]*Macmillan Cancer Support*

Background: Every cancer patient deserves to be treated with dignity and respect. While most cancer patients receive good, compassionate care, there are many that do not. Emerging literature shows links between delivering quality care and staff feeling supported (1,2). This relationship needs further exploration to identify the impact of interactions between positive patient experience and staff engagement.
Method: 20 unstructured interviews were conducted with patients and NHS staff at sites throughout England. Vignettes were used to elicit patient and staff experiences and assess how these affect patient experiences and staff perception of quality care as well as barriers to it. To support findings, an on online blog was set up to reach out to a wider audience.
Results: A qualitative analysis of interview narratives suggested that staff value a culture where their views and wellbeing are taken into account and where access to training is not a struggle. Additional themes focused on leadership, communication, workload and time with patients as well as organisational policies and IT. The most intuitive proof of positive patient experience was identified when staff were more likely to recommend their trust as a place for work or treatment (1). And this is when patients reported being involved in decisions, receiving quality communication and experiencing coordination of services.
Conclusions: Patients are more than their conditions and staff more than their uniforms. Every contact counts, not just between them, but also amongst staff who should treat each other as peers in providing care, regardless of their position within the NHS. The interview narratives highlight that both staff and patients recognise that quality of care is not solely measured by clinical outcomes. While solutions may be hard to implement due to the very essence of human interactions, cultural change and practical steps can be successfully adopted.

Abstract P-112

Analysis of National Cancer Patient Experience Survey

Stephen Scott[1], Hilary Wilderspin[1]
[1]*London Cancer Alliance*

Background: The London Cancer Alliance was established in 2012 as a provider network of 15 cancer providers in south and northwest London covering a resident population of 5.7 million. A priority of the LCA is to improve patient experience, and a key tool to inform service improvements is the National Cancer Patient Experience Survey.
Methods: Each of the 70 questions is analysed by tumour type and provider to provide a comprehensive comparative view of their ranking within the LCA and nationally. The LCA also replicated the ranking used for all Trust's to inform LCA providers of their relative position nationally irrespective of whether they were in the top 10 or bottom 10. Rankings were produced for most improved trusts over the last year, and also the most improved over the 4 years of the survey. Additionally a qualitative analysis of the free-text comments in the survey has been completed for the last 2 years of the survey.
Results: Examples of highlights from this work include: The proportion of patients reporting it was easy to contact their Clinical Nurse Specialist varied by trust from 58% to 86% within the LCA. The proportion of patients reporting that there were always or nearly always enough nurses on duty during their stay in hospital, varied from only 49–77% within the LCA. Only 45% of patients seen in a LCA provider reported that their GPs and nurses at their general practice did everything they could to support them while they were having their cancer treatments. 54% of patients responding with a Brain/CNS cancer thought their health got worse whilst waiting to be seen for their 1st appointment with a hospital doctor.
Conclusions: More detailed comparative analysis at local land tumour level allows providers to share practice and identify areas for improvement

Abstract P-113

The Cancer Patient Portal: first steps towards record access for all cancer patients

Michael Chapman[1], Julie Temple[1], Ruth Stafferton[1], Will Jones[2], Sarah Stevens[3]
[1]*Cancer Research UK*
[2]*Brainstrust*
[3]*Public Health England*

Background: Patient access to records can benefit both the patient and the NHS, while transparency of NHS data collection is increasingly important. We previously presented early work to provide brain tumour patients with access to their National Cancer Registration Service (NCRS) records. We now report the evaluation of a broader pilot.
Methods: The Patient Portal includes a patient's NCRS records, a quality of life questionnaire that can be linked to the NCRS record, and private diary and contact list functions. The portal has been offered to patients treated by ten clinical teams covering four cancer types. The portal records how many patients request access and anonymous usage information. Users can complete an online feedback survey and feedback from clinical teams is sought through semi-structured interviews. Clinical teams also record how many patients are offered the service.
Results: Over 80 patients have requested access to their records and, while patients are selected by clinical teams, we observe comparable uptake rates to similar initiatives. Offering the portal has been manageable within clinical teams' existing workloads. Patient feedback is positive: 86% of those providing feedback would recommend the portal. Patients value having information in one place, being able to access this from home and seeing 'exactly what has been found'. Most think the portal would be more valuable if it included more data and these were timelier. Patients are able to feedback to the NCRS where data are missing, helping to improve data flows.
Conclusions: We have developed a secure Patient Portal that allows any cancer team in England to offer their patients access to their NCRS records. Patients are receptive and the service will become increasingly valuable as further information and features are added. The portal can also provide a platform for collecting data and sharing this with clinicians and researchers.

Abstract P-114

Myeloproliferative neoplasm patients experience significant symptom burden

Lesley Anderson[1], Glen Titmarsh[1], Mary Frances McMullin[2], Andrew Duncombe[3], Ruben Mesa[4], Robyn Scherber[4], Amylou Dueck[4], Frank DeVocht[5], Lin Fritschi[6], Mike Clarke[1]
[1]*Centre for Public Health, Queen's University Belfast*
[2]*Centre for Cancer Research and Cell Biology, Queen's University Belfast*
[3]*Department of Haematology, University Hospitals Southampton NHS Foundation Trust*
[4]*Mayo Clinic Cancer Centre*
[5]*University of Bristol*
[6]*Curtin University*

Background: The myeloproliferative neoplasms (MPNs) including polycythaemia vera (PV), essential thrombocythaemia (ET) and primary myelofibrosis (PMF) are rare diseases which contribute to significant morbidity and mortality. Comparisons between reported symptoms of MPN cases and those of the general population have not been reported.
Method: The myeloproliferative neoplasm symptom assessment form (MPN-SAF) is a reliable and validated clinical tool used for assessing MPN patient symptom burden. A pilot case-control study of MPN, called the 'MyelOproliferative neoplasmS: An In-depth Case-Control (MOSAICC) study', recruited MPN patients and controls in Belfast, Northern Ireland and Southampton, England. The MPN-SAF was completed by cases and the first time General Practice or non-blood relative/family controls. Mean symptom scores were compared between cases ($n = 106$) and controls ($n = 124$). Mean scores in cases were then compared to published data on 1552 MPN patients from the Mayo Clinic, USA.
Results: MPN cases had significantly higher mean scores than controls for 26 of the 27 symptoms measured ($P < 0.05$) with fever being the exception ($P = 0.056$). Fatigue was the most common symptom in cases and controls (92.4% and 78.1% respectively). Patients with PMF reported the worst symptomatic burden followed by PV and lastly ET. Female MPN patients suffered worse symptomatic burden than males ($P < 0.001$). Compared to MPN cases in the USA, MOSAICC cases reported similar symptom burden but reported lower satiety ($P = 0.046$).
Conclusions: This study highlights the significant morbidity experienced by MPN cases patients and the similarities between cases in the UK and USA, highlighting the need to manage disease burden in these cases. For the first time the MPN-SAF has been shown to be a good discriminatory tool to assess the extent of symptoms in MPN patients.

Abstract P-115

Life After Prostate Cancer Diagnosis (LAPCD)

Amy Downing[1], Penny Wright[1], Richard Wagland[2], Eila Watson[3], Hugh Butcher[4], Luke Hounsome[5], Conan Donnelly[6], Therese Kearney[6], Rebecca Mottram[1], Majorie Allen[1]
[1]*University of Leeds*
[2]*University of Southampton*
[3]*Oxford Brookes University*
[4]*User representative*
[5]*South West Knowledge & Intelligence Team, Public Health England*
[6]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*

Background: Prostate cancer and its treatment may impact physically, psychologically and socially, affecting the health-related quality of life (HRQL) of men and their partners/spouses. The LAPCD study aims to:
- describe the HRQL of men with prostate cancer using qualitative and quantitative methods;
- explore if and how their HRQL is associated with or predicted by disease, treatment and/or patient characteristics with a view to inform healthcare policy and service delivery;
- describe levels of patient empowerment and explore the interaction between patient empowerment and HRQL;
- undertake a study of men without prostate cancer to determine levels of symptoms in the community for comparison.

Methods: We will survey prostate cancer survivors in all four UK countries diagnosed within a 24-month timeframe, between 15–39 months post-diagnosis, identified through can-

cer registration systems (~100 000). Men will be surveyed twice, 12 months apart, to determine changes in outcomes over time. We plan to survey second de novo cohorts once and will investigate the acceptability of online survey tools. To ensure detailed understanding of issues of importance, we will interview a sample of men who complete the survey (~100) along with a small number of partners/spouses (~20). We have developed a comprehensive Patient Reported Outcome Measure (PROM) using generic and specific instruments with proven psychometric properties and relevance in national and international studies. The outcome data will be linked with administrative health data (e.g. treatment information from hospital data).
Reporting plans: The first cohort will receive surveys in June 2015 with first results available late 2015. Using traditional and innovative methods we will ensure our results are available to men and their partners/spouses, the funders, the NHS, social care, voluntary sector organisations and other researchers. This 3-year study will provide data to steer service improvements, produce information to help men when making treatment decisions, and inform future research. This study is funded by Prostate Cancer UK and the Movember Foundation.

Abstract P-116

Exploration and analysis of free-text responses from the 2013 Wales Cancer Patient Experience Survey (WCPES)

Richard Wagland[1], Michael Bracher[1], Jessica Corner[1]
[1]*Faculty of Health Sciences, University of Southampton*

Background: The Cancer Patient Experience Survey (CPES) was first conducted in Wales between 01/06/12 and 30/03/13. Almost all cancer patients aged ≤16 years undergoing active treatment as inpatients or day cases were invited to participate with a 69% (n = 7352/10 945) response rate. A free-text box at the end of the survey invited respondents to provide comments on aspects of their care that were either particularly good or that could be improved, and for any other comments. The aim of this study was to explore prevalent themes within this data.
Method: A population-based postal survey. Data were entered into NVivo10 and a comprehensive thematic content analysis conducted on all comments.
Results: In total 63.5% (4672/7352) of survey respondents provided 6131 separate free-text responses. Of these, 3818 (62.2%) were positive comments and 2313 (37.7%) negative, a ratio of 0.6:1. Positive comments tended to be less specific than negative comments. Positive comments outweighed negative comments in all categories except experience of GP services, with a 1:1.5 positive to negative ratio. Despite predominantly positive comments, areas of most concern included: the quality of staff-patient communication; the importance of key workers and nurse specialists as points of contact; reported delays to diagnosis, investigations and treatment; sufficient patient preparation concerning treatment side-effects and self-management strategies; the need for emotional and supportive care; informational, management and relational continuity of care; long appointment waiting times; sufficient staffing levels; noisy wards during the night; car parking charges; adequate transitional care between primary and secondary care; and limited post-treatment services.
Conclusions: This first analysis of a national sample of CPES free-text comments complements formal closed questions by allowing patients to indicate issues that concern them most, providing important insights into patient experience. A high response rate indicates patients actively engage with opportunities to provide comments relating to their experiences of care.

Abstract P-117

Living with and beyond gynaecological cancer: descriptive summary of the gynaecological cancer PROMs pilot survey

Matthew Barclay[1], Nick Wood[2], Anne Lanceley[3], Jason Poole[1], Jo Partington[4], Maureen Dowling[4], Andrew Nordin[5]
[1]*Public Health England*
[2]*Lancashire Teaching Hospitals NHS Foundation Trust*
[3]*University College London*
[4]*NHS England*
[5]*East Kent Hospitals University Foundation Trust*

Background: Relatively little is known about quality of life in representative cohorts of people living with and beyond cancer outside of the context of clinical trials. In late 2013, NHS England commissioned pilot Patient Reported Outcome Measures (PROMs) surveys of women in England who had been diagnosed with cervical, ovarian or uterine cancer. This presentation describes results of the pilot PROMs survey.
Methods: The survey used PROMs developed by members of the British Gynaecological Cancer Society and the National Cancer Intelligence Network. These included, with permission, measures for quality of life, general health and cancer-specific outcomes from EQ-5D, the Social Difficulties Inventory and several questionnaires developed by the European Organisation for Research and Treatment of Cancer. For each cancer site, 1252 women were contacted. Questionnaires were sent out between February and April 2014.
Results: Between 39% and 55% of women contacted responded to the survey, with differences in response rates by demographic factors, differing by cancer site. On a 7-point scale, where 7 was excellent, most women with each cancer rated their overall health at 5 or better (73–81%) and even more rated their overall quality of life at 5 or better (74–82%). However, a majority of women agreed or strongly agreed with the statement "I have fears about my cancer coming back" (52–74%). Between a fifth and two fifths would have found more advice on the psychological or emotional aspects of living with and after cancer helpful, with a similar proportion wanting more advice about physical aspects.
Conclusion: PROMs surveys for gynaecological cancer are a useful tool to understand the experience of women with gynaecological cancers. Further investigations of these data are planned, linking with interested cancer charities. Acknowledgements Thanks to Laurence Bruce for his help with this analysis.

Abstract P-118

Understanding greatest areas of patient need throughout the blood cancer journey

Lauren Dias[1], David Henderson[1]
[1]*Leukaemia & Lymphoma Research, Holborn*

An estimated 230 000 people in the UK are living after a diagnosis of blood cancer or closely related condition. Behind these numbers are patients and families facing blood cancer, each with their own needs. Our Prioritisation of Patient Need (PPN) programme aims to understand the needs and experiences of blood cancer patients. PPN was initiated to understand blood cancer patient need in a series of qualitative and quantitative work. As part of the quantitative analysis, we conducted an online survey with 1725 people personally affected by blood cancer, including 1029 patients. The survey aimed to identify greatest areas of need – overall, and across different stages in the patient journey. This quantitative work was complemented by 19 focus groups and 7 in-depth patient interviews. The survey highlighted that a high proportion of blood cancer patients had a need for psychological/emotional support. When asked to spontaneously identify their greatest need across the patient pathway – the need for psychological and emotional need was highest with nearly 30% of patients mentioning this as a need. When prompted, around 80% of patients surveyed, mentioned a need for psychological/emotional support at every stage of the patient journey. Patients have highlighted this as an area they feel is also lacking professional provision and support they can access; in fact 44% of blood cancer patients surveyed, who received assistance for this need, did so through family and friends. This need for psychological/emotional support was also mentioned in every focus group and in-depth interview conducted as part of PPN. The results highlighted by the survey have shown that psychological support is a clear need and affects blood cancer patient experience. The next phase of PPN will look at existing provision available and how to raise awareness of these services in the blood cancer population.

Abstract P-119

Prevalence and predictors of procedure-related distress in men undergoing prostate biopsy

Eileen Morgan[1], Frances J Drummond[2], Finian Bannon[1], Heather Kinnear[1], Anna Gavin[1], Linda Sharp[2,3]
[1]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[2]*National Cancer Registry*
[3]*Newcastle University*

Background: In developed countries, more men are diagnosed with prostate cancer than any other cancer. These men, and many others – including those with raised PSA test results and/or urinary symptoms – will have undergone a prostate biopsy. Although evidence is accumulating on the psychological impact of other diagnostic procedures, little is known about prostate biopsy. This study aimed to: quantify prevalence of, and identify factors associated with, procedure-related distress in men undergoing prostate biopsies.
Method: 811 men received questionnaires 4–6 weeks post-biopsy in four cancer centres (Republic of Ireland, 4; Northern Ireland, 2). Procedure-related distress was measured using the Impact of Event Scale and a score of ≥9 considered significant distress. Logistic regression was used to identify significant predictors of distress.
Results: 335 men completed questionnaires. Overall 49% had significant distress; this was higher in men with confirmed cancer (59%) and those still under investigation or unaware of results (54%) than those without cancer (35%; $P < 0.001$). In an adjusted model, the risk of significant distress was almost 3-times higher in men with a cancer diagnosis (OR 2.95, 95% CI: 1.66–5.25) and those still undergoing investigation (OR 2.66, 95% CI: 1.47–4.81) than men without cancer. Men who reported that they were sometimes (OR 3.24, 95% CI: 1.90–5.54) or often (OR 11.10, 95% CI: 4.50–27.38) anxious about their health also had increased risk of distress.
Conclusions: Significant procedure-related distress was common in men after prostatic biopsy, suggesting that some men might benefit from additional support.
Acknowledgements: The authors thank the clinical teams who facilitated recruitment and Prostate Cancer UK, the Health Research Board and the R&D office of NI Public Health Agency for funding the study. The NI Cancer Registry is funded by the NI Public Health Agency and the National Cancer Registry Ireland by the Department of Health.

Abstract P-120

Inclusion of a lottery scratch card was more effective than entry into a prize draw in increasing questionnaire response among prostate cancer survivors, identified from cancer registries

Frances Drummond[1], Eamonn O'Leary[1], Linda Sharp[1]
[1]*National Cancer Registry Ireland*

Background: The number of cancer survivors is growing globally and there is extensive interest in investigating their experiences and patient-reported outcomes (PROMs). Postal surveys have been used to collect PROMs data among patients and survivors, and cancer registries have proven to be valuable, population-based sampling frames. Non-response can pose many problems, therefore it is crucial to identify strategies to maximise response. We compared the effect of two modest monetary incentives on postal questionnaire response among prostate cancer (PCa) survivors and assessed the relative cost-effectiveness.
Methods: PCa survivors in Ireland, 1.5–18 years post-diagnosis, identified from the National Cancer Registry Ireland, were randomised to the (i) 'lottery' arm (a €1 lottery scratch card sent with the questionnaire ($n = 2413$)) or (ii) 'prize arm' (entry into a draw upon return of a completed questionnaire ($n = 2407$)). Impact of interventions on response overall, and by survival period ("short-term"; <5 years post-diagnosis, "long-term"; ≥5 years post-diagnosis) was compared, as was cost-effectiveness.
Results: Response rate was 54.4%. Response was higher among younger men ($P < 0.001$) and those with earlier stage disease ($P = 0.002$). A modest 2.6% higher response rate was observed in the lottery compared to the prize arm (multivariate Relative Risk (RR) = 1.06, 95% CI: 1.00–1.11). When stratified by survival period, higher response in the lottery arm was only observed among long-term survivors (multivariate RR = 1.10, 95%CI: 1.02–1.19; short-term survivors: RR = 1.01, 95% CI: 0.94–1.09). Costs per completed questionnaire were €4.54 and €3.57 for the lottery and prize arms, respectively.

Compared to the prize arm, cost per additional questionnaire returned in the lottery arm was €25.65.
Conclusion: Although more expensive, to optimise response to postal questionnaires among cancer survivors, researchers might consider Inclusion of a lottery scratch card.
Acknowledgements: The study was funded by Health Research Board and Prostate Cancer UK. The National Cancer Registry Ireland is funded by the Department of Health.

Abstract P-121

Challenges of establishing a population-based patient-reported outcomes study (PROMs) using national cancer registries across two jurisdictions; The Prostate Cancer Treatment, your experience (PiCTure) Study

Frances Drummond[1], Heather Kinnear[2], Conan Donnelly[2], Eamonn O'Leary[1], Katie O'Brien[1], Richeal Burns[3], Anna Gavin[2], Linda Sharp[1]
[1]*National Cancer Registry Ireland*
[2]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[3]*National University of Ireland, Galway*

Background: The number of cancer survivors is growing globally. There is extensive interest in investigating their patient-reported outcomes (PROMs), and cancer registries are valuable, population-based sampling frames. We describe the challenges in establishing an international PROMs study among prostate cancer (PCa) survivors, up to eighteen years post-diagnosis, across countries with different healthcare systems and ethical frameworks.
Methods: A cross-sectional, postal survey of PCa survivors sampled and recruited via two population-based cancer registries in Republic of Ireland (RoI) and Northern Ireland (NI). Healthcare professionals (HCP) evaluated eligibility to participate. Questionnaires contained validated instruments to assess health-related-quality-of-life (HRQoL) and psychological wellbeing. Outcome measures included registration completeness, predictors of eligibility and response, data missingness, unweighted and weighted PROMs.
Results: PCa registration was 80% (95% CI: 75–84) and 91% (95% CI: 89–93) complete two years post-diagnosis in NI and RoI, respectively. Of 12 322 survivors sampled, 53% (n = 6559) were eligible following HCP screening. In multivariate analysis, significant predictors of eligibility were being; ≤59 years at diagnosis ($P < 0.001$), short-term survivor (<5 years post-diagnosis; $P < 0.001$), and from RoI ($P < 0.001$). 3348 completed the questionnaire (54% response rate). 13% of men, or their families, called the study freephone, with queries, for assistance with questionnaire completion or to talk about their experience. Significant predictors of response in multivariate analysis were being; ≤59 years at diagnosis ($P < 0.001$) and from RoI ($P = 0.016$). Weighted and unweighted mean HRQoL scores were similar, as were weighted and unweighted prevalences of depression, anxiety and distress.
Conclusions: Using cancer registries as sampling frames; we amassed one of the largest, international, population-based dataset of prostate cancer survivors. We highlight lessons which could inform future PROMs studies, including utilizing GPs to assess eligibility and providing a freephone service.
Funding: Health Research Board (RoI), Prostate Cancer UK (NI), NCCP (RoI), R&D office of NI Public Health Agency (NICR), Department of Health (NCRI).

Abstract P-122

Keeping the Customer Satisfied #1: is taking part in research associated with better experience of care? Findings from the 2013 National Cancer Patient Experience Survey

Richard Stephens[1], Carolyn Morris[1], Robert West[2], Matthew Baker[1], Ekaterini Blaveri[3], Rachel Brannen[3], Sheila Fisher[5], Jane Hanson[4], Sue Pavitt[2], Reg Race[6]
[1]*NCRI Consumer Liaison Group*
[2]*Leeds Institute of Health Sciences, University of Leeds*
[3]*National Cancer Intelligence Network*
[4]*NIHR Local Clinical Research Network: Kent Surrey Sussex*
[5]*NIHR Clinical Research Network Cancer*
[6]*Quality Health*

Background: The National Cancer Patient Experience Survey 2013 includes data on 68 737 patients from English NHS Trusts providing acute cancer services – a response rate of 64%. NCPES 2013 asked about the patient experience of cancer research: "Have you seen information (leaflets, posters, information screens etc) about cancer research in your hospital?" "Since your diagnosis has anyone discussed with you whether you would like to take part in cancer research?" "If so did you then go on to take part in research?" An overarching question asks patients to rate their care. We wanted to test if taking part in research is associated with better experience of care
Method: Our analyses look at patients' overall rating of their care and participation in research, tested with Pearson's chi-squared test for association.
Results: 30% report having a discussion about taking part in research, with 64% going on to participate. Our analyses show a statistically significant association between research participation and a better patient experience. Among those who are not asked, 87.2% rate their care as excellent or very good. This percentage increases to 90.2%when patients are asked about research but do not go on to participate, and to 91.9% if they are asked and do participate.
Conclusion: There is an association between how people rate their care and how they rate their participation in research. Having a discussion is also associated with better experience, though the association is less strong. The research community has long held that participation in research is linked to better patient experience, but until now it has not been possible to evidence this on such a large scale. These findings support the view that opportunities for research participation should be integral to discussions with patients of their treatment options.

Abstract P-123

Keeping the customer satisfied #2 It Is OK To Ask – who are we asking, and who participates? Further findings from the National Cancer Patient Experience Survey 2013

Richard Stephens[1], Carolyn Morris[1], Robert West[2], Matthew Baker[1], Ekaterini Blaveri[3], Rachel Brannen[3], Sheila Fisher[5], Jane Hanson[4], Sue Pavitt[2], Reg Race[6]
[1]*NCRI Consumer Liaison Group*
[2]*Leeds Institute of Health Sciences, University of Leeds*
[3]*National Cancer Intelligence Network*
[4]*NIHR Local Clinical Research Network: Kent Surrey Sussex*
[5]*NIHR Clinical Research Network Cancer*
[6]*Quality Health*

Background: NCPES 2013 includes data on 68 737 recently treated patients from the 162 NHS Trusts in England providing acute cancer services. This represents a response rate of 64%. Questions about the patient experience of cancer research include "Since your diagnosis has anyone discussed with you whether you would like to take part in cancer research?" "If so did you then go on to take part in research?" Patient's responses can be analysed by gender and age, with patients' ages grouped 16–50; 51–65; 66–65; 76+.
Method: Chi – squared test was used to test for association between gender and having a discussion & going on to participate; and similarly for association with age.
Results: Who has a discussion? Our findings show no significant difference by gender: Female 30.7% Male 29.5%. Age shows significant variation ($P < 0.001$): 36.7% 16–50 year olds report a discussion; 36.5% of 51–65 year olds; 30.5% of 66–75 year olds & 18.8% of those aged 76+. Who then goes on to take part? Gender again shows little difference: of Females who had a discussion, 62.4% participated in research; Males 65.5%. Age differences are significant, with 68.3% of 16–50 year olds going on to participate, 66.9% of 51–65 year olds; 62.2% of 66–75 year olds & 56% of those 76+. We are now examining "conversion rates" for each age group.
Conclusion: There is little variation by gender in whether patients report a conversation about taking part in research. There is a clear decline in being asked with age: over the age of 75 there are both fewer discussions and less participation. However over half the patients approached do participate. The influences of tumour type, co-morbidities, socio-economic status, ethic/cultural background, location within the UK, all need further analysis.

Abstract P-124

Keeping the Customer Satisfied #3 It's OK to ask – who are we asking? Variations by type of cancer further findings from the National Cancer Patient Experience Survey

Richard Stephens[1], Carolyn Morris[1], Robert West[2], Matthew Baker[1], Ekaterini Blaveri[3], Rachal Brannen[3], Sheila Fisher[5], Jane Hanson[4], Pavitt Sue[2], Reg Race[6]
[1]*NCRI Consumer Liaison Group*
[2]*Leeds Institute of Health Sciences, University of Leeds*
[3]*National Cancer Intelligence Network*
[4]*NIHR Local Clinical Research Network: Kent Surrey Sussex*
[5]*NIHR Clinical Research Network Cancer*
[6]*Quality Health*

Background: The National Cancer Patient Experience Survey (NCPES) 2013 includes data on 68 737 patients from English NHS Trusts providing acute cancer services – a response rate of 64%. Patient responses are grouped, inter alia, by 14 types of cancer. NCPES 2013 asked about the patient experience of cancer research. We wanted to identify if opportunities to participate in research vary according to their type of cancer.
Method: One of the research questions was "Since your diagnosis has anyone discussed with you whether you would like to take part in cancer research?" The Chi-squared test was used to test for association between cancer site and reporting a discussion about research.
Results:

All cancers:	
Don't know	5.3%
No	64.6%
Yes	30.1%

Results for 14 Tumour sites: YES Urological Cancers 15% Skin 17%, Gynacological 27% Head &Neck 27%, Lung, 30%, Colorectal & Lower GI 31% Other 31%, Sarcoma 32%, Prostate 33%, Upper GI 33% Haematological 34% Breast 35% Brain & CNS Cancers 36%, variations significant at the $P < 0.001$ level.
Conclusion: Patients' opportunities to participate in research vary according to their type of cancer. Skin and urological cancer patients are asked signficantly less often than others. These findings prompt the question: how far do these variations reflect variations in the NIHR CRN Cancer portfolio or other types of research eg tissue banking? We have demonstrated elsewhere (abstract "Keeping the Customer Satisfied" #1) significant association between having a discussion and patients' rating of their care. So a further question arises: what more can be done to widen access to research to those groups with less access? Inequalities between cancer types are likely to attract interest from the new Local Clinical Research Networks, from Clinical Studies Groups, from Patient Groups & Cancer Charities, and from Commissioners and Cancer Peer Reviewers.

Abstract P-125

Keeping the customer satisfied #4 – we need to talk! responses from patients to questions on research in The National Cancer Patient Experience Survey 2014

Richard Stephens[1], Carolyn Morris[1], Robert West[2], Matthew Baker[1], Sheila Fisher[3], Jane Hanson[4], Sue Pavitt[2], Karen Inns[3]
[1]*NCRI Consumer Liaison Group*
[2]*Leeds Institute of Health Sciences, University of Leeds*
[3]*NIHR Clinical Research Network Cancer*
[4]*NIHR Local Clinical Research Network: Kent Surrey Sussex*

Background: NCPES 2014 includes data on 70,141 recently treated patients from the 153 NHS Trusts in England that provide acute cancer services, a response rate of 64%. It is the third year that questions on research awareness were asked, with the question on "discussion" having been asked in all three years, and the others asked in both 2014 and 2013.
Method: Questions about the patient experience of cancer research in 2014 & 2013 were: "Have you seen information (leaflets, posters, information screens etc.) about cancer research in your hospital?" "Since your diagnosis has anyone discussed with you whether you would like to take part in cancer research?" "If so did you then go on to take part in research?"
Results: Findings in 2014 (2013 in brackets) In 2014 more patients saw information about research 86% (85%) Fewer had a discussion 31% (32%) And fewer then went on take part: 63% (64%) All three research questions show statistically significant variations between Tumour types and between Trusts. For the question asking whether patients had a discussion the range by Tumour type is from 14% to 37% and by Trust from 10% to 61%
Conclusions: The variations between Trusts remain wide, and there is an inequality of access to research opportunities for cancer patients. There are opportunities for all those working as part of the NIHR's Local Clinical Research Networks to address this. W have shown elsewhere (Keeping The Customer Satisfied#1) shows that patients offered research opportunities are more likely to report higher satisfaction levels with their care, and even more likely to do so if they go on to participate in research. The NIHR's annual Ok to Ask campaign offers the NHS opportunities to promote research participation as an aspect of care.

Abstract P-126

Do men regret undergoing a diagnostic prostate biopsy?

Catherine Coyle[1], Finian Bannon[2], Eileen Morgan[2], Frances Drummond[3], Linda Sharp[3], Anna Gavin[2]
[1]*Public Health Agency*
[2]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[3]*National Cancer Registry Ireland*

Understanding men's experience of prostate biopsy is important as the procedure is common, invasive, carries potential risks and may need to be repeated. Decisional regret has been examined in the context of decisions about prostate cancer treatment; however it is not known whether men also regret undergoing biopsy. Men attending four clinics in RoI and two in NI were given a questionnaire to explore their experience of biopsy. Regret was measured on a Likert scale asking how much men agreed with the statement "It [the biopsy] is something I regret." Men responding to the biopsy (n = 335) had a mean age of 63.4 years. 75% were married or co-habiting. 75% of men finished education at primary or secondary school level. 40% were working and 40% were retired. 89% experienced at least one physical side effect following biopsy. 35% men received a result positive for cancer and 33% negative for cancer; the remainder had uncertain results or had not yet received results. There was a low level of regret expressed overall; 16% of respondents. Levels of regret did not vary by cancer status, whether men had experienced physical side-effects or by socio-demographic variables. Men who have recently undergone prostate biopsy do not express significant levels of regret. As biopsy is the mainstay of cancer diagnosis and men may require more than one procedure this finding is reassuring. However, it does not negate the need for careful counselling and provision of information to men before and after prostate biopsy.
Acknowledgements: The authors thank the clinical teams, Prostate Cancer UK, the Health Research Board and the R&D office of NI Public Health Agency (PHA) for funding the study. The NI Cancer Registry is funded by the NI PHA and the National Cancer Registry Ireland by the Department of Health.

Abstract P-127

Physical side-effects in men undergoing prostate biopsy: an all-Ireland study

Anna Gavin[1], Eileen Morgan[1], Frances Drummond[2], Catherine Coyle[3], Linda Sharp[2,4]
[1]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*
[2]*National Cancer Registry Ireland*
[3]*Public Health Agency*
[4]*Recently moved to Institute of Health and Society, Newcastle University*

Introduction: Understanding men's experience of prostate biopsy, a common procedure, is important. We investigated the physical side effects men report following biopsy.
Methods: Men (n = 811) who attended either of two clinics in Northern Ireland (NI) or four clinics in the Republic of Ireland (RoI) 2012–2013 and were 4–6 weeks post-biopsy completed a questionnaire to explore their experience of prostate biopsy. Questions were asked about range and severity of physical side-effects (including fever, pain, bleeding, urinary retention and erectile dysfunction); and whether medical care at A&E, inpatient, or GP was required and if they lost earnings as a result.
Results: 335 men responded. 273 (81.5%) were under 65 and 62 (18.5%) older. 35% of men were positive for cancer and 33% negative; the remainder had uncertain results or did not know. 25% of participants had previously had another prostate biopsy. Side effects were similar in men who had a previous biopsy (92%) and those having first biopsy (87%). 88% reported at least one physical side effect of biopsy: 43% reported pain (15% severe); 80% bleeding (7% severe); 19% erectile dysfunction; and 16% urinary retention. Frequency of urinary retention was similarly in older and younger men but reported as severe more often by younger (55%) than older men (32%) and was more common in men with urinary problems before biopsy (24%) than men who had none (7%). 22% of men with side effects sought medical attention, 48% of

which with their GP while 9% attended casualty. Of those in paid work, 20% lost earnings as a result of their biopsy.
Conclusion: Men frequently report physical side-effects of prostate biopsy. The procedure is very common and men should be adequately prepared for side effects. Information such as this may be used in the development of information provided to men undergoing the procedure. .

PRIMARY CARE

Abstract P-128

Emergency colorectal cancer presentations: can they be prevented in primary care?

Jennie Grainger[1], Zaid Hamoodi[1], Hayley Fowler[1], Raj Rajaganeshan[1]
[1]*St Helens and Knowsley NHS Trust*

Introduction: Survival from colorectal cancer (CRC) is largely dependant on the stage of their cancer at the time of diagnosis, with a higher mortality seen in patients presenting as an emergency. Quite often patients who do present as an emergency have had symptoms which have persisted for a significant period of time without investigation. We wanted to analyse our emergency admissions to try and identify any factors that may reduce emergency presentations.
Methods: A retrospective analysis was performed of all CRC patients who presented as an emergency at Whiston hospital during 2012. Patients who were not operated on were excluded.
Results: In total we identified 29 patients who had emergency surgery. The mean age was 72.6 years (range 23–89 years). 76% of patients were admitted through A&E, of which the majority (79%) presented with abdominal pain. 86% of patients had had symptoms prior to admission, with the duration of symptoms ranging from 6 days to 1 year. 59% of patients had consulted their GP with these symptoms at some point leading up to admission. Of these 71% had consulted their GP more than once, with 35% consulting 5 times or more. Of those who had consulted their GP, 29% were referred to out-patients for an opinion, of which all but one were referred on a rapid access basis. Of the patients who had consulted their GP, 35% had an investigation organised on an out-patient basis with CT being the most common investigation (83%). 60% (3/5) of the CT scans were reported as normal.
Conclusion: Most patients who present as an emergency for CRC have had persistent symptoms for up to a year and have consulted their GP previously.

Abstract P-129

Exploring the potential to link primary care data with the national cancer registry of the Welsh Cancer Intelligence and Surveillance Unit

Christopher Johnson[1], Janet Warlow[2], Ceri White[2], Dyfed Wyn Huws[2]
[1]*Public Health Wales*
[2]*Welsh Cancer Intelligence and Surveillance Unit, Public Health Wales*

Background: Data captured by the Welsh Cancer Intelligence and Surveillance Unit's registry is limited to secondary care and mortality. However, most patient contacts occur in primary care, where symptoms are first evaluated and richer data is collected. Currently, little information about a patients' path to diagnosis, co-morbidities or risk factors for incidence or prognosis and path from diagnosis is available. The Welsh Government Cancer Delivery Plan prioritises the development of a cancer data warehouse with linked datasets. Consequently we aimed to explore the suitability and feasibility of obtaining, linking and using primary care data for cancer health intelligence.
Method: We reviewed the literature to identify potential primary care data uses for cancer intelligence. We identified primary care datasets in Wales. We systematically evaluated suitability for inclusion or linking to the cancer registry using a published evaluation tool.
Results: Primary care data could enable exploration of routes to and from diagnosis, the impact of co-morbidities along the patient's pathway, especially outcomes and treatment, as well as the emergence of comorbidity after diagnosis or treatment. Inequalities in health could be explored and the role of clinical and health behaviour risk factors examined. The only appropriate data source for routine inclusion within the cancer registry was the data held by Welsh GP practices. The systems developed for Welsh GPs would allow the routine extraction of the data which was considered to be almost universally available. Information governance issues were considered.
Conclusions: Subject to information governance and resource constraints, it would be feasible to access and link GP data in Wales to the national cancer registry as part of a cancer data warehouse. Given adequate analytic resources and formulation of the right questions to answer, the data could provide additional valuable cancer health intelligence to improve cancer prevention, services, survival and patient experience.

Abstract P-130

How can primary care be better involved in initiatives to improve uptake of cancer screening programmes?

David Linden[1,2]
[1]*Scottish Government*
[2]*Macmillan Cancer Support*

Background: The GMS contract already remunerates GP practices to achieve participation in the cervical screening programme, and many practices directly provide women opportunities for smear taking at the practice premises. But GPs have less involvement in the breast and colorectal screening programmes, although arguably an important role to play in informing patients about the benefits and risks of participation.
Methods: The Scottish Government Detect Cancer Early Programme's whole systems approach used a component of the GMS contract in Scotland to capitalise on this previously untapped potential, negotiating an enhanced service type initiative that rewarded practices to develop an action plan and achieve an increase in bowel screening programme participation rates for their practice population.
Results: The action plans described how non-responders in hard-to-reach groups could be encouraged to make an informed decision about participating in bowel screening. Practices were remunerated on a pro-rata banded basis dependent on the decrease in non-participation rates that was achieved, weighted according to size of eligible population and current participation rates. 83% of GP practices in Scotland signed up to the 2-year initiative to improve shared decision making with patients. An IT solution to enable primary care

to be notified of who in the practice population is eligible for the bowel screening programme, non-responders and negative results was developed in parallel. The initiative has contributed to an increase of over 4000 bowel screening kits returned every month and, based on the most up-to-date data available, but which does not yet include the full time period during which the contract initiative has been operational, there has already been an increase in the bowel screening programme participation rate of 1.2% nationally. Furthermore this increase is proportionately greater amongst men and amongst deprived communities.
Conclusions: Participation of primary care in promoting screening contributes to improvements in uptake rates.

Abstract P-131

Trends in usage of the urgent GP referrals for suspected cancer system

Matthew Barclay[1], Carolynn Gildea[1], David Meechan[1]
[1]*Public Health England*

Background: Early diagnosis is an important part of the cancer outcomes strategy and, within this, the urgent GP referral for suspected cancer (two week wait – 2ww) system plays a key role. Over recent years there have been many initiatives aimed at improving awareness and early diagnosis, for example, the Be Clear on Cancer awareness campaigns. It is clear that these initiatives have led to changes in the usage of the two week wait referral system, at least in the short-term. However, long-term changes and trends have only been reported in limited settings. This analysis considers and quantifies how usage of the two week wait referral system has changed over the last five years.
Method: Cancer Waiting Times (CWT) data were used to derive three measures, which 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 – percentage of 2ww referrals resulting in a diagnosis of cancer Detection rate – percentage of CWT recorded cancers which resulted from a 2ww referral Analysis quantifies trends in the referral, conversion and detection rates, from 2009 until March 2014.
Results: There has been a large increase in the number of two week wait referrals, with 50% more referrals in 2013/14 than 2009/10. There was a substantial increase in the detection rate, from 43% to 49%, and the conversion rate decreased from 11.3% to 9.5%
Conclusions: Many factors and initiatives have affected usage of the two week wait referral system in recent years. There is evidence of large differences in the number of referrals made, and in how these referrals relate to cancer diagnoses.
Acknowledgements: Cancer Waiting Times data was obtained from the National Cancer Waiting Times Monitoring Dataset, provided by NHS England.

Abstract P-132

General Practice Profiles for Cancer: how variable are the practices and can we reliably judge their diagnostic performance?

Gary Abel[1], Catherine Saunders[1,2], Georgios Lyratzopoulos[1,3]
[1]*Cambridge Centre for Health Services Research, University of Cambridge, UK*
[2]*RAND Europe*
[3]*Health Behaviour Research Centre, University College London*

Background: The General Practice Profiles for Cancer aim to motivate improvements in diagnostic activity and referral pathways for cancer in primary care. Better understanding of the size of variation and the reliability of practice-level measures is needed to optimise how information is interpreted and used for quality improvement purposes.
Methods: We analysed publicly reported General Practice Profiles for Cancer data. Using appropriate mixed effect regression models we characterised the size of overall practice variation for each indicator, accounting for age-sex differences in practice populations. Additionally, we calculated the Spearman-Brown reliability for different measures.
Results: In general, the size of practice variation for different indicators is moderate (e.g. typically up to 2-fold variation between the 75th and the 25th centiles of the distribution of practice scores, and typically up to 3.5-fold variation between the 90th and 10th centiles). Age-sex differences in practice populations explain some of the variation, differentially so for various measures. Measures relating to incident cancer cases (e.g. % of cancer cases detected via emergency presentation or via two-week wait pathways) generally have inadequate reliability [below the minimum required threshold of 0.70 and well below that required for high stake applications (0.90)]. In contrast, process measures relating to broader populations (e.g. rate of endoscopy investigations, or % uptake of screening invitations) have acceptable or high reliability and may have value as performance indicators.
Conclusion: Judging the diagnostic quality of general practices using indicators included in the General Practice Profiles for Cancer should focus on diagnostic process measures (e.g. number of patients investigated). This is because they have very good reliability. In contrast, diagnostic outcome indicators (e.g. patients diagnosed with cancer via two-week wait or other pathways) are not reliably measured at practice level, and great caution is advised in their use.

Abstract P-133

A preliminary examination of linked data from the West Midlands breast cancer registry, breast screening programme and primary care

Melanie Morris[1], Bernard Rachet[1], Laura Woods[1]
[1]*London School of Hygiene and Tropical Medicine*

Background: Analyses of cancer registry data have shown social inequalities in breast cancer survival. Differential delays in diagnosis are a hypothesised cause of these inequalities. Previous work has examined differences in the delays between social groups before presenting to a GP and in the number of consultations before diagnosis. We have used prospectively-collected primary care data linked to cancer regis-

tration data in order to examine variations in pre-diagnostic consultations and survival time.
Methods: Cancer registry data for women aged 50–70, diagnosed with primary breast cancer from 1989 were linked to screening, deprivation and mortality data, as well as the Clinical Practice Research Datalink (CPRD) up to 2006. 786 of around 38 000 women were fully matched.
Results: The sample compares well to the full cohort for extent of disease and age, but there were some differences by deprivation and screening history. The mean time from the last reported breast symptom to diagnosis was 32.7 days (SD = 62.6) for women with non-screen-detected cancer. This interval did not vary significantly by deprivation, age, BMI, smoking or alcohol consumption, but there was some evidence of variation by survival time. There was evidence of an association between the rate of non-breast consultations and survival time ($P = 0.001$) and extent ($P = 0.013$), with a rise in consultations in less-deprived women just before diagnosis.
Conclusions: Patterns of consultation appear to differ between groups. Less-deprived women, those with more localised disease and those who survive over five years may consult more frequently before diagnosis than others. These results need exploration using factor analysis and net survival modelling, taking account of background mortality and other variables. They point to interesting differences, however, in the way groups might be using primary care and how this might impact their diagnosis. Linked data have enormous potential for elucidating how consultation patterns might impact eventual survival.

SURVIVORSHIP/LATE EFFECTS OF CANCER AND TREATMENT

Abstract P-134

Surviving small cell lung cancer in three countries – an international comparison

Christine Park[2], Gwen Allardice[1], David Morrison[1]
[1]*West of Scotland cancer surveillance unit*
[2]*University of Glasgow*

Background: Survival from lung cancer in the UK is poorer than in many other European countries but it is not clear why. Later diagnosis, presence of co-morbidities or poorer quality of care may explain these geographic differences in lung cancer survival. Cancer registries often do not contain sufficient detail to explore these issues. A new prospective study "The Small Cell Lung Cancer (SCLC) Audit study" has recruited small cell lung cancer patients in Scotland, England and Germany with detailed information on demographics and cancer stage. Patients were followed-up every 6 months from diagnosis for 2 years.
Methods: This study aims to investigate the effect of characteristics such as age, deprivation, gender, and cancer stage and performance status on survival across the regions. It will test the hypotheses "Can geographic variations in survival be explained by differences in baseline characteristics?"
Results: 711 people were recruited from 9 centres in Scotland, England and Germany with diagnoses between 2009–2012. Data collection is ongoing but some preliminary results are available. There are significant differences in survival across centres; 6 month survival ranges from 30% to 54% with 12 month survival ranging from 11% to 32%. However there are also large differences among centres with respect to baseline characteristics such as stage of disease and presence of comorbidities which may account for these survival differences.
Conclusions: Differences in small cell lung cancer across centres have persisted for some years but few datasets contain enough information to look at survival while adjusting for factors such as co-morbidities. Analyses of this data is ongoing but studies such as this can shed light on explanations for these survival differences and hence possible ways to reduce them.

Abstract P-135

Outcome of critically ill patients with solid malignancies admitted by oncology to the intensive care unit at The Royal Free Hospital (London) between 2009 and 2014

Yanrong (Yani) Jiang[1], Robert Goldstein[2], Christina Thirlwell[2], Astrid Meyer[2], Tim Meyer[2], Roopinder Gillmore[2]
[1]*University College London Medical School*
[2]*Royal Free Hospital*

Background: Oncology patients have benefited from treatment advances but remain at risk of significant treatment-related toxicities. In recent decades, Oncologists have increasingly treated patients with co-morbid conditions and have greater lines of treatment available. Oncologists have higher expectations about the prognosis of cancer and are more inclined to escalate care when required. Consequently, patients with solid malignancies are increasingly admitted to the intensive care unit (ICU) when life-threatening events occur. We aimed to report the survival outcomes and prognostic factors of these patients.
Methods: We performed a retrospective study of the outcome of patients admitted by Oncologists to ICU at The Royal Free Hospital (2009–2014) by reviewing medical notes and the NHS Spine database.
Results: There were 18 patient admissions to ICU by Oncologists between 2009 and 2014, 83% (15/18) of the ICU-admitted patients had advanced non-curable disease. Their median age was 57.9 years (37–74 years). The most common reasons for ICU admission were septicaemia and respiratory failure. The mean length of ICU stay was 6.2 days (range 1–37 days). The hospital mortality rate was 16.7% (3/18), as three patients died after being admitted for respiratory support. The three patients being treated with curative intent survived their hospital admission. Furthermore, 33.3% (6/18) of the patients were alive 90 days post-hospital discharge. The longest survival time post-hospital discharge was 359 days for a patient with advanced prostate cancer admitted to ICU with septic shock and acute kidney injury.
Conclusions: The mortality rate for oncology patients admitted to ICU is similar to the reported ICU mortality rate in London Hospitals, 16.7% vs. 19%. Oncology patients who are admitted to ICU for the management of sepsis appear to have a better prognosis than patients admitted for respiratory failure in terms of a lower mortality rate and a longer median length of survival.

Abstract P-136

The impact of the glasgow improving the cancer journey service

Sandra McDermott[1]
[1]*Glasgow City Council*

Background: Improving the Cancer Journey (ICJ) is a 5 year programme developing a holistic needs assessment service for people affected by cancer in Glasgow, using a link worker approach to assess, review and connect clients to appropriate support services to address their needs. The use of link workers based in a social care environment rather than clinical staff to undertake the needs assessment is a new concept and is the first in the UK to adopt this approach. This service evaluation reviewed the impact of the implementation of the Improving Cancer Journey Service.
Method: The NHS Health Improvement Team undertook detailed research of 78 patient case files; 40 patients and 18 NHS staff members were interviewed. Format of the interviews were one to on and patients were selected on a randomised basis within specific cancer types. ICJ assessed 345 clients between 5th February 2014 and 31st January 2015. The number of concerns, onward referrals, and the pre and post intervention distress thermometer score were recorded
Results: From the 345 HNA's completed 3336 concerns were identified resulting in 1033 onward referrals. The average initial distress thermometer score fell by 50% following planned interventions. 47% of clients responded to the client survey with 94% rating the service as excellent and 70% attributing reduction in stress and improved quality of life to ICJ.
Conclusion: Although in the early stages of implementation, ICJ service can be considered as having a positive impact on the health and wellbeing of cancer patients living in Glasgow. Evaluating ICJ further into implementation will provide more evidence to the greater benefits to health and social care providers throughout the UK when considering adopting the ICJ integrated health and social care model.

Abstract P-137

Late effects of cancer and cancer treatment – the patient's perspective

Charlene Treanor[1], Michael Donnelly[1,2]
[1]*Centre for Public Health, Queen's University Belfast*
[2]*UKCRC Centre of Excellence for Public Health, Queen's University Belfast*

Background: Understanding the experience of late effects from the perspective of cancer survivors is essential to inform patient-centred care. This study investigated the nature and onset of late effects experienced by survivors and the manner in which late effects have affected their lives.
Method: Sixteen purposively selected cancer survivors participated in a qualitative interview study. The data were analysed inductively using a narrative schema in order to derive the main themes that characterised patients' accounts of late effects.
Results: Individual survivors tended to experience more than one late effect spanning a range of physical and psychological effects. Late effects impacted on relationships, working life, finances and the ability to undertake daily activities. Survivors reported experiencing psychological late effects from around the end of treatment whereas the onset of physical effects occurred later during the post-treatment period. Late effects were managed using formal health services, informal social support and use of 'well-being strategies'. Survivors engaged in a process of searching for reasons for experiencing late effects and struggled to make sense of their situation. In particular, a process of 'peer-patient comparison' was used by survivors to help them make sense of, or cope with, their late effects. There appeared to be an association between personal disposition and adaptation and adjustment to the impact of late effects.
Conclusions: Cancer survivors identified potential components for supported self-management or intervention programmes, as well important considerations in terms of peer comparisons, personal disposition and making sense of experienced late effects.

Abstract P-138

Action Cancer's Positive Living Programme: a therapeutic application of coaching

Caroline Hughes[1], Geraldine Kerr[1], Mary Morrow[1], Karen Clarke[1], Ruth Fleming[1]
[1]*Action Cancer*

Background: With 63 000 people in NI currently living with cancer and the introduction of government strategies changing the direction of care from hospital to community-based, there's a need for self-management support interventions that enable the person to move from trauma to growth, from hopelessness to hope and a new way of supporting independent living. Therefore, in 2011 Action Cancer initiated the Positive Living Programme (PLP), a coaching-based programme for those living with and beyond cancer. Delivered over two consecutive days, PLP utilises a life-coaching model to enable participants to 'Reflect, Refocus, Rebuild and Re-energise'. It's based on the Co-Active coaching model, integrating theories and tools from life-coaching, counselling, motivational interviewing, NLP and positive and neuro-psychology. The aim of this study is to highlight the application of coaching to a therapeutic setting and the perceived benefits experienced, as measured through Action Cancer's ongoing evaluation.
Methods: Clients attending the PLP complete a number of evaluation forms measuring mental wellbeing (the GHQ12 or WEMWBS) and a 'Positive You' (a bespoke, goal-focused measure of the self-perceived self). Data is collected 3 times: (1) beginning of the programme; (2) 1st follow-up occurs 3 weeks after the programme; (3) 2nd follow-up occurs three months after the PLP.
Results: This work is currently ongoing. Since 2011, 13 PLPs have been carried out with 181 participants. Evaluation data is still being collected to allow robust analysis, but the average GHQ12 score increased from 28 to 39 3 weeks following the programme.
Conclusions: Once data collection is complete, the effectiveness of the PLP can be fully examined. If analysis is reflective of the initial findings, the PLP is a viable and successful support service for those affected by cancer.

Abstract P-139

Using Electronic Holistic Needs Assessment (eHNA) data to explore the needs of people with cancer and how they are addressed

Kinga Kuczkowska[1], Amanda Watson[1], Andrew Brittle[1]
[1]*Macmillan Cancer Support*

Background: Development of services for people living with cancer (PLWC) should be informed by a clearly articulated understanding of needs and unmet needs of that group. Macmillan's Electronic Holistic Needs Assessment (eHNA) tool captures large amounts of information on the concerns and information needs of PLWC and actions taken to address them. Aggregated, these data can help identify themes of high needs, how these are expressed by different groups of local cancer populations and addressed by their clinicians.
Methods: Analysis of data from the eHNA online database, in the 12-month period of 01/09/13-31/08/14. Needs assessments in that period were carried out in 46 sites participating in the pilot programme, using four questionnaires.
Results: Physical concerns dominate among worries of PLWC using eHNA. These are followed by emotional concerns. 'Worry, fear or anxiety' is the single most frequently reported concern. Family concerns are the most highly ranked (average 7 out of 10). The ratio of clinician to patient action to address these is 5:1. 68% of clinicians' actions are information and advice giving during the assessment and care planning session. Meanwhile for patients 79% of actions are carried out after the session. Only 3% of the clinician's follow-up actions and 10% of the patients' follow-up actions relate to increasing their physical activity level, even though 23% of information needs relate to that area. Cancer type has the highest impact on the type of information needs and actions reported by PLWC, while concerns differ mostly by age.
Conclusions: The evidence base on the needs of PLWC although wealthy is patchy. Little evidence is available on the holistic needs of PLWC by small geographies. Using routinely collected data such as those from the eHNA can provide useful insights on the concerns and needs of local populations and facilitate local service planning and targeting.

Abstract P-140

Trajectories of quality of life, health and personal wellbeing up to two years following curative intent treatment for colorectal cancer: results from the UK ColoREctal Wellbeing (CREW) cohort study

Claire Foster[1], Joanne Havliand[1], Chloe Grimmett[1], Jane Winter[1], Deborah Fenion[1], Kimberly Chivers Seymour[1], Christine M May[1], Peter W Smith[2], Jessica Corner[1], Alison Richardson[1]
[1]*University of Southampton Faculty of Health Sciences*
[2]*University of Southampton, Southampton Statistical Sciences Research Institute*

Background: Cancer survivorship is a growing global concern and the current aftercare system does not sufficiently meet patients' needs. It is important to understand patterns of recovery in order to tailor aftercare appropriately. We examine trajectories of quality of life (QoL), health status and personal wellbeing in the first two years following colorectal surgery.
Method: Prospective cohort study of 1018 UK colorectal cancer patients. Questionnaires at baseline (pre-surgery), 3, 9, 15, 24 months. QoL (Quality of Life in Adult Cancer Survivors, QLACS), health status (EQ-5D), personal wellbeing (Personal Wellbeing Index), physical symptoms, anxiety, depression, self-efficacy, social support, socio-demographic and clinical/treatment characteristics were examined. Longitudinal analyses assessed change in QoL, health and wellbeing over time and predictors of distinct trajectories.
Results: QoL significantly improved, specifically from 15 months. Health status significantly improved, although 59% reported moderate/severe problems at 24 months. Personal wellbeing significantly declined; 35% reported reduced wellbeing at 24 months. Four distinct trajectories were found for QoL (QLACS Generic Summary Score), health status and personal wellbeing, from 5–7% in the poorest trajectories showing consistent problems to 30–40% in the best trajectories. Significant risk factors for the poorest QoL trajectory (versus best) were: higher deprivation, more comorbidities, stoma, worse symptoms, worse anxiety and depression, lower self-efficacy and social support. Predictors for health status and wellbeing trajectories were similar.
Conclusions: Results from this large representative study show that distinct recovery trajectories following surgery for colorectal cancer can be identified with risk factors. Different approaches to follow-up care are warranted and these results provide robust data regarding who is likely to need more intensive support, which will inform the development of risk-stratified follow-up management tailored to an individual's need. This provides NHS commissioners with cost-effective, comprehensive packages of care for this patient group. Funding: Macmillan Cancer Support

Abstract P-141

Bladder cancer recurrence; evidence of wide variation in England

Roger Kockelbergh[1], Erik Mayer[2], Luke Hounsome[3], Julia Verne[3]
[1]*University Hospitals Leicester NHS Trust*
[2]*Imperial College Healthcare NHS Trust*
[3]*Public Health England, Knowledge and Intelligence Team (South West)*

Background: Bladder cancer and particularly non-muscle invasive bladder is characterised by local recurrence. Cancer registries collect national data on death but not recurrence. Hence the data we have on recurrence is predominantly from randomised trials. We have used nationally collected NHS data to estimate recurrence patterns in England.
Method: Data from English cancer registries was merged with HES data using NHS number as a shared data item. Patients with ICD 10 codes C67 (pT1 or worse) and D414 (G1 and G2 pTa) were identified by Clinical Commissioning Group. Patients with a M42 code (TURBT or extirpation of a bladder lesion) between 84 and 183 days following diagnosis were considered to have had a recurrence.
Results: Recurrence (using our definition)varied between 0% and 28% by CCG of residence for C67 and D414 bladder cancer for January – June 2012
Conclusion: This methodology suggests wide variation in recurrence in England. This may be partly due to differences in practice for pT1 disease. We recognise potential pitfalls in this methodology which include TURBT for benign lesions, a mix of NHS and non NHS care and coding discrepancies. Nevertheless the scale of variation is unlikely to be explained wholly by these and further interrogation of potential explana-

tory patient (e.g. smoking) and process of care related factors should occur.

Abstract P-142

Understanding the practical, personal and emotional support needs of people living with cancer in the UK – during treatment, survivorship, and end of life

Clara Miglio[1], Rachel Bowden[1], Claire Burley[1], Fiona Smith[1]
[1]*Macmillan Cancer Support*

Background: There is a lack of evidence at a UK level about the practical, personal and emotional support needs of people living with cancer, and how well these needs are met. Adult social care services in England do not routinely record information at a level of detail that would permit specific analyses of people with cancer. Existing evidence suggests much of the burden of care is currently met informally by family, but it is not clear how well this meets people's needs. In order to inform service development and influencing in social care, Macmillan commissioned leading research organisation MRUK to identify the prevalence of these support needs amongst people at three key stages of the cancer journey (treatment, survivorship and end of life), and to explore the extent to which these needs are being met, and the impact of this.

Method:

- A UK-wide online survey of 1,037 people living with cancer in the UK and their carers
- 24 in-depth face-to-face interviews
- 15 week-long online diaries

Results:

- People with cancer experience a range of practical, personal and emotional support needs – from issues related to mobility, practical tasks, and personal care, to anxiety and depression. For the majority, these are directly related to their cancer and the consequences of its treatment.
- Informal support is by the far the most common source of help, but a significant proportion of people have unmet needs, receiving either insufficient support or no support at all.
- Unmet needs have wide-ranging consequences, leaving some housebound or unable to dress themselves, and others in poorer health or requiring unnecessary hospital admissions.

Conclusions: The social care needs of people with cancer are far more widespread than expected. Many currently lack the support they need, with distressing consequences for their day-to-day lives and dignity.

Abstract P-143

A systematic review of serum adiponectin and leptin and breast cancer progression

Suping Ling[1], Roisin O'Neill[1], Liam Murray[1], Marie Cantwell[1]
[1]*Centre for Public Health, Queen's University Belfast*

Background: Obesity is a known risk factor for breast cancer development and progression, and evidence suggests that the adiponectin and leptin, obesity-related hormones, may be involved in its mechanisms. The aim of this review is to clarify whether serum adiponectin and leptin are associated with breast cancer progression.

Method: Three electronic databases Embase®, Ovid Medline® and Web of Science® were searched for studies published up to October 2014. The search included only human studies and there were no language restrictions. Studies were considered for inclusion if they described a breast cancer population in which plasma baseline adipokines levels had been measured and estimates of risk of cancer progression (disease free survival, overall survival etc.) provided.

Results: The review identified only 5 relevant prospective cohort studies (Duggan 2011, USA; Oh et al, 2011, Korea; Goodwin 2012, Canada; Cho 2013, Korea and Lee 2014, Korea). Duggan 2011, Oh 2011, Cho 2013 and Lee 2014 investigated adiponectin and breast cancer progression (all-cause mortality, breast cancer mortality, recurrence, and disease-free survival), while Oh 2011, Goodwin 2012, Cho 2013 and Lee 2014 presented leptin and breast cancer progression. Due to heterogeneity of populations, exposure measurement and outcomes a meta-analysis is not possible. A narrative synthesis of the identified studies in underway.

Conclusions: The review will present the current state of evidence relating to the association between circulating concentrations of adipokines and breast cancer progression, with data presented according to ER/PR status, menopausal status, etc. where possible.

Abstract P-144

Understanding the needs of blood cancer patients post treatment

Lauren Dias[1], David Henderson[1]
[1]*Leukaemia & Lymphoma Research, Holborn*

An estimated 230 000 people in the UK are living after a diagnosis of blood cancer or closely related condition. This number include both patients who have been through treatment for this cancer and who are on maintenance treatment. Our Prioritisation of Patient Need (PPN) programme aims to understand the needs and experiences of blood cancer patients at all stages of the blood cancer patient journey. PPN was initiated to understand patient need in a series of qualitative and quantitative work. We conducted an online survey with 1725 people personally affected by blood cancer as well as 19 focus groups and 7 in-depth interviews. Both elements aimed to identify greatest areas of need across different stages in the patient journey. The survey highlighted that only 61% of blood cancer patients surveyed at post treatment felt their needs were met, in comparison to 80% at treatment phase. When asked to spontaneously identify their greatest need at post treatment – the need for psychological/emotional support was highest with over 20% of patients mentioning this need. The second greatest need (mentioned by 13%) was a need for advice on what happens next/how to get back to leading a normal life. When prompted, over 80% surveyed said they had a need for this and only 66% received assistance. This is complemented in our qualitative work where there is a perception by many patients involved that there is a lack of available provision, specific to blood cancer patients. The results show that at post treatment blood cancer patients feel there is a greater level of unmet need than at other stages, with specific needs for psychological/emotional support and lifestyle advice. The next phase of PPN will look at provision available and how to

raise awareness of these services in the blood cancer population.

Abstract P-145

RESTORE: supporting self-management of cancer-related fatigue, an exploratory randomised controlled trial of a web-based intervention

Claire Foster[1], Chloe Grimmett[1], Christine M May[1], Sean M Ewings[2], Lynn Calman[1], Jo Armes[3], Carl May[1], Emma Ream[4], Lucy Yardley[5], Alison Richardson[1]
[1]*University of Southampton Faculty of Health Sciences*
[2]*University of Southampton, Southampton Statistical Sciences Research Institute*
[3]*Kings College London*
[4]*University of Surrey School of Health Sciences*
[5]*University of Southampton School of Psychology*

Background: As the number of cancer survivors continue to rise and aftercare services become stretched, there is increasing demand for resources to support cancer survivors to self-manage late effects. Cancer-related fatigue (CRF) is a distressing symptom frequently experienced after cancer treatment. We report results from an exploratory randomised controlled trial (RCT) of RESTORE; a web-based intervention to enhance self-efficacy to manage CRF following primary cancer treatment. Primary objective is to test proof of concept and inform the design of an effectiveness trial.
Methods: This parallel-group two-armed (1:1) exploratory RCT recruited participants (>18 years, ?5 years post treatment for non-metastatic disease, experiencing moderate/fatigue) from 12 sites across the UK. RESTORE was developed in partnership with survivors, Macmillan partners, clinicians and academic experts. The intervention consists of five weekly sessions with components and activities informed by self-efficacy theory. Participants were randomly assigned to RESTORE or the Macmillan 'Coping with Fatigue' leaflet. Self-efficacy to manage fatigue was measured at baseline (T0), 6 (T1) and 12 (T2) weeks. A process evaluation with a subsample was also conducted. Data were analysed using mixed-effects linear regression and directed content analysis. Trial registration number ISRCTN67521059.
Results: 163 people participated in the trial and 19 in the process evaluation. Proof of concept was established and the intervention was found to be feasible and acceptable with good recruitment rates (39%) and acceptable attrition (36%). There was a trend for higher fatigue self-efficacy at T1 ($P = 0.09$) in the intervention group compared with controls. A number of refinements to RESTORE and the methods used are required before testing the effectiveness of RESTORE in a large trial.
Conclusion: Findings suggest that RESTORE is feasible and acceptable, and has potential to improve self-efficacy to self-manage fatigue following primary cancer treatment. On completion of refinements an effectiveness trial is warranted.
Acknowledgement: Funded by Macmillan Cancer Support

Abstract P-146

Changes in the death causes of adult cancer survivors according to their survival period

Minkyung Jo[1], Young Ae Kim[2], Duk Hyoung Lee[2], Eun Sook Lee[1]
[1]*Research Institute, National Cancer Center*
[2]*National Cancer Control Institute, National Cancer Center*

Background: This study seeks to analyze changes in the death causes of adult cancer survivors, according to their survival period and then to present the need to establish policies and systems for the national management of cancer survivors.
Method: The Korea Central Cancer Registry (KCCR) provided information on age, gender, region of residence, type of cancer, date of diagnosis, and pathological diagnosis. The study subjects were registered in the KCCR from 2001 to 2010 and follow-up surveys were conducted on those subjects until Dec 31th 2011. We obtained mortality data for those study subjects from the Korea National Statistical Office (KNSO) database from 2001 to 2011. Chi-squared test and logistic regression analysis were carried out in order to identify the relationship among the causes of deaths, according to their survival period and relative risks linked to deaths were calculated by using Cox Proportional hazard model.
Results: As a result, it was found that 30.6% of cancer patients, who had survived for more than 5 years, did not die from this disease (i.e., cancer). The detailed investigation into the death causes other than cancer revealed that cerebrovascular diseases (14.4%) topped the list followed by suicide (7.6%), cardiovascular diseases (7.1%), and diabetes (6.7%), indicating that there was no difference from death causes of healthy persons with no clinical history.
Conclusions: This means that cancer patients who survived for more than 5 years are exposed to basically similar health risks which healthy persons usually take, except for those related to recurrence of cancer. Investigating and analyzing the causes of cancer survivors may be used as basic data to be used in determining cancer patients' health risks and thereby contribute to the improvement of their health and quality of life.

Abstract P-147

Psychosocial interventions for informal caregivers of people living with cancer

Olinda Santin[1], Gillian Prue[1], Helen Coleman[1], Chris Cardwell[1], Peter O'Halloron[1], Michael Donnelly[1]
[1]*Queens University Belfast*

Background: Informal caring may have detrimental effects on the health and well-being of caregivers and we need a critically appraise the best evidence in order to aid decision-making. This review aimed to assess the effectiveness of psychosocial interventions designed to improve the quality of life and well-being of informal caregivers of people living with cancer.
Methods: We conducted electronic searches of CENTRAL, MEDLINE, EMBASE, PsychINFO, ProQuest, Open SIGLE and Web of Science for RCTs of psychosocial interventions that were delivered to informal caregivers. We conducted a narrative review of the interventions and organised the analysis and presentation of results in terms of intervention ingredients, mode and 'dose' of delivery and impact on informal carers. We conducted a meta-analysis to calculate pooled mean

difference for CES-D (and standardised mean difference (SMD) for generic measures of depression and psychological well-being) and 95% confidence intervals.
Results: Fourteen RCTs (comprising 2290 caregivers) met eligibility criteria. Beneficial effects in terms of caregiver quality of life, distress and symptom burden were observed in three studies. No significant effects were observed for depression as measured by the CES-D (in 5 studies: mean difference 0.70; 95% CI: −0.99, 2.39), general depression (7 studies SMD −0.01; 95% CI: −0.24, 0.22) and general psychological well-being (8 studies SMD −0.01, 95% CI: −0.22, 0.20).Interventions that had a higher degree of 'tailoring' (eg cancer site-specific vs generic interventions) appeared to perform better. Similarly, group interventions did not appear to be effective. Telephone as a delivery mode did not appear to work for caregivers though patients appeared to benefit positively. We did not find an association between intervention dose and outcomes.
Conclusions: The high level of variation across studies makes it difficult drawn firm conclusions regarding psychosocial interventions. Further methodologically sound RCTs are required.

Abstract P-148

A new way of counting cancer prevalence to understand the prevalence of multiple primaries in the UK

Samuel Jones[1], Hannah McConnell[1], Ceri White[2], Dyfed Huws[2], Lucy Irvine[3], Sarah Miller[4]
[1]*Macmillan Cancer Support*
[2]*Public Health Wales, Welsh Cancer Intelligence and Surveillance Unit*
[3]*Public Health England, National Cancer Intelligence Network*
[4]*Public Health England, Knowledge and Intelligence Team (East)*

Background: An estimated 2.5 million people are living with cancer in the UK, predicted to increase to four million by 2030. The Macmillan-NCIN Cancer Prevalence project aims to provide the most granular understanding of the cancer population in the UK. Previous cancer prevalence analyses have largely been based on a person count and a 'first diagnosis-only' method, but second/subsequent cancer diagnoses present new treatment and support needs. We aim to capture the prevalence of people diagnosed with more than one type of primary within a specified 20-year period.
Methods: We used the National Cancer Data Repository (UK cancer registrations linked to mortality records) to identify people diagnosed with cancer between 1991 and 2010 and still alive on 31st December 2010. We calculated prevalence based on the first diagnosis of a specific cancer type and then identified whether they then had a second/subsequent diagnosis of a different type of cancer within the 20-year period.
Results: The most prevalent cancers (breast, colorectal and prostate) accounted for the largest absolute number of people who had a second/subsequent diagnosis of another cancer type. Lung cancer was the ninth most prevalent, but had the highest proportion of second/subsequent diagnoses. One in 13 people diagnosed with lung cancer had received a previous cancer diagnosis of a different type, compared to 1 in 46 females with breast cancer. We will explore variations within and between UK nations and cancer types.
Conclusions: Initial analysis suggests that cancers with poorer prognosis potentially have higher proportions of people who have had a previous diagnosis and warrants further exploration. This analysis allowed us to quantify and capture the different groups which are more likely to experience more than one cancer diagnosis, helping us better understand need to inform health and social care provision.

Abstract P-149

20-year cancer prevalence in the UK by cancer type: exploring variations between short-term and long-term survivors in the cancer population

Samuel Jones[1], Hannah McConnell[1], Ceri White[2], Dyfed Huws[2], Lucy Irvine[3], Sarah Miller[4]
[1]*Macmillan Cancer Support*
[2]*Public Health Wales, Welsh Cancer Intelligence and Surveillance Unit*
[3]*Public Health England, National Cancer Intelligence Network*
[4]*Public Health England, Knowledge and Intelligence Team (East)*

Background: An estimated 2.5 million people are living with cancer in the UK, predicted to increase to four million by 2030. The Macmillan-NCIN Cancer Prevalence project aims to provide the most granular understanding of the cancer population in the UK. Patient needs and experiences vary over time from those recently diagnosed likely to be in active treatment, to long-term survivors who may still require health or social care and support.
Methods: We used the National Cancer Data Repository (UK cancer registrations linked to mortality records) to identify people diagnosed with cancer between 1991 and 2010, and still alive on 31st December 2010. We analysed the data to show variations in time since diagnosis distributions across: cancer type, age at diagnosis, gender, deprivation and geography. Counts are based on the first diagnosis of a specific cancer within the 20 year period; a person is counted more than once if diagnosed with more than one cancer type within the period, but just once if diagnosed again with the same cancer type.
Results: There were 1.8 million people living with cancer in the UK diagnosed between 1991 and 2010. Breast cancer was the most prevalent cancer, and 32% of women with breast cancer were long-term survivors (still alive 10–20 years after diagnosis). Cervix cancer had the highest proportion (46%) of long-term survivors. Almost half of those diagnosed with pancreatic cancer had been diagnosed within the previous year, and had the lowest proportion of long-term survivors (10%).
Conclusions: Our analysis provides a more granular understanding of the UK cancer population. Segmenting the cancer population in this way can help better planning and tailoring of health and social care, but further information on the health and experiences of long term survivors is still needed.

Abstract P-150

Transforming care after treatment –influencing redesign by service users

Gordon McLean[1]
[1]*Macmillan Cancer Support*

Background: Transforming Care After Treatment (TCAT), a Macmillan funded programme working in collaboration with the Scottish Government, NHS Scotland, Local Authorities and 3rd sector partners, is aiming to transform how people affected by cancer are supported to live with their cancer diag-

nosis. New models of service delivery are being tested, which will better meet the clinical and nonclinical needs and ensure the improved management of the communication and transition points between partner organisations. Crucial to the success of the programme of work is having people affected by cancer at the centre of the redesign work and a co-partner in the development and implementation process.
Method: As well as ensuring service user involvement with the individual projects that are supported during the programme, a TCAT Cancer Experience Panel was established. With a solely service user membership and supported by a development officer, the panel has a responsibility to strengthen the approaches used to involve patients, carers and the public in the development of the programme and to hold the TCAT Programme Board to account for delivering improvements in patient experience.
Results: A key strength of the programme has been the development of the panel's involvement in the scoring process to decide those projects that would be supported during phase 2. The panel had responsibility for 50% of the overall score awarded to bids submitted, that led to the agreement of those projects that would be funded between 2015 and 2017.
Conclusion: This was seen as a significant & positive move for the TCAT programme and the next step will be to further develop this process and enabling service users to strongly influence and be central to the decisions that are taken to redesign the services delivered to them.

Abstract P-151

Implementing an innovative survivorship navigator role to deliver the recovery package to men in Havering living with the consequences of prostate cancer

Sharon Cavanagh[1], Lucy Brooks[2]
[1]*London Cancer*
[2]*Barking Havering and Redbridge University Hospitals Trust*

Background: About 220 men in Havering are diagnosed with prostate cancer each year. Recognising that there was a lack of support close to home for men living with prostate cancer within the borough, a new role was co-designed with GP and Prostate Cancer UK involvement. The new role, a 'prostate survivorship navigator', aimed to improve patient experience across the pathway by delivering the National Cancer Survivorship initiative recommended recovery package interventions: holistic needs assessment (HNA), treatment summaries and health and wellbeing events.
Method: A detailed scoping of patient and local service needs was carried out, the new role was then promoted to local men, GPs and secondary care clinicians to support adoption, and measures were developed to track progress using a quality improvement approach. Men were referred directly from the MDT, from their Clinical Nurse Specialist (CNS), from GPs or via self-referral. The survivorship navigator then delivered recovery package interventions to patients referred into the service.
Results: Uptake was initially slow therefore a community drop-in clinic was successfully set up, and regular Health and Wellbeing group events held. During the initial scoping exercise, only 10% of men reported receiving an HNA and 60% reported difficulties contacting their CNS for support. At one year, 88 men have been referred to the service. 100% were offered an HNA and 47% received one. 70% of service users report that they know who to contact if they have any queries or concerns and receive a timely response. The most common areas of need identified by service users are: expert advice on continence, nutrition and exercise, and psychological support.
Conclusions: Emerging evidence from the pilot highlights that the primary areas of concern for men living with prostate cancer are in receiving timely communication, information and support. Implementation of recovery package interventions is addressing these issues.

Abstract P-152

Shoulder-to-shoulder support: using walking interviews to understand the significance of a peer-led walking group intervention for breast cancer survivors

Karen Scanlon[1], Richard Kyle[2], Aileen Ireland[3], Jennifer Finnegan-John[1], Leanne Taylor-Sturdy[1], Claire Knight[1], Emma Lavelle[1]
[1]*Breast Cancer Care*
[2]*Edinburgh Napier University*
[3]*University of Stirling*

Background: Promoting physical activity can aid recovery and rehabilitation after cancer diagnosis. Peer-led walking groups have been established to encourage physical activity and enhance social support among cancer survivors. This paper reports findings from walking interviews conducted outdoors and on the move that examined the experiences of women with breast cancer and and volunteer walk leaders participating in a peer-led walking group intervention (Best Foot Forward) in four sites in the North of England.
Methods: Walking interviews were conducted with four Walk Leaders, and two groups of X and X women with breast cancer on walks between April and July 2014. Interviews were loosely structured to encourage participants to consider significant conversations, emotions and places experienced during walks. Interviews were audio-recorded and transcribed verbatim. Thematic analysis was conducted and data integrated across sites.
Results: Three themes emerged. First, the combination of walking and talking enabled conversations to move freely between topics and individuals during a walk, encouraging both everyday and deep cancer-related conversation. Second, physical activity released emotional energy and heightened physical awareness of treatment side-effects facilitating support around shared cancer experience. Third, walking outdoors in nature provided a sense of freedom and a renewed sense of perspective that enabled participants to take stock and move on after cancer.
Conclusions: Peer-led walking groups provided restorative and therapeutic benefit to breast cancer survivors. Specifically, walking interviews revealed a form of 'shoulder-to-shoulder support' made possible through walking that was considered distinct from sedentary 'face-to-face support' routinely experienced following cancer diagnosis. Healthcare professionals should be made aware of the therapeutic benefits of peer-led walking groups for breast cancer survivors and should act as advocates to signpost patients to similar services.

Abstract P-153

Is England closing the international gap in cancer survival?

Muller Patrick[1], S Walters[1], S Benitez-Majano[1]
[1]*Cancer Research UK Cancer Survival Group, Department of Non-Communicable Disease Epidemiology, London School of Hygiene and Tropical Medicine*

Introduction: Consistent evidence of lower cancer survival in England than in other northern and western European nations has been found in the CONCORD and EUROCARE studies [1–4]. Cancer policy has been galvanised in England by the mounting evidence of lower survival than in comparable countries e.g. 2007 Cancer Reform Strategy. We aim to quantify and attempt to explain the trend in the gap in one- and five-year net survival from six cancers between England and five other countries.
Methods: We used data from England on patients diagnosed 1995–2012 and followed up to 31 December 2013) and five-year survival estimates for Australia, Canada, Denmark, Norway and Sweden for patients diagnosed during 1995–1999, 2000–2004 and 2005–2009 from the CONCORD-2 study. Cancers of the stomach, colon, rectum, lung, breast and ovary were included. For England we have also estimated yearly trends from 1995 to 2012. We predict survival up to 2012 in the comparator countries, based on a linear trend fitted to the three existing data points. Questionnaires telephone interviews to leading oncologists for each cancer in each country and a literature review are being conducted. From these analyses we will identify the screening, diagnostic, organisational, and treatment innovations that may have contributed to improved cancer care in each country between 1995 and 2012 and assess the extent to which these factors may explain observed survival trends.
Results: We will present up-to-date survival trends for the six countries (England up to 2012, other countries up to 2009 and projected to 2012) for each cancer, and the survival gap between England and other countries. We will present our interpretation of these trends, based on expert clinical comment and a literature review Knowledge of innovations that have improved survival in comparator countries has the potential to improve cancer care and outcomes. References available on request

TREATMENT: SURGERY, RADIO/CHEMO-THERAPY/ PHARMACO-EPI

Abstract P-154

The effect of warfarin therapy on breast, colorectal, lung and prostate cancer survival: a population based cohort study using the Clinical Practice Research Datalink

Michael O'Rorke[1], Liam Murray[1], Carmel Hughes[2], Marie Cantwell[1], Chris Cardwell[1]
[1]*Centre for Public Health, Queen's University Belfast*
[2]*School of Pharmacy, Queen's University Belfast*

Background: Pre-clinical studies suggest that oral anticoagulant agents, such as warfarin, may inhibit metastases and potentially prolong survival in cancer patients. However, few population-based studies have examined the association between warfarin use and cancer-specific mortality.
Methods: Using prescribing, cause of death and cancer registration data from the United Kingdom (UK) Clinical Practice Research Datalink (CPRD), four population-based cohorts were constructed, comprising breast, colorectal, lung and prostate cancer patients diagnosed between 1st January 1998 and the 31st December 2010. Comparing pre-diagnostic warfarin users to non-users, multivariable Cox proportional hazard models were used to estimate Hazard Ratios (HRs) and 95% Confidence Intervals (CIs) for cancer-specific mortality.
Results: Overall, 16 525 breast, 12 902 colorectal, 12 296 lung and 12 772 prostate cancers were included. Pre-diagnostic warfarin use ranged from 2.4 to 4.7%. There was little evidence of any strong association between warfarin use pre-diagnosis and cancer-specific mortality in prostate (adjusted HR = 1.03, 95% CI: 0.84–1.26), lung (adjusted HR = 1.06, 95% CI: 0.96–1.16) breast (adjusted HR = 0.81, 95% CI: 0.62–1.07) or colorectal (adjusted HR = 0.88, 95% CI: 0.77–1.01) cancer patients. Dose response analyses did not reveal consistent evidence of reductions in users of warfarin defined by the number of prescriptions used and daily defined doses.
Conclusions: There was little evidence of associations between pre-diagnostic use of warfarin and cancer-specific mortality in lung, prostate, breast or colorectal cancer patients.

Abstract P-155

Improving access to curative therapies in lung cancer for Northern Ireland

Jonathan McAleese[1], Wendy Anderson[2], Darren Brady[1], Lisa Ranaghan[3]
[1]*Northern Ireland Cancer Centre, Belfast City Hospital*
[2]*Antrim Area Hospital, Antrim*
[3]*N. Ireland Cancer Registry, Centre for Public Health, Queen's University Belfast*

Background: Lung cancer is the most common cause of cancer death. Incidence has increased by 20% between 2006 and 2014. Surgery and radiotherapy are the two curative-intent techniques for lung cancer. In England resection rates have risen with an associated increase in survival. It is expected that 16% of all lung cancer patients should have resection. In NI resection rates fell to 10% in 2012, and extra surgical lists were funded. The NICAN (Cancer network) instituted an audit to monitor resection rates in 2014. The rate of access to radical radiotherapy has been less well defined. One study in Scotland reports rates of between 1% and 8%.
Aim: To assess access to radical treatments for lung cancer in Northern Ireland.
Methods: Date from the NICR, the NLCA audits, and a Network audit on radical surgical resections for 2014 and a radiotherapy audit for 2003–2014 were used. Rates were defined as a proportion of all lung cancers diagnosed in that year.
Results: The rate of radical surgery rose from 10% in 2012 to 13% in 2014. The rate of radical radiotherapy rose from 6% in 2006 to 12% in 2014 ($P < 0.0001$). An increase in activity was seen throughout all MDMs in NI. The overall radical treatment rate rose from 17% to 25% ($P < 0.0001$).
Conclusions: There has been a doubling of radical radiotherapy and an increase in those offered curative surgery. The national standard for resection is still not met. An overall rad-

ical treatment rate of 25% is reported. Continued monitoring and international benchmarking are required.

Abstract P-156

Access to sentinel lymph node biopsy for malignant melanoma patients in England

Veronique Poirier[1], Isobel Tudge[1], Luke Hounsome[1], Jackie Charman[2], Julia Verne[1]
[1]*Knowledge and Intelligence Team SW, PHE*
[2]*Knowledge and Intelligence Team WM, PHE*

The use of Sentinel Lymph Node Biopsy (SLNB) as a procedure in the care of Malignant Melanoma is debated. While it is acknowledged that it can be considered as a staging procedure, the risks, morbidity and cost associated with the procedure are often mentioned as an argument against it. This project will assess if access to SLNB for patients in England has improved. Data from the National Cancer Registry and Hospital Episode Statistics were used to identify patients diagnosed in 2012 with malignant melanoma (ICD10 C43) (MM). The data were based on the hospital of diagnosis, grouped by Strategic Clinical Networks (SCNs). The OPCS codes used to identify SLNB were: T911; T86 or T87 and O142. Factors influencing the decision to offer SNLB, age and stage, were considered. 30 day emergency readmissions after lymphadenectomy (T85) were also analysed. 12 728 patients with MM were included in the cohort, and 13% underwent SLNB but with a range of 0.2% to 23% across the SCNs. 37% of cases had a Breslow thickness between 1 to 4 mm as; one of the recommended criteria for SLNB. 38% of patients were age between 30 and 59 and 41% between 60 and 79. Lymphadenectomy can happen as a result of a positive SLNB and in England 12% of patients having undergone this procedure had an emergency readmission within 30 days. Data indicated that although the percentage of patients receiving SLNB increased, there was still a great variation at national level as shown previously (1). The forthcoming NICE guidance on melanoma is likely to recommend this clinical practice and it is important that services and advices related to the procedure should be made available to patients across the country. 1. Baseline assessment of sentinel lymph node biopsy practice across England for melanoma patients, 2005–2009. A. Ives et al. NCIN. 2012

Abstract P-157

Induction chemotherapy and surgery for non-small cell lung cancer (NSCLC): challenging current thinking

Ruth Johnston[1], Jonathan McAleese[1], Kieran McManus[2]
[1]*Cancer Centre, Belfast City Hospital*
[2]*Department of Thoracic Surgery, Royal Victoria Hospital*

Background: Chemotherapy is recommended for locally advanced NSCLC. Induction chemotherapy followed by surgery in large randomised controlled trials (RCTs) has shown little advantage over radiotherapy with a median survival time (MST) of 16 months and 5 year overall survival (OS) of 16%. There have been particular concerns over toxicity after pneumonectomy. Our centre has experience of surgical resection post induction chemotherapy since the mid-1990s, for selected patients.

Method: A retrospective case series was analysed of all patients receiving radical treatment for NSCLC in the period 1998–2005. Demographic data including age, performance status, histology, and dates of diagnosis and treatment, including chemotherapy and surgical information, was collected. Actuarial survival curves were estimated using Kaplan Meier methods.

Results: Thirty-one patients with Stage III NSCLC had surgical resections post-induction chemotherapy for locally advanced disease. 53% of patients had a pneumonectomy and 47% had a lobectomy. There were no deaths noted within 30 days of surgery. The MST was 58 months and 5 year OS was 50%.

Conclusions: Our results from this regional retrospective analysis show better results than other multicentre trials. For selected patients, surgery post-induction chemotherapy does not seem to disadvantage patients. Post-operative deaths in the series are low and may reflect a centre with significant expertise in this area.

Abstract P-158

The surgical management of isolated paraaortic lymph node recurrence following colorectal cancer resection: a case series and systematic review

Elaine Burns[1,2], Amir Ardakani[1], Alex Loh[1], Rob Glynne-Jones[1,3], Colin Elton[1]
[1]*Barnet Hospital, Royal Free NHS Foundation Trust*
[2]*Imperial College London*
[3]*Mount Vernon Cancer Centre, Mount Vernon Hospital*

Background: Isolated paraaortic lymph-node recurrence (IPLNR) accounts for one percent of recurrent disease following colorectal cancer resection. We present a case series of patients in whom paraaortic lymphadenectomy for IPLNR following colorectal cancer was performed along with a systematic review of existing literature.

Method: Patients who underwent a metachronous paraaortic lymphadenectomy for IPLNR were identified retrospectively from a prospectively collected colorectal cancer database between 2005 and 2011. Demographics, surgical morbidity and long term outcome and survival were extracted. A systematic review of the literature was undertaken using three electronic databases, PUBMED, EMBASE and Google scholar following PRISMA guidelines. Additional papers were extracted from manual searches of the references.

Results: From the local colorectal cancer database four patients who underwent metachronous IPLNR lymphadenectomy were included. The median follow up of these patients was 20.3 months (interquartile range (IQR) 12.5–29.6 months). There were no perioperative morbidity or deaths in this cohort. One out of four patients (25%) experienced a rerecurrence at 31 months and was treated with CyberKnifeTM. All patients were still alive at the end of the follow up period. Following systematic review, seven published studies were analysed. Further analysis included the four patients in this case series and 110 patients identified through systematic review (n = 114). Overall, the median follow up following surgery was 29.5 months (IQR 26.8–31.0 months). Of these patients, there were no perioperative deaths and 22 patients (19%) experienced major perioperative complications including bleeding, ileus and wound infection. Recurrences following lymphadenectomy were experienced by 64%(73/114) of patients. In those

studies (5 studies) that reported 5 year overall survival, the overall survival was 50%(51/102).
Conclusions: The morbidity and mortality following lymphadenectomy for IPLNR is low. In carefully selected patients surgical intervention for IPLNR may be associated with improved longer term survival similar to the results seen after hepatic resection.

Abstract P-159

Breast cancer risk following treatment of screen-detected ductal carcinoma in-situ: a population-based data linkage study

Buckley Elizabeth[1], T Sullivan[1], J Hiller[1], G Farshid[1], Roder David[1]
[1]*School of Population Health, University of South Australia*

Background: In contemporary settings, breast cancer treatment practices are characterized by more conservative surgery. With widespread breast screening, it would be useful to examine the risk of IBC following screen-detected DCIS according to treatment.
Methods: All women participating in screening between 1989 and December 2010 in South Australia were included in the study. Breast screening data were linked to the population-based Cancer Registry to ascertain all IBC outcomes. Follow-up time from first screening to breast cancer was censored if no IBC was diagnosed or if they died of causes other than breast cancer. The relative risk of IBC in women with a history of screen-detected DCIS, compared to women without a screen-detected DCIS diagnosis, was estimated by age, time since diagnosis, and initial course of treatment.
Results: Median follow-up in this cohort was 12 years. The increase in hazard of IBC following screen-detected DCIS was 4.0 fold [95% CI: 3.3–4.8], with estimates also varying by age and time since diagnosis. Estimates of relative risk according to course of treatment were approximately 4.8 [95% CI: 3.8–6.0] and 2.5 [95% CI: 1.5–4.1] for women treated by local excision and mastectomy, respectively.
Conclusions: Administrative data were useful in measuring breast cancer risk in women with screen-detected DCIS. Comparison of these results with population data suggest that the relative risk of IBC in women with screen-detected DCIS was consistent with the broader Australian population. These data also suggest that there are approaches to care that would reduce the risk of IBC.