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Does data from questionnaires and cancer registries agree on routes and time intervals to diagnosis?

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2017 ABSTRACT BOOK



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ORAL PLENARIES

O-01

Making sense of cancer signs and symptoms: the impact of intergenerational cancer narratives on people's help-seeking practices

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Background: Public awareness of the signs and symptoms of different cancers is greater now than at any time in the past. However, this alone is not sufficient to prompt someone to arrange an appointment with their GP; they need to understand and appreciate the seriousness of potential symptoms. The challenge is to understand what contributes to this appreciation of seriousness of symptoms and to gain insight into understandings of cancer within the general population.

Methods: Ten focus groups were conducted with seventy-two lay people aged 18–81, who *had not* received a cancer diagnosis. Aims and objectives were to find out what participants knew about cancer signs and symptoms; gauge understandings of cancer risk; and explore the wider social context underpinning symptom recognition and subsequent help-seeking practices.

Results: Most participants knew someone who had been diagnosed with, had died from or had survived cancer. A cancer diagnosis of a family member or friend during the earlier lives of the majority of older participants was not talked about within familial and social circles. Hence the specific type of cancer and cause of death remained unknown to them into the present-day. The majority of younger participants had more open familial and social conversations about cancer. Knowing about others' experiences of cancer was drawn on by all participants to 'make sense' of cancer signs and symptoms and their own and others' cancer risk.

Conclusions: This paper offers in-depth exploration of how people understand and make sense of potential cancer symptoms and how this might affect their help-seeking practices. Findings resonate with the concept of cancer candidacy, whilst extending this theoretical framework with a consideration of how present-day awareness-raising activities might at times compete with familial cancer narratives and different generational understandings of cancer risk over time.

O-02

General practitioners' involvement during and after colon cancer treatment

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Background: Since not all aspects of survivorship care of colon cancer patients are addressed in secondary care, survivorship care in primary care is suggested. Primary healthcare use increases after cancer diagnosis, but it is unknown to what extent general practitioners (GPs) are dealing with cancer related symptoms. This study investigates primary health care utilization of colon cancer patients during and after treatment with curative intent in the Netherlands.

Methods: A prospective multicentre cohort study of patients with stage I-III colon carcinoma during six months after curative surgery, during and after adjuvant chemotherapy and during the following five years of follow-up. Data of six months were collected at the individual GP offices (November 2013 - January 2015).

Results: Of 184 included participants, 153 (83%) visited their GP resulting in 606 contacts (median 3, range 0-17) in the study period. Median time after surgery was 7.6 months (IQR 5-13.6 months). One in four contacts was colon cancer related with abdominal pain (19%), chemotherapy associated symptoms (16%), defecation problems (13%) and psychological problems (12%) as the most frequently reported reasons. Significantly more cancer related consultations were seen in women (67.5% versus 32.5%, $p < 0.001$), patients younger than 68 years compared to older patients (60% versus 40%, $p < 0.001$), and patients who were treated with chemotherapy (66.9% versus 33.1%, $p < 0.001$). More consultations were seen in patients who finished surgery and/or adjuvant chemotherapy less than six months before compared to patients who finished treatment longer ago (61.9% versus 38.1%, $p < 0.01$). GPs manage 82% of the cancer related contacts without consulting secondary care.

Conclusion: GPs see colon cancer patients quite often, mainly during treatment or shortly after they finished treatment. At least one in four contacts concerns cancer related problems, which are predominantly managed in primary care.

O-03

Breast Cancer Diagnosis and Treatment before and after High-deductible Insurance Enrolment

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Background: Primary care physicians often play a key role in ensuring appropriate cancer screening, initial workups for breast cancer, and appropriate transitions through subsequent oncologic care. High-deductible health plans (HDHP) have recently become the predominant commercial health insurance arrangement in the US and the centerpiece of proposals to replace the Affordable Care Act. Our objective was to determine if HDHPs affect the timing of breast cancer diagnostic testing, diagnosis, and treatment.

Methods: We used a segmented survival design with control group and studied health insurance claims and enrolment information from a large US health insurer. The intervention we studied was an employer-mandated transition to HDHPs. We included approximately 273,000 intervention group women age 25-64 without evidence of breast cancer prior to inclusion. These women were continuously enrolled for one year in a low-deductible (\$0-\$500) plan followed by up to 4 years in a HDHP (\geq \$1000) after an employer-mandated switch. Women were included on a rolling basis and followed between 2004-2012. The comparison group comprised contemporaneous, 1:1 propensity score-matched women whose employers offered only low-deductible plans year-on-year. Primary outcome measures comprised times to first diagnostic breast imaging (diagnostic mammogram, breast ultrasound, or breast MRI), breast biopsy, breast cancer diagnosis, and surgical resection (lumpectomy or mastectomy) and were analyzed using segmented survival models adjusted for age group, race/ethnicity, education level, poverty level, US region, index month, and duration of enrolment prior to baseline.

Results: After the HDHP switch, HDHP members experienced delays in receipt of diagnostic imaging (adjusted hazard ratio, aHR: 0.97 [0.94,0.99]), biopsy (aHR: 0.94 [0.89,0.99]), breast cancer diagnosis (aHR: 0.82 [0.74,0.90]), and surgical resection (aHR: 0.90 [0.84,0.98]) compared with controls (p-values comparing follow-up aHRs with baseline aHRs: 0.013, 0.026, 0.002, and 0.004, respectively).

Conclusions: HDHP enrolment was associated with delays in breast cancer diagnostic testing, diagnosis, and surgical resection. Such delays might lead to adverse long-term breast cancer outcomes among HDHP members. Primary care physicians, oncologists, and population health managers should consider closely monitoring women at risk for breast cancer who are enrolled in HDHPs.

Variation in 'fast-track' referrals for suspected cancer by patient characteristic and cancer diagnosis: Evidence from 670,000 patients with cancers of 35 different sites

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Background: In England, 'fast-track' (also known as 'two-week wait') general practitioner referrals for suspected cancer in symptomatic patients are used to shorten diagnostic intervals and are supported by clinical guidelines. However, the use of the fast-track pathway may vary for different patient groups.

Methods: We examined data from 669,220 patients with 35 cancers diagnosed 2006-2010 following either fast-track or non-fast track primary-to-secondary care referrals using 'Routes to Diagnosis' data. We estimated the proportion of fast-track referrals by socio-demographic characteristics and cancer diagnosis and used logistic regression to estimate respective crude and adjusted odds ratios. We additionally explored whether socio-demographic associations varied by cancer.

Results: There were large variations in the odds of fast-track referral by cancer ($p < 0.001$). Patients with testicular and breast cancer were most likely to have been diagnosed after a fast-track referral (adjusted odds ratios 2.73 and 2.35 respectively, using rectal cancer as reference); while patients with brain cancer and leukaemias least likely (adjusted odds ratios 0.05 and 0.09 respectively for brain cancer and acute myeloid leukaemia). There were sex, age and deprivation differences in the odds of fast-track referral ($p < 0.013$), which varied in their size and direction for patients with different cancers ($p < 0.001$). For example, fast-track referrals were least likely in younger women with endometrial cancer and in older men with testicular cancer.

Conclusion: Fast-track referrals are less likely for cancers characterised by non-specific presenting symptoms and patients belonging to low incidence demographic strata. Interventions beyond clinical guidelines for "alarm" symptoms are needed to improve diagnostic timeliness.

ORAL PARALLELS

O-05

The CHEST Australia Trial: a Phase II randomised controlled trial of an intervention to reduce time to consult with symptoms of lung cancer.

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Background: Lung cancer has one of the poorest survival outcomes of any cancer because over two thirds of patients are diagnosed when curative treatment is not possible. International research has focused on either screening or community interventions to promote earlier presentation to healthcare and detect lung cancer earlier. The previous Scottish CHEST trial of an individual-level behavioural intervention showed promising preliminary evidence in increasing overall consultation rates. The CHEST Australia trial was powered to test the effect of an individual-level behavioural intervention on consultation rates for respiratory symptoms in people at increased risk of lung cancer.

Methods: The CHEST intervention entails a primary care nurse consultation to discuss and implement a self-help manual, followed by self-monitoring reminders to improve symptom appraisal and encourage help-seeking in patients at increased risk of lung cancer. In CHEST Australia the original Scottish intervention has been adapted for an Australian population. Patients are randomised to the CHEST Intervention plus spirometry or usual care plus spirometry. Eligible participants are long-term smokers with at least 20 pack years, aged 55 and over, including ex-smokers if their cessation date was less than 15 years ago. The primary outcome is consultation rate for respiratory symptoms; secondary outcomes collected at baseline and 12 months include: knowledge of symptoms of lung disease, symptom appraisal and help-seeking behaviour including time to presentation with chest symptoms, anxiety, depression, cancer worry and health service utilisation.

Results: We have recruited the target sample size of 551 patients and 12-month follow-up was completed in November 2016. The main trial results will be available for presentation by April 2017.

Conclusion: This is the first Australian trial to test the effect of a behavioural intervention to reduce time to presentation with lung cancer symptoms. If effective, it could be a low-cost approach to early diagnosis of lung cancer.

O-06

General practice variation in multiple pre-referral consultations and the length of the Primary Care Interval in patients subsequently diagnosed with cancer: Evidence from a national audit

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Background: There is increasing interest in the role of primary care in improving cancer diagnosis. The use of investigations or urgent referrals for suspected cancer varies substantially between general practices, but the size of variation in the length of the diagnostic interval is unknown.

Methods: We examined general practice variation in 1) length of primary care interval, 2) frequency of multiple (3+) pre-referral consultations, using National Audit of Cancer Diagnosis in Primary Care data (2009-10). Mixed-effects regressions estimated the true underlying variation (i.e. that expected with large sample sizes per practice), which was compared to observed variation. We estimated the number of incident cases per practice (and related reporting periods) required for achieving measurement reliability acceptable for public reporting (>0.7).

Results: There was substantial underlying variation between general practices for both outcomes (up to 2-fold between practices at 75th/25th centiles; and 3-fold between practices at the 90th/10th centiles). Given a national median of ~28 incident cases annually per practice, the median reliability for measuring the proportion of cancer patients per practice with multiple pre-referral consultations and length of primary care interval would be 0.46 and 0.41, respectively. Acceptable reliability for public reporting could be achieved over periods of 2.8 and 3.4 years (i.e. 77 and 94 cases/practice). However, many (e.g. smaller than average size) practices will be unreliably measured.

Conclusion: After accounting for the role of chance, there may still be appreciable variation in measures of diagnostic timeliness between general practices. Aggregating data over longer reporting periods can improve reliability, but if, as likely, diagnosis of cancer in primary care improves, variability between practices will likely diminish, making reliable measurement harder. Focusing on diagnostic care processes (e.g. referral or investigation rates per practice), or occurrence of 'unexpected events' (e.g. non-referral of alarm symptoms) may be more effective strategies.

Time intervals from first symptom recognition to diagnosis of head and neck cancers: A study based on a patient survey and linkage to primary care and hospital medical records

Authors: *Osaretin Oviasu, Victoria Allgar, Hong Chen, Louis Bailey, Steven Oliver, Miriam Johnson, Una Macleod*

Background: Cancer remains a serious UK health problem in terms of morbidity and mortality with delayed diagnosis likely resulting in poorer prognosis. The aim of this study was to explore the patient, primary-care and secondary-care intervals, and to compare with the different head and neck cancers (HNC).

Methods: Patients newly diagnosed with HNC in 2013-2015 were identified from a single NHS Trust. Data were collected via researcher-administered patient questionnaires, and from hospital and primary-care records. Patients were asked to recall the approximate date they detected a bodily change, decided to consult a health-care professional (HCP) and their initial HCP appointment. Primary and secondary-care records provided the initial HCP appointment dates, referral dates, initial hospital appointment and diagnosis dates. The interval between dates was calculated. Data were summarised as percentage for categorical intervals and median (interquartile range (IQR)) for the number of days.

Results: Eighty patients were recruited. Overall, 28% reported an appraisal interval of more than 1 month (interval from detecting a bodily change to deciding to consult HCP). All reported having first contact with a HCP within 1 month of deciding to seek help (help-seeking interval). However, using primary care records, 26% presented with a HCP with HNC symptoms before they reported detecting a bodily change. The primary care interval was 46 (6-127) days (interval from initial HCP appointment to referral date). The referral interval was 9 (5-14) days (interval between referral and initial hospital appointment). The diagnosis interval was 17(8-36) days (interval between initial hospital appointment and diagnosis). The total interval was 113 (68-220) days (interval between detecting a bodily change and diagnosis). The association between the cancer type and primary care interval was significant ($p=0.028$) but not for the other intervals.

Conclusions: The results highlight a need for innovative interventions to shorten the interval length within primary care.

O-08

DOES DATA FROM QUESTIONNAIRES AND CANCER REGISTRIES AGREE ON ROUTES AND TIME INTERVALS TO DIAGNOSIS?

Authors: Alina Zalounina Falborg, Henry Jensen, Peter Vedsted, Usha Menon, David Weller, for the ICBP Module 4 group.

Background: Routes to and time intervals for cancer diagnosis are associated with cancer outcome. Some data on routes and milestone dates can be established from registries and other databases. However, where data is incomplete, inaccurate or non-existing, other data sources may be needed.

We aimed to analyse the agreement between cancer patients, general practitioners (GP), secondary care specialists (SP) and registries regarding information on routes to diagnosis and milestone dates.

Methods: Information on routes to diagnosis (screening and symptomatic presentation) and milestone dates (date of first presentation to primary care, date of diagnosis and date of treatment) were compared between patient-, GP- and SP-questionnaires and the registries in the International Cancer Benchmarking Partnership (ICBP) Module 4 study. The ICBP Module 4 study describes diagnostic routes and time intervals of the pathway from first symptom until treatment start for breast, colorectal, lung and ovarian cancer patients in 10 jurisdictions across UK, Scandinavia, Canada and Australia.

The agreement for routes to diagnosis was assessed by Kappa coefficient and percent of positive agreement. The agreement for dates was measured by Lin's concordance correlation coefficient (CCC).

Results: Data for 9,500 patients was included in the analyses. Among colorectal and breast cancers, the agreement on routes to diagnosis ranged from substantial to almost perfect ($0.60 \leq \text{Kappa} \leq 0.90$, $73\% \leq \text{positive agreement} \leq 94\%$). Among lung and ovarian cancers, the agreement on symptomatic route was also adequate ($\text{Kappa} = 0.13$, $88\% \leq \text{positive agreement} \leq 93\%$) – noting there was no screening route for lung and ovarian cancer patients. The agreement between all data sources for milestone dates was high ($0.90 \leq \text{CCC} \leq 0.99$) among all cancer types.

Conclusion: Overall, we found adequate agreement between all data sources regarding dates and routes to diagnosis. These results suggest that combining data from patient/physician questionnaires and registries may be useful to measure routes to diagnosis and milestone dates of the diagnostic pathway.

O-09

“Something I’d done for all those years had suddenly become more difficult”: primary brain tumour patient perspectives on symptom appraisal and routes to diagnosis.

Authors: Clarissa Penfold, Alexis Joannides, Will Sage, Joyce Bell, Margaret Johnson and Fiona M Walter

Background: The prognosis for primary brain tumours remains poor; only 40% of people diagnosed with malignant brain tumours live for more than a year. Patients and GPs can find it difficult to recognise early symptoms, especially when subtle, intermittent, or similar to symptoms caused by other conditions. This study aimed to develop a richer understanding of patients’ experiences and attributions of symptoms, and their routes to diagnosis.

Methods: This qualitative study is being conducted in stages: Phase IA (completed)- in-depth interviews with 20 adult patients recently diagnosed with a primary brain tumour, followed by an early analysis, and Phase IB (underway)- interviews with another 20 patients, for a more detailed exploration of early emergent themes. Analysis used Framework approach and thematic analysis.

Results: Phase IA interviews were conducted with 14 males and 6 females, aged 35 - 76 (median 63) years. Four participants were diagnosed following emergency presentation without seeing a GP, and two following same-day referral to A&E by their GP at first presentation. The other participants reported varied routes and time to diagnosis, often involving more than one healthcare professional. Three reported multiple (3 or more) GP consultations.

Many participants (14/20) reported noticing bodily changes or cognitive symptoms at least six months to over a year prior to help-seeking. Factors influencing the appraisal interval included patient experiences of vague and subtle symptoms which they attributed to ageing and work-related or familial stress. Participants also reported challenges to presenting multiple and subtle symptoms in the context of a routine GP appointment.

Conclusions: These are initial findings, and so should be interpreted with caution. More comprehensive analyses will be presented at the conference. Nevertheless, early findings suggest a number of issues relating to symptom appraisal and help-seeking which could be addressed by improving guidance for both patients and GPs.

Health literacy and the pathway to diagnosis for oesophageal and gastric cancer

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Background: In the UK in 2012 there were over 15,000 cases of oesophageal and gastric (OG) cancer diagnosed, and more than 12,000 deaths. Increasing symptom awareness and understanding, encouraging prompt help-seeking and facilitating timely referral are priorities for improving outcomes. This mixed-methods study aimed to characterise how patient factors, including health literacy (accessing, understanding and using health information, and navigating healthcare systems) influence timely diagnosis of OG cancer.

Methods: Patients newly diagnosed with OG cancer at two hospitals in the East and North East of England, were consecutively approached over an 8 month period (Phase I completed); Phase II ongoing (additional 6 months). We aimed to survey 200 patients aged 18 and over to explore symptom experience, help-seeking, and aspects of health literacy (two domains from the Health Literacy Questionnaire, *Osborne 2013*). Participants were purposively sampled by location, age, gender and cancer for semi-structured, face-to-face in-depth interviews conducted within 10 weeks of diagnosis. Preliminary analyses used simple descriptive statistics and thematic analysis.

Results: 52 participants were recruited during Phase I (41% response rate); 40 males, aged 52–96, 44 oesophageal cancer, 33 stage I/II cancer (Phase II modified to increase stage III/IV cancer participants). Mean health literacy scores (out of 5) were: understanding 4.3, engagement 4.4 (both range 2.6-5.0). 14 interviews were conducted with early analyses showing limited understanding of OG cancer and health information for symptom appraisal. Many participants did not expect cancer, describing themselves as healthy despite experiencing multiple symptoms and often making significant dietary changes to manage symptoms. New/worsening symptoms prompted help-seeking, with most participants showing confidence in engaging with healthcare.

Conclusions: This is the first study to explore how health literacy influences ‘time to diagnosis’ for OG cancer, with findings potentially providing important insights for the development of targeted awareness campaigns and strategies enhancing GP/patient communication.

O-11

Linking risk perception with help-seeking: findings from focus groups with older adults

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Background: Much of the increase in cancer incidence can be attributed to similar increases in life expectancy. Yet, older people commonly underestimate this risk, are less likely to be aware of the early symptoms of cancer, be diagnosed via an emergency presentation and are more likely to be diagnosed with advanced stage cancer. Taken together such patterns suggest that help-seeking behaviour amongst older adults warrants exploration.

Methods: We carried out 11 focus groups in Scotland during 2015 and 2016. Eight groups were held with pre-existing community groups and three additional groups were held with cancer survivors and carers.

Results: Cancer was linked to diet, smoking and alcohol use, and very strongly associated with genes and family history. There was, albeit limited, acknowledgment that age was important. Rather, cancer was strongly associated with randomness and luck. Participants were sceptical about the accuracy of media coverage. Yet, media representation had some influence; breast cancer was seen as a disease affecting younger women, confirmed by high profile celebrity cases. The presentation of risk factors was thought to be vague and ambiguous; frequently changing dietary advice compromises credibility. Many concluded that 'everything causes cancer'. Understanding of cancer symptoms was gained via awareness campaigns, though personal and family experiences were more likely to influence help-seeking. Many participants described an unwillingness to bother their doctor with vague or trivial symptoms within a 'stretched' NHS. Many discussed the natural impact of the ageing process on bodily sensations. Fear too was often cited as a reason for prolonging help seeking.

Conclusions: Older adults in our study did not regard themselves at particular risk and viewed many common symptoms as vague, trivial and likely to be a normal aspect of ageing. Such beliefs impact on help-seeking and need to be challenged to affect prompt presentation.

O-12

Health literacy and mortality among breast, prostate, colorectal, and lung cancer patients in the ACCESS study

Authors: Maria Mora, John M Hampton, Ronald E Gangnon, Paul Smith, Ana Martinez Donate, Amy Trentham-Dietz, [Robert T Greenlee](#)

Background: More than 1/4th of US citizens have limited health literacy. Low health literacy in cancer patients has been associated with reductions in care satisfaction and quality of life, but the association with patient mortality has not been well characterized. In this analysis, we incorporated long term follow-up of cancer patients from the ACCESS study to explore associations between patient socio-demographics, health literacy, and mortality.

Methods: In a population-based, mailed survey of incident breast, prostate, colorectal, and lung cancer patients in the U.S. state of Wisconsin, 68% (n=1,832) of eligible patients participated. Survey results were linked with corresponding case data from the state cancer registry, and vital status through 2013 (mean follow-up 81 months) via the National Death Index. Health literacy was assessed by 4 screening questions answered on a 5-point Likert scale (Chew et al JGIM 2008). Summed responses classified subjects into low, medium, or high health literacy. Stratified Cox proportional hazard modelling evaluated associations between health literacy and overall mortality.

Results: Men, those diagnosed at older ages, and lung and colorectal cancer patients were more likely to have low health literacy, while breast cancer patients were less likely. In unadjusted analysis, patients with low health literacy had increased mortality (HR for low compared to high, 1.7, 95%CI 1.3-2.1), but control for socio-demographics, cancer site, and stage eliminated the association (1.1, 0.8-1.4). In site-specific adjusted analysis, only for breast cancer did low health literacy show any evidence (non-significant) of possible mortality elevation (1.3, 0.6-2.7).

Conclusions: In this study, low health literacy did not appear to be independently associated with cancer patient mortality. However, as health literacy is also likely related to choices and completeness of cancer treatment, larger studies are needed to capture ample variation in care and further explore potential pathways between health literacy and cancer patient outcomes.

Multiple Perspectives Analysis on Cancer Control in Akwa Ibom State – Nigeria: A Mixed-Methods Pilot Study

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Background: Despite rising cancer-related morbidity and mortality, Akwa Ibom State, like the rest of Nigeria, does not have an organized cancer control framework. Evidence suggests that community-engaged research would use local knowledge to co-create effective, horizontal cancer control strategies within specific health systems. This study used a multiple perspectives analysis to explore cancer control issues from the perspectives of: cancer patients (CP); healthcare providers (HCP); and, health policymakers (HPM) in the state. It was aimed at developing a protocol for studying cancer control policy in a resource-limited setting.

Methods: Concurrent mixed-methods action research (MMAR) methodology was used. Participants (n=28; CP=3, HCP=14, HPM=11) were recruited at a workshop on cancer control. Data was collected using a cross-sectional survey and in-depth interviews. Data analysis involved descriptive statistics, Chi-square and, inductive thematic analysis.

Results: Median age of participants was 55 years, and 73% (16/22) ranked cancer as very important public health priority (≥ 8 on an 11-point scale). *"It's a public health problem because it has caused a lot of mortality which affects families"* (Participant #9). Belief system (especially regarding witchcraft) and low political will were identified as barriers to cancer control. Most participants expected a new policy to focus on: creating awareness, integrating screening with other services and improved access to treatment. Seventy-nine percent (22/28) agreed that patients should be involved in developing the policy, and that the State Assembly should pass legislation related to cancer control. As one person indicated, *"Patients should be involved in developing policy... since they know what they passed through during the sickness"* (Participant #2). Most participants had similar perspectives. Results are being used to further develop a local cancer control framework.

Conclusion: The use of MMAR to structure cancer control policy issues in Akwa Ibom State is innovative. Research protocol can be transferred to other resource-limited settings.

The impact of breast cancer diagnosis on the daily life of Omani women: A qualitative study

Authors: Asya Al-Riyami, Nadia Noor Abdulhadi, Mohammed Al-Azri

Background: There is rising burden of breast cancer globally, particularly in the Eastern Mediterranean Region (EMRO). The psycho-social impact of breast cancer is a growing health problem; hence the quality of life, cultural and spiritual values of patients are an important consideration when designing the treatment. The aim of this study was to explore the impact of breast cancer on the daily life of Omani women.

Methods: Semi-structured individual interviews were conducted with 21 Omani women diagnosed with breast cancer. Patients were recruited from the National Oncology Center of the Royal Hospital in Muscat, Oman.

Results: Four main themes emerged. Firstly, the psychological impact of the disease or treatment on the women's lives, including concealing the diagnosis by avoiding talking to families or friends, feeling like losing their feminine character and a negative effect on sexual practices. Second, the women's religious beliefs and practices. Women perceived cancer as a test from God, hence they felt they should submit to God and his willpower, accept what God had dictated and to ask God for support through prayer and reading the Holy Book (*Quran*). Third, life priorities for some women became trivial, unimportant and unsatisfactory. Their dreams and hopes became less vital as their main concern was to be cured. Fourthly, good emotional support and sympathy from their family, spouses and friends which made the women happy and accept their life and fate with good self-esteem.

Conclusions: Omani women diagnosed with breast cancer constructed coping strategies using religious beliefs to improve emotional and psychological well-being. Patients' perceptions of religion and their beliefs should be considered during medical consultations to empower the patients and to make them autonomous. Strategies that could improve the quality of life of Omani women diagnosed with breast cancer should be based on their personal experiences and individual needs.

PATHWAYS TO BREAST CANCER Care

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Background: Breast cancer is the most commonly diagnosed female cancer in South Africa. Appropriate recognition of breast symptoms, improved access to health facilities and accurate investigation of symptomatic women are essential to down stage breast cancer. The aim of this study was to understand women's pathways to breast cancer diagnosis and factors influencing this journey.

Methods: The study was conducted at a tertiary hospital in the Western Cape Province, South Africa. Qualitative and quantitative research methods were used to meet the study objectives. In-depth interviews were conducted with 20 newly diagnosed breast cancer clients attending the breast cancer clinic. In the cross-sectional survey 204 newly diagnosed breast cancer patients were interviewed using a structured questionnaire. The analyses were underpinned by Model of Pathways to Treatment Framework.

Results: The qualitative interviews showed that women had limited knowledge of breast cancer symptoms with many women only perceiving their breast lump as being abnormal when additional symptoms were present. Attribution of symptoms to ageing and past benign breast disease also resulted in women being complacent about bodily changes. In the cross-sectional study (n=204), 54% of women made the decision to see a health care provider within 2 weeks of noticing a breast change (appraisal interval). Once that decision was made the majority of women (74%) visited a health care provider within 2 weeks (help-seeking interval). Overall the median time between symptom awareness and breast cancer diagnosis at the tertiary hospital was 71 days (interquartile range 31 – 131 days, mean 104 days). Factors associated with key time to diagnosis events are being analyzed and will be presented at the conference.

Conclusion: The Model of Pathways to Treatment provides a useful framework to explore patient's journeys to care and could aid in the development of targeted interventions to promote timely diagnosis of breast cancer.

Implementation of sustainable cervical screening in Malawi: perspectives of health care providers in rural health centres

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Background: Malawi has the highest incidence of cervical cancer in the world. Over the last three years, the Nkhoma Cervical Cancer Screening Programme has implemented a 'screen and treat' approach using visual inspection with acetic acid (VIA) and treatment using thermo-coagulation in a rural district general hospital and associated health centres in Central Malawi. The views of health centre staff were sought as part of ongoing efforts to ensure sustainability of screening provision.

Methods: Semi-structured qualitative face-to-face interviews were carried out in English with nineteen providers in July 2016 in nine health centres associated with Nkhoma Hospital (at one site two providers were interviewed together). Signed informed consent was obtained prior to interview; interviews were transcribed verbatim, and analysed using thematic analysis.

Results: Staff reported professional satisfaction in having learnt new skills and in providing an additional service to their communities (particularly for HIV+ women), with additional benefits of coincidental identification of other gynaecological conditions. Wide acceptance in their communities was reported: the early sensitisation of group village head men, chiefs' wives and local health groups was cited as being very influential in cervical screening gaining early acceptance, but as the project progressed the women themselves encouraged others to attend. However, a number of cultural practices that may contribute to high cervical cancer incidence and local misconceptions about the nature of screening were also discussed. Workload in the health centre, inadequate numbers of trained staff, and high staff turnover due to redeployment were raised as concerns for developing a sustainable service, with the need for commitment and provision of basic supplies by the Ministry of Health emphasised.

Conclusions: Sustainability of screening is challenging both with respect to the number of trained providers and financing of supplies. There is also a need for educational initiatives to raise awareness and address misconceptions.

Managing potential pre-cancer-states in the lungs: An ethnographic study

Authors: Frumer, Michal¹, Vedsted, Peter¹, Andersen, Rikke Sand¹

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Background: There is a significant growth in the detection of *potential* pre-cancer-states, which may or may not progress into a cancer-pathology. This is due to more investigations, better technology and increased focus on early detection. The clinically indeterminate small pulmonary nodule (SPN) is one example, whose detection has become an increasingly common consequence of routine medical care to be managed in primary care. But how to manage the indeterminacy of SPNs and how to balance early detection and patients' needs and preferences? And what constitutes 'needs and preferences' when public expectations to medical care are expanding?

Methods: Based on four months of ethnographic fieldwork at a pulmonary outpatient clinic in Denmark, MF interviewed pulmonary specialists, nurses, and patients being followed-up for SPNs. The material was analysed within a frame of *Risk Society* and the management of uncertainty, constituting a Master-thesis.

Results: GPs often see themselves as allied with their patients, trying to balance a search for a diagnosis with patients' needs and preferences. Patients seem to accept and appreciate *watchful waiting* as this indicates proper treatment and enables them to confine possible worries and uncertainties inside a biomedical paradigm that does not need continuous reconsideration in everyday life – even for people initially sceptic about follow-up. However, cancer lurks in the shadows and worries materialise especially when the next follow-up approaches.

Concluding discussion: Our expectations of long life and health have increased, and the growing dominance of early diagnosis or preventive medicine combined with increasing access to biotechnology make those expectations seem achievable. However, in attempting to prevent suffering we also stimulate fear and uncertainty. This brings ethical dilemmas to reflect upon regarding patients' 'needs and preferences' (How are these constituted? How to share decisions in the shadows of cancer?) and prioritisation (Who can and how to accept or decline follow-up?).

Embodying the ‘Good Patient’: Navigating the competing demands of consulting promptly, whilst not ‘wasting the doctor’s time’, and the implications of this for practice.

Authors: Dobson, C.M., Russell, A.J., Brown, S.R. & Rubin, G.P.

Background: Help-seeking is a focus of earlier diagnosis research because of the substantial contribution of the patient interval to the total diagnostic interval. A range of factors have been shown to influence help-seeking, including social sanctioning and competing priorities, with concerns about ‘wasting the doctor’s time’ increasingly being identified as a barrier for some.

Methods: A mixed methods approach, using questionnaires and semi-structured interviews, was used to examine the patient interval, with findings from the interviews discussed here. A questionnaire was sent to patients referred with a suspicion of lung or colorectal cancer to the University Hospital of North Tees. Of those who completed a questionnaire (n=164, response rate 11.8%), 26 participants were purposively sampled and interviewed. In line with a constructivist grounded theory approach, interviewing ceased when interviews no longer challenged the analysis.

Results: Participants sought to align their behaviour with their beliefs about how a ‘good patient’ acts. Some believed ‘good patients’ consulted promptly, before disease could advance, whilst others felt that a ‘good patient’ would manage their symptoms and avoid ‘wasting the doctor’s time’. Some used the insistence of others to justify help-seeking to avoid appearing incompetent should the GP deem the complaint trivial. Reporting a reduced patient interval length was another strategy used by participants to align themselves with the ‘good patient’, distancing themselves from those who take ‘too long’ to present and are neglectful of their health.

Conclusion: Competing discourses of early presentation and the archetypal ‘maligner’ place competing expectations on symptomatic individuals, because they dichotomise the concept of the ‘good patient’. In practice, this means some people need others to sanction help-seeking in order to justify consultation, which is problematic for those lacking social support. Others may report shortened symptom duration to avoid appearing incompetent, which will affect the GP’s appraisal of their condition.

Goldilocks and the three health systems: the sociological ambivalence of being a 'good cancer patient' in Sweden, Denmark and England

Authors: Sue Ziebland, (presenting) Rikke Sand Andersen, Senada Hajdarevic, John MacArtney, Birgit Rasmussen

Background: The wider aim of this cross country comparative study is to identify potentially modifiable factors in cancer awareness, consultation access and referral.

Methods: Narrative interviews with patients recently diagnosed with either lung or colorectal cancer in three European countries. Interviews (total 155) were collected by a sociologist (UK) an anthropologist (Denmark) and nurse researchers (Sweden) using a common approach and interview guide. We focus on people's accounts of the process that led to the diagnosis, including their recognition of symptoms and their decisions to consult a doctor, and their descriptions of self-care during and after treatment

Results: Patients in all three countries position certain health related behaviours as creditable and others as deviations. For example, assuming that a symptom cannot be serious if a person otherwise feels well, or if another rational explanation can be suggested. A third group of behaviours were described as less acceptable, but this last category was usually applied to hypothetical behaviours, not to themselves (and may be considered a distancing mechanism).

Drawing on Merton's Sociological Ambivalence (1976) we show that the good patient (and good citizen) is characterised as someone who is attentive to their health (but not obsessed with it), who responds to media campaigns on symptom awareness (but does not present at the doctors as a 'worried well' patient), who follows advice from the doctor (but also listens to their own body and is prepared to challenge advice) who is optimistic, positive and hopeful (but is not gullible or prey to wild theories).

Conclusion: We demonstrate that the 'Goldilocks Zone' that patients are trying to inhabit as good citizens and responsible partners in their health care presents considerable (but different) difficulties in all three countries, and may be part of the explanation for differences in how primary care is used during the pre-diagnosis period.

Policy in action: how the dominant cancer narrative encourages implementation of cancer pathways

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Background: National policies increasingly direct healthcare services, and while policies attempt to govern courses of action, their implementation is often challenging. This is also seen in Denmark where cancer pathways comprising primary and secondary sectors were introduced to standardize diagnostics and treatment. We suggest that the dominant cancer narrative that frames cancer as a serious disease imbued with uncertainties and urgency encourages the implementation of these pathways. Using Certeau's concepts of tactical practices, we explore how cancer pathways are enacted in clinical encounters and discuss how the dominant cancer narrative reflects in their implementation.

Methods: We draw on material from a long-term ethnographic fieldwork in four courses of Continuing Medical Education, two GP clinics, and cancer diagnostic departments at three hospitals. The main methods were observations and semi-structured interviews with patients (13) and healthcare professionals (26).

Results: We argue that practices within cancer pathways are shaped by the 'what if' of the dominant cancer narrative entailing that patients and professionals consider early and fast action morally good and pathways, promising rapidity and management of uncertainty, the best answer. When divergence arises between policy intention and clinical practice (e.g. patients are disinclined, test results are unconvincing), professionals and patients will go to great lengths to make the pathway work through e.g. tactical practices of managing hope or emphasizing or downplaying cancer suspicion. Thus, we argue that the implementation of cancer pathways is encouraged by the moral imperative of the narrative.

Conclusions: While the policy of cancer diagnostics is intermingled with the ambiguities of clinical practice, the dominant narrative of cancer generally implicates a taken for grantedness of the policy's ethical and moral good. Through tactical practices, professionals and patients create a knowable and treatable disease whereby the prognostic horizon is advanced in accordance with the policy.

Vitamin B12 deficiency anaemia, a risk marker for non-metastatic lung cancer: a case control study

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Background: Lung cancer (LC) is one of the most common and deadliest cancers in the world. LC is generally diagnosed at a late stage which partly explains the poor survival.

Methods: A total of 373 patients diagnosed with LC in 2011 and 1472 matched controls were selected from the Swedish Cancer Register (SCR) and regional healthcare database respectively. The study focused on a comparison between non-metastatic and metastatic LC patients; 132 patients had stage I-III (35 %) non-metastatic cancer, and 241 patients had stage IV (65%) LC. All diagnostic codes (according to ICD-10) from primary care consultations registered during the year before the date of cancer diagnosis (according to SCR) were collected from the regional database. Odds ratios (OR) were calculated for variables independently associated with non-metastatic and metastatic LC using univariate conditional logistic regression.

Results: Twelve features with OR >1.5 were associated with non-metastatic cancer, of which eight also were common with metastatic LC. The highest OR were: vitamin B12 deficiency anaemia OR 6.7 (95%CI 1.6-27.9); dyspnoea OR 5.0 (2.0-12.7); chronic bronchitis OR 5.0 (1.3-18.6); chronic obstructive pulmonary disease OR 4.3 (2.4-7.5); and peripheral vascular disease OR 4.2 (1.3-13.9). Metastatic LC patients had seventeen features, with the highest OR for: atopic dermatitis OR 12.0 (1.2-115.4); haemoptysis OR 9.6 (1.9-49.7); pulmonary embolism OR 8.0 (1.5-43.7); rheumatoid arthritis with rheumatoid factor OR 4.7 (1.6-13.9); and calculus of kidney and ureter OR 4.5 (1.2-17.1); all *P*-value <0.05.

Conclusions: In order to increase survival rates for patients with LC, those with a potentially curable disease need to be identified earlier. Pernicious anaemia has not been known to be associated with non-metastatic LC. Beside the well-known different warning signs for LC, pernicious anaemia could add as a risk marker to GPs identifications of non-metastatic LC patients in primary health care.

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Implementation and evaluation of a lung cancer multidisciplinary team communication tool for general practitioners in NSW, Australia.

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Background: Multidisciplinary care in lung cancer is considered best practice. MDT diagnostic and treatment decision making is frequently captured as free text during team meetings, but not routinely provided to general practitioners (GPs) responsible for patient care. This communication gap between hospital and primary care clinicians was identified as opportunity to conduct implementation research and improve patient care. This project aimed to develop, implement and evaluate a new lung MDT reporting template for GPs about lung cancer cases following MDT discussion. Specific objectives were to evaluate the timeliness, acceptability and appropriateness of the template.

Methods: GPs and two lung cancer multidisciplinary teams (MDTs) within Sydney Local Health District (NSW, Australia) participated. A reporting template was developed in consultation with key stakeholders. During implementation, the template was completed for all patients presented during the MDT by medical registrars and sent to each patient's GP within 48 hours. Evaluation measures included brief structured telephone interviews with GPs within 2 weeks of template receipt. Data were collated from the completed surveys and meeting minutes that documented implementation processes.

Results: Sixty-one GPs participated. Nearly all (96%) reported that the template was useful and relevant; 87% said it would be used for coordination and planning of their patient's treatment pathway. Most (90%) reported receipt in a timely manner, and 84% found it easy to interpret and used it in communication with the patient. Implementation facilitators included integration within work practices, while barriers included rotation of registrars, on-going training needs, and resource constraints.

Conclusions: This project describes the development, implementation and evaluation of reporting template for primary care clinicians from the lung cancer MDTs. GPs reported that the template was timely, acceptable and appropriate. Implementation facilitators and barriers were captured throughout the implementation phase. Future research will focus on adapting the template for other tumour groups.

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Lung cancer: trends in diagnostic interval

Authors: Sarah Price, Sarah Moore, Willie Hamilton.

Background: National initiatives aim to expedite cancer diagnosis by reducing the diagnostic interval (time between first feature of cancer in primary care and diagnosis). The Be Clear on Cancer campaigns (focussing on respiratory symptoms for lung cancer) began in 2010, and National Institute for Health and Care Excellence (NICE) guidelines on referral for suspected cancer were introduced in 2005 and revised in 2015. This study reports trends in diagnostic interval for lung cancer over 2000–2016.

Methods: Participants were Clinical Practice Research Datalink patients (aged ≥ 18 years) with newly diagnosed lung cancer between 1/1/2000 and 30/11/2016. Lung cancer features in current and previous NICE guidelines, including cough and dyspnoea, were identified in the year before diagnosis.

Results: 22,571 patients [n=12,625 (55.9%) men; n=9,946 (44.1%) women] were included in analyses. Mean (\pm SD) age at diagnosis was 71.7 (10.1) and 71.4 (10.7) years, respectively, for men and women. Cough or dyspnoea was the commonest initial recorded symptom, being the index feature in n=5,319 (38.8%) of patients in 2000–2009, increasing to n=4,921 (49.7%) in 2010–2016 (Figure 1). Median diagnostic interval was 125 (IQR 49–266) days in 2000–2009, rose to 146 (52–275) days in 2010–2014, and returned to 121 (47–253) days in 2015–2016 (Figure 2).

Conclusions: The results are consistent with the hypothesis that the 2010 Be Clear on Cancer campaign increased patient numbers consulting the GP for respiratory symptoms. Initially diagnostic intervals lengthened, suggesting that GPs may not have acted on these symptoms immediately, but only after the 2015 revision of NICE. If this interpretation is correct, the time of diagnosis may have been advanced as a result.

Figure 1. Cough/dyspnoea (% of the first recorded symptom)

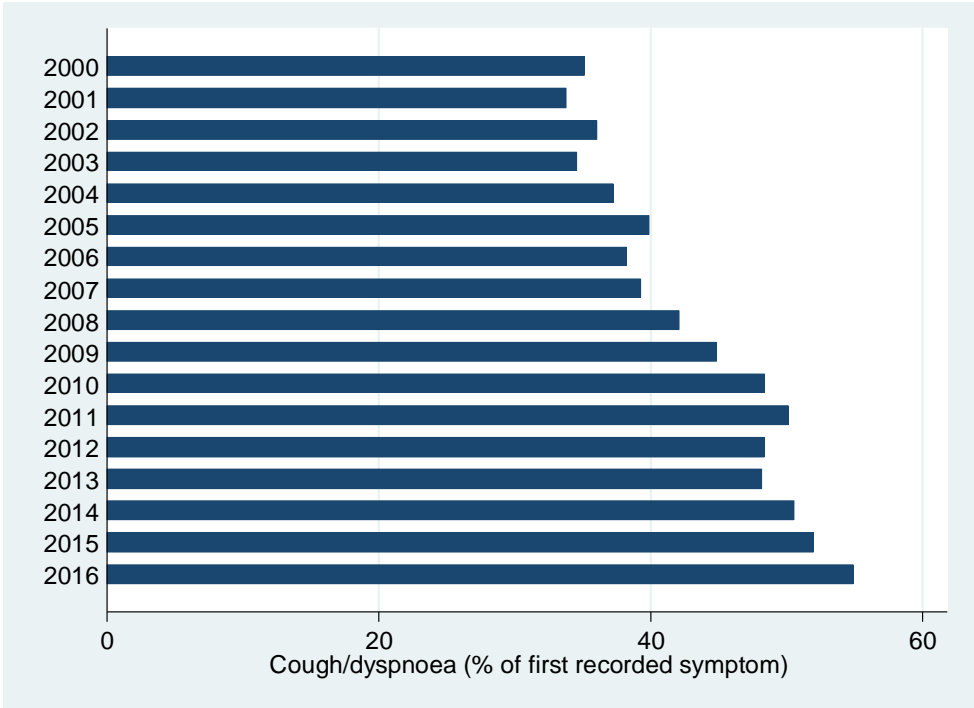
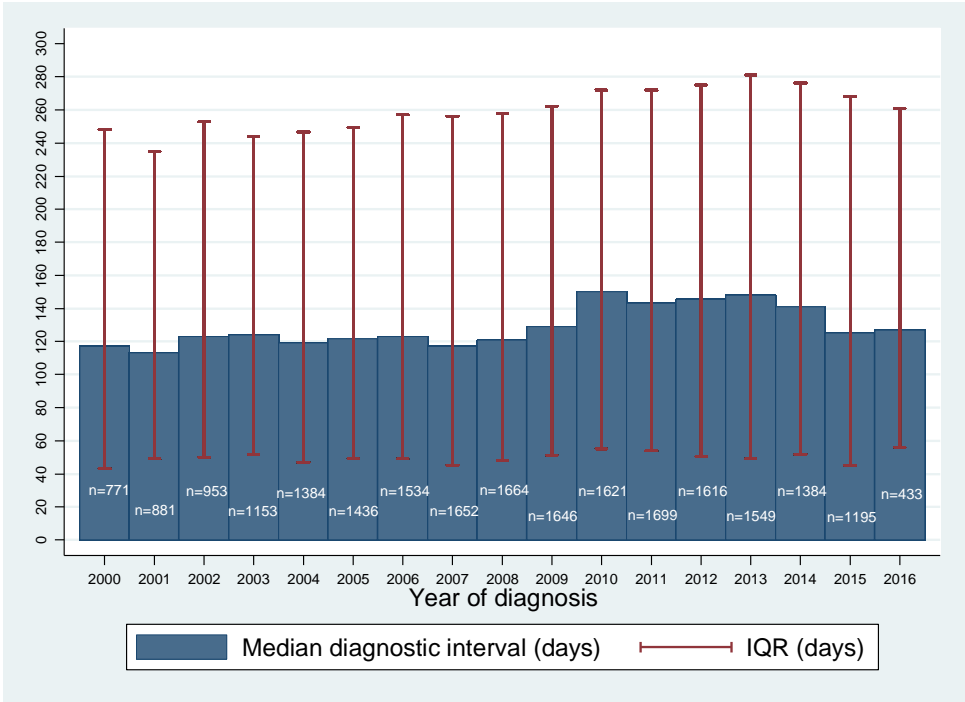


Figure 2. Median (interquartile range) diagnostic interval (days) for lung cancer, 2000–2016 (n=number of diagnoses)



Talk about cigarette smoking: a cross country comparative analysis of patients newly diagnosed with lung cancer in Denmark, England and Sweden

Authors: Hajdarevic S, Rasmussen BH, Bernhardson B-M, Malmström M, Nielsen TLO, Ziebland S.

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Background Lung cancer (LC) is the biggest cancer related cause of death worldwide and 85% of LC are smoking related. Denmark, Sweden and England have similar smoking rates, but there are differences in LC survival.

Methods A cross country comparison of whether, when and how people recently diagnosed with LC raised the topic of about smoking during narrative interviews. Patients diagnosed with LC within the last 6 months in Denmark (n=22), England (n=20) and Sweden (n=30) were interviewed at home. Thematic analysis was informed by literature on shame, blame and responsibility for ill-health.

Results Nearly all the English participants, including never smokers, talked about smoking, usually in the first few minutes of the interview. In contrast a third of the Swedish patients and a quarter of the Danish did not talk about smoking at all and around half of those who did only raised the subject in the latter part of the interview. At least some of the smokers (and ex-smokers) in all countries alluded to having felt blamed about their LC, but this was a far more dominant theme in the English patients' accounts. In all three countries long term ex-smokers and never-smokers did not attribute their symptoms to potential LC. Current smokers often assumed that they had a 'smokers cough', and English patients were reluctant to consult their GP, suspecting that their smoking would be 'blamed'. Danish and Swedish patients did not report that their smoking discouraged from consulting.

Conclusion The cross-country comparison regarding whether, when and how the patients newly diagnosed with LC talked about smoking indicate marked differences in the primacy given to cigarette smoking in patients accounts. Our findings suggest there may be cultural differences in the relationship between health behaviours, perceptions of responsibility and whether people consult the GP.

How to consider the social and material resources of ‘survivors’ after primary treatment for cancer: looking for clues using photo elicitation

Authors: Alison Bravington, Professor Miriam Johnson and Professor Una Macleod
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Background: The role of socioeconomic status in relation to cancer is largely defined in research literature using concepts such as income or educational level. As a result, our knowledge of how an individual’s social and material resources might affect their recovery from cancer treatment can be limited by demographic stereotyping. In this study, we aimed to unravel the ways in which social and material resources play a role in recovery for ‘survivors’ of first-line treatment for cancer.

Methods: Twenty-six participants who recently experienced treatment for primary breast, colorectal or prostate cancer took part in in-depth interviews investigating day-to-day life in the months following surgery, chemotherapy and/or radiotherapy. Twenty participants agreed to take part in photo-elicitation, using a digital camera to photograph anything significant to treatment and recovery. Photographs were used to provoke interview dialogue, and the data was analysed using constructivist grounded theory and situational analysis.

Results: Patients explained how the social worlds of family, workplace and clinic affected views about recovery, and how clinic talk and stories about survivorship inform the performance of illness in front of friends, family and medical professionals. Social relationships were more salient to recovery than participants’ level of affluence.

Conclusions: A focus on family histories, social dynamics at home and in the workplace, and previous experiences of loss and survival can help patients reframe life after treatment. The label ‘survivor’ was seen by many as incompatible with getting ‘back to normal’, and may not be a useful concept for all people treated with intent to cure.

Qualitative Analysis of Cancer Patients' Experiences of Their Illness: Developing a Comprehensive Metanarrative

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Background: Cancer is common and characteristically transformative of the patient's life perspective and sense of self and well-being. Many patients seeking to explore and cope with their experience of cancer participate in cancer support groups.

Methods: We qualitatively analyzed deidentified e-mail correspondences between cancer patients (N=15) and a support group counselor using grounded theory as described by Auerbach and Silverstein (2003). The analysis allowed us to create a theoretical metanarrative of the cancer experience using the patients' own words. A conceptual model was then created to provide interpretive framework for our metanarrative.

Results: Through cancer the cancer patient's understanding of life and perceived sense of self are typically disrupted. The journey through cancer may then be experienced as a psychosocial restructuring of life until a new sense of self is created. This is seen as mediated by three theoretical constructs of the patient experience; the logistics of cancer care, the relational aspects of cancer care, and the emotional and physical dimensions of cancer care. These three constructs were the context by which the patient advanced through renewed psychosocial well-being, which led to the fourth construct; establishing a new sense of self. This new sense of self within cancer may be found within life beyond cancer or peace with the end of life.

Conclusions: Cancer is typically disruptive including the patient's sense of self and well-being. The metanarrative and related conceptual model that we created may be of assistance to cancer survivors and their caregivers, including those participating in support groups, and the healthcare professionals working with them.

CARDIAC REHABILITATION TO INCREASE PHYSICAL ACTIVITY AMONG CANCER PATIENTS: IS IT FEASIBLE AND ACCEPTABLE?

Authors: G Hubbard¹, R Adams², A Campbell³, L Kidd⁴, SJ Leslie⁵, J Munro¹, A Watson⁵, R O'Carroll¹, H Mason⁶, S Manoukian⁶, N Mutrie⁷, S Haw¹, S Treweek⁸

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Background: There is strong evidence of exercise to aid recovery from cancer and secondary prevention. Yet, colorectal cancer survivors are currently not meeting the recommended physical activity levels associated with improving the chances of survival and quality of life. We evaluated whether referral of colorectal cancer patients to cardiac rehabilitation is a feasible and acceptable exercise intervention.

Methods: We conducted a pilot randomised controlled trial with embedded qualitative study supplemented with an economic evaluation. At baseline 41 post-surgical colorectal cancer patients, recruited from 3 hospital wards, were randomly assigned into two groups: an intervention group which received cardiac rehabilitation alongside cardiac patients and a no rehabilitation control group. Descriptive statistics were used to summarise trial parameters indicative of intervention feasibility and acceptability. 38 patients (colorectal cancer and cardiac) and 8 clinicians (colorectal cancer and cardiac) participated in interviews/focus groups and data were analysed thematically.

Results: Barriers to exercise for post-surgical colorectal cancer patients were protracted recoveries from surgery, on-going treatments and poor mobility. No adverse events were reported, suggesting that cardiac rehabilitation provides a safe exercise environment for cancer patients. Out of pocket expenses were small (£50). Cardiac rehabilitation increased cancer patients' confidence and motivation to exercise and offered peer support. Cardiac and cancer patients found exercising together acceptable.

Conclusions: Cardiac rehabilitation for colorectal cancer patients is feasible and acceptable, thereby challenging disease-specific rehabilitation models. We need a better understanding of the effectiveness of cardiac rehabilitation for increasing physical activity to improve survival and quality of life of cancer patients.

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Does early breast cancer treatment amplify risk of cardiac dysfunction in addition to other cardiac risk factors?

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Background: Breast cancer survivors are at risk of developing cardiac dysfunction due to cardiotoxic therapies. When the heart is exposed to cardiac risk factors, it might be more susceptible to additional damage by treatment. The aim of this study is to assess the relative contribution of cardiac risk factors on the risk of cardiac dysfunction in women treated for breast cancer with chemo- and/or radiotherapy as compared women without a history of cancer.

Method: This cross-sectional study included 350 women treated for breast cancer with chemotherapy- or radiotherapy more than five years ago and 350 age- and general practitioner (GP) matched controls. All participants received an echocardiography. Cardiac risk factors (cardiovascular disease, diabetes, dyslipidemia, and hypertension) were derived from the GP files, and smoking status was self-reported by participants. Cardiac dysfunction was defined as a left ventricular (LV) ejection fraction <54% or an age-corrected decreased LV diastolic function. Logistic regression analysis was used to analyze whether risk factors had an independent risk on cardiac dysfunction. Moreover, interaction on an additive or multiplicative scale was assessed between breast cancer treatment and cardiac risk factors.

Results: In our cohort, breast cancer treatment (OR2.4; 95%CI 1.4-4.0), and prior cardiovascular diseases (OR 2.5; 95%CI 1.3-4.7) were independently associated with an increased risk of systolic dysfunction. Diabetes (OR2.5; 95%CI1.3-4.7), dyslipidemia (OR2.0; 95%CI1.3-3.0) and hypertension (OR2.1; 95%CI1.4-3.1) were, independently associated with diastolic dysfunction. There was no interaction found, between breast cancer treatment and cardiac risk factors, nor on a multiplicative scale, nor on an additive scale.

Conclusion: Breast cancer treatment has an independent effect on systolic dysfunction. Furthermore, cardiovascular disease has an independent effect on systolic dysfunction in women. Diabetes, dyslipidemia and hypertension have an independent effect on diastolic dysfunction. The combination of the cardiac risk factors and breast cancer did not enhance the risk of cardiac dysfunction.

Cancer Research UK Strategic GP Lead Programme: Improving cancer awareness and care from practice to network level.

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Background: From 2015, Cancer Research UK (CRUK) has funded new Strategic GP Lead (SGPL) roles within English Strategic Clinical Networks. The aim was to address gaps in primary care leadership at a regional level across England. By working in a leadership and educational capacity to facilitate change and enable learning, development and action in primary care settings, these new roles aim to support SCNs in their work to improve cancer pathways and reduce variation through the sharing of best practice and support innovation. A qualitative evaluation of the programme was conducted to understand the impact of the SGPL role. Specifically to understand good practice, the challenges faced and how these have been overcome, and the impact of their strategic role on health professional audiences.

Methods: Qualitative interviews were conducted with a range of stakeholders; GP Leads (n=11), CRUK Facilitators (n=9), Strategic Clinical Network managers (n=7) and programme beneficiaries (n=10). Thematic analysis was performed on the interview data. Examples of quantified outcomes were gathered to validate interview findings and explore wider impact.

Results: Examples of the impact of the SGPL role include; developing and delivering GP training in cancer prevention, early diagnosis and safety netting, developing new resources, improving communication at the primary/secondary care interface, driving systematic, network-wide improvements on cancer pathways and providing a primary care clinical perspective at strategic planning level. CRUK SGPLs were highly valued by other stakeholders.

Conclusions: CRUK Strategic GP Leads have had a significant impact on the planning and implementation of cancer pathways at SCN/Alliance level, and on raising health professionals' awareness of best practice in cancer prevention and early diagnosis through educational initiatives.

Working with Primary Care to improve cancer outcomes: The Cancer Research UK Facilitator Programme

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Background: The Cancer Research UK Facilitator Programme supports healthcare professionals and organisations to improve prevention and early diagnosis. Facilitators provide face-to-face support to help professionals adopt best practice in cancer prevention and early diagnosis, tailored to local needs.

Methods: Two mixed-methods retrospective evaluations investigated the impact and perceptions of the programme of within early adopter areas (Cheshire & Merseyside and London), and in a devolved context in NHS Greater Glasgow & Clyde. A prospective mixed methods evaluation provides evidence of the number of engagements with Primary Care across the cancer pathway and the outcomes of these engagements.

Results: Retrospective evaluation demonstrated that after 1 year, CCGs covered by the Facilitator programme had almost double the uptake of cancer improvement activities compared to CCGs not covered by the programme. The programme in NHS Greater Glasgow and Clyde had visited and supported 103 practices within its first year (rising to 70% coverage by year two). Prospective evaluation of the whole programme (over 6 months) demonstrated that, on average, the programme engages 876 (SD=221) practices each month. The main topics covered are, bowel screening, cancer prevention and promoting and supporting audit. The programme has encouraged practices to discuss cancer and review their performance as well as having a wider influence (CCG, health board) on strategies and processes, e.g. referral forms.

Conclusions: The evaluations have demonstrated the value of this approach and have led to development of what is offered across the UK. This model appears to be an effective way of engaging primary care practices in improving cancer outcomes (such as bowel screening uptake, referral processes as well as the relationship between primary and secondary care).

RAISING ADOLESCENT CANCER AWARENESS AND CANCER COMMUNICATION IN FAMILIES

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Background: People who have greater awareness of signs and symptoms that might be suggestive of cancer, talk about cancer within the family, and have fewer help-seeking barriers are more likely to seek medical help quickly. If the cancer is detected early then a person has a much better chance of living a long and healthy life. Little is known about improving teenage cancer awareness.

Methods: At baseline 2,173 12/13 year olds from 20 schools were randomly assigned into two groups: an intervention schools group which received a 50 minute psycho-educational presentation to raise cancer awareness and a control schools group. Multiple linear regression models were used to examine differences in the number of cancer warning signs recognised by teenagers, cancer communication in the family, and help-seeking barriers in intervention schools compared to control schools.

Results: There was a statistically significant difference in the number of cancer warning signs recognised by teenagers in intervention schools compared to teenagers in control schools at 2-week follow-up (β 0.689, $p < 0.001$, CI 0.351 - 1.028) and 6-month follow-up (β 0.471, $p = 0.012$, CI 0.103 - 0.838). Teenagers in intervention schools were two and a half times more likely to discuss cancer at 2-week follow-up compared to teenagers in control schools (β 0.992 $p = 0.014$, CI 0.260-1.725, OR 2.698, 1.297-5.613). No differences were observed in help-seeking barriers.

Conclusions: School-based interventions are easy to deliver, require little resource and improve teenage cancer awareness and cancer communication. We need more research to find out if the intervention is able to shift health behaviours such as self-examination and cancer screening among parents/grandparents.

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The spectrum of presenting symptoms of cancer patients and symptom-specific diagnostic intervals: a review of current evidence to help guide the targeting of early diagnosis initiatives

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Background: Early diagnosis interventions such as symptom awareness campaigns and the development of primary care referral guidelines may be better targeted by a refined appreciation of the nature and frequency of specific cancer symptoms and their associated diagnostic intervals, pre- and post-presentation.

Methods: We aimed to examine available evidence on the frequency of presenting symptoms and associated diagnostic intervals among patients diagnosed with any of 28 common and rarer cancer sites. Studies were identified by searching for the MeSH terms “symptom”, “diagnosis”, and “cancer” in Medline, and supplemented by searching reference lists and expert knowledge. Risk of bias was assessed using a proprietary tool based on the RECORD guidelines and the QUADAS-2 appraisal instrument. Frequencies of reported symptoms were extracted and summarised by cancer, as the great majority of studies were cancer-specific. Evidence regarding associated diagnostic intervals was summarised using a narrative synthesis approach.

Results: No high quality evidence on the frequency of presenting symptoms before diagnosis could be identified for 13 mostly rarer cancer sites. For the remaining 15 cancer sites, a total of 40 case-control and cohort studies based on primary care records were identified. Among these, colorectal (n=7 studies), pancreatic (n=5 studies), and lung (n=5 studies) cancers were the most frequently studied. The reported frequencies of a given symptom often varied substantially across different studies, likely reflecting the highly heterogeneous methodologies and definitions used. Available evidence on the associated diagnostic timeliness of symptoms was limited to three cancer sites but indicated large variation in the length of diagnostic intervals by symptom.

Conclusions: Population-level evidence on presenting symptom frequency is predominantly based on studies of patients with a specific cancer site, and there is only limited evidence on associated diagnostic intervals. More studies on the ‘symptom signature’ of different cancers, and symptom-specific variation in diagnostic timeliness are needed.

Symptom Awareness in Paradoxical Cancer Mythologies

Authors: Sara Marie Hebsgaard Offersen, Mette Bech Risør, Peter Vedsted, Rikke Sand Andersen. Research Centre for Cancer Diagnosis in Primary Care (CaP), The Research Unit for General Practice, Institute of Public Health, University of Aarhus

Background: Cancer has become an increasingly multifaceted social field, where focus on lifestyle factors and carcinogens in our environment interacts with genetic dispositions and viral infections. A sense of fate and notions of morality are often read into this complex field as well. Preventive measures to take charge over cancer must play into this complexity, resulting in various biomedical discursive arenas of e.g. genetic testing and counselling, screening, vaccination and focusing on lifestyle changes, symptom awareness and healthcare seeking practices.

Cancer is more than a disease affecting its victims. Cancer is a cultural phenomenon that reaches far into society at large and into intimacies of everyday life – even when the disease is not there. We wish here to address how different ways of ‘knowing’ cancer – what we call cancer mythologies – manifest in the everyday lives of people and how they shape the experience of potential cancer symptoms.

Methods: This discussion draws on long-term ethnographic fieldwork in a Danish middle class community exploring symptoms and healthcare seeking practices among non-cancer-afflicted citizens.

Results: The analysis describes a range of different and paradoxical cancer mythologies and shows how they provide multiple ways of understanding and dealing with cancer and potential cancer symptoms in everyday life. It also points to a disparity between what can be called an illusory certainty in the public health rhetoric on alarm symptoms and the lived ambiguity and uncertainty of sensing a potential cancer symptom.

Conclusions: The perspective of cancer mythologies as ways of understanding and dealing with the cultural phenomenon of cancer in everyday life provides an understanding of reactions to e.g. potential cancer symptoms and illustrates how ideas such as symptom awareness becomes part of the cultural phenomenon of cancer in both intended and unintended ways.

Women from higher educational backgrounds are more ‘symptom aware’ but less likely to anticipate seeking help for an unfamiliar breast cancer symptom: a vignette-based study

Authors: Marcu A, Vedsted P, Lyratzopoulos Y, [Whitaker KL](#).

Background: Socioeconomic inequalities in recognising signs and symptoms of cancer may result in inequalities in prompt help-seeking and prognosis of breast cancer. We hypothesised that a) higher education would be associated with higher likelihood of mentioning cancer as a potential cause of a nipple rash; b) higher education would be associated with higher likelihood of seeking help for a nipple rash; and c) mentioning cancer would mediate the association between education and help-seeking.

Method: Women aged ≥ 47 years ($n=961$) were purposively recruited (by education) online to complete vignette-based survey that included nipple rash as an unfamiliar symptom of breast cancer. Women completed questions relating to medical help-seeking (Yes/No), symptom concern and cancer attribution.

Results: Despite educational differences in likelihood of mentioning cancer (26% of women with no formal education vs. 27% of women with mid-education and 40% of women with a degree or higher mentioning cancer as a possible cause of the nipple rash), women with a degree or higher (63%) or mid-education (64%) were less likely to anticipate seeking help for the nipple rash than women with no formal qualifications (73%). Path analysis adjusting for symptom concern as a potential confounder confirmed that higher education was associated with higher likelihood of mentioning cancer ($p<.001$), but showed no subsequent association between likelihood of mentioning cancer and help-seeking. Thus there was no indirect (mediated) relationship between education and help-seeking ($p>.05$). However, there was a direct effect of education on help-seeking ($p<.05$) where lower education was associated with being more likely to anticipate seeking help for a nipple rash.

Conclusion: Socioeconomic inequalities in stage at diagnosis and survival of breast cancer may not be explained by lower likelihood of suspecting cancer and subsequent impact on help-seeking. Reducing inequalities in stage at diagnosis will involve understanding a broader range of bio-psycho-social factors.

Interventions to improve the uptake of cervical cancer screening among lower socioeconomic groups: a systematic review

Authors: Imogen Rees, D Jones, H Chen, U Macleod

Background: Cervical cancer is the fourth most common cancer in women worldwide, with an estimated 528,000 cases diagnosed in 2012. Around 85% of all diagnoses and 90% of all deaths from cervical cancer occur in less developed regions. Whilst rates of screening have increased in recent years, there is a marked disparity in the uptake of screening among less developed countries and underserved populations. The aim of this review is to review the evidence on the effectiveness of interventions to improve the uptake of cervical cancer screening among underserved groups.

Method: A protocol was developed and registered on the prospero database. A systematic literature search was undertaken for relevant papers using MEDLINE, CINAHL, EMBASE and the Cochrane Register of Controlled Trials (CENTRAL). Grey literature was searched using the OpenGrey database. Data was extracted on study participants, setting, intervention and control using a pre-defined extraction tool and a full quality assessment was undertaken using the Cochrane risk of bias tool.

Results: The search yielded 13 studies of mixed quality. The interventions were categorized into 4 types; HPV self-testing, lay health advisors, culturally specific education and outreach. The review has found strong evidence in two large randomized controlled trials for the use of HPV self-testing to increase cervical screening uptake. There has been varying success using lay health workers and culturally specific educational approaches with half the included papers reporting a statistically significant increase in screening uptake.

Conclusions: HPV self-testing can improve uptake of cervical cancer screening amongst low socioeconomic groups. This is a relatively new method of cervical screening which has been shown to be reliable and cost effective. The use of lay health advisors and education showed some benefit and does have potential to increase screening rates.

Socioeconomic inequalities in colorectal cancer screening participation in the population-based programme in Barcelona

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1)IDIAP Primary Care Cancer Research Group, Barcelona, Spain; 2) Preventive Medicine and Hospital Epidemiology Department, Hospital Clínic, University of Barcelona, Spain; 3) Hospital del Mar Medical Research Institute, Barcelona, Spain.

Background: Organised population-based colorectal cancer screening (CRCS) using the immunological faecal occult blood testing has the potential to reduce overall colorectal cancer mortality. However, socioeconomic variation in screening uptake could exacerbate existing inequalities in mortality. The aim of this study was to assess the association between socioeconomic status and CRCS programme's participation.

Methods: Cross-sectional study including individuals aged 50 to 69, invited to participate in the second round of CRCS (2012-2013). The main dependent variable was participation in the screening programme. The main explanatory variable was the census area socioeconomic deprivation index, grouped into five socioeconomic deprivation groups based on quintiles (fifth quintile representing the most deprived). Other adjusting explanatory variables were: age, sex, Charlson index, tobacco and alcohol. Data were collected using the primary care electronic medical and the screening programme records, maintaining patient confidentiality. Statistical analysis included the chi-square test (categorical variables), Wilcoxon test (numerical variables) and logistic regression analysis on -Markov Chain Monte Carlo- imputed data.

Results: A total of 95,816 individuals were included (median age 58 years and 54.1% women). Participants in the CRCS programme (51.4% of the sample) presented a statistically significant higher proportion of women, older age, lower Charlson score, tobacco and alcohol consumption, and a major proportion in the second and third quintile categories of the socioeconomic deprivation index ($p < 0.001$). Multivariate analysis showed lower participation in the quintiles with lower and greater socioeconomic deprivation: OR 0.84 (95% CI 0.81-0.88) in the first quintile, 0.78 (0.74-0.82) in the fourth and 0.62 (0.58-0.65) in the fifth.

Conclusions: Socioeconomic deprivation is associated with less participation in the CRCS. However, this lower participation is also observed in the quintiles with less deprivation, possibly due to screening performed outside the population-based programmes. These results highlight the need to understand the causes of socioeconomic gradients in screening participation.

Factors associated with screen-detected breast cancer across five Canadian provinces: a CanIMPACT study

Authors: Marcy Winget¹, Patti A. Groome², Kathleen Decker^{3,4}, Cynthia Kendell⁵, Alyson Mahar², Mary McBride⁶, and Eva Grunfeld^{7,8} for the CanIMPACT Team

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Background: Breast cancer screening is intended to identify cancer in early stages when prognosis is better and treatments less invasive. We describe Canadian inter- and intra-provincial variation in the percentage of screen-detected cases and identify factors related to having a screen-detected versus a non-screen detected breast cancer.

Methods: Breast cancers diagnosed from 2004/7 to 2010/11/12 in 5 Canadian provinces were included. Standard provincial datasets were created using screening program and claims data. A common algorithm (Alberta, Ontario) or variable from the screening dataset (British Columbia, Manitoba, Nova Scotia) was used to identify the mode of diagnosis (screening versus not). Relationship between screen-detected cancer and several demographic, clinical and healthcare utilization factors were explored.

Results: The percentage of screen-detected breast cancers varied from 25 to 40 percent across provinces; it ranged 43 to 51 percent for those aged 50-69. Within provinces, the percentage of screen-detected cancers varied across regional health authorities by a low of 1% to a high of 33%. Urban residence was positively associated with screen-detection in some provinces and negatively in others. Women in the lowest neighborhood income quintile had the smallest proportion of screen-detected cancers; the absolute difference from those in the highest quintiles ranged from 3.3-11.5% across provinces. High continuity of care with a usual primary care provider was positively associated with having a screen-detected cancer compared to those with no usual care provider.

Conclusions: The proportion of screen-detected breast cancers varied significantly across and within provinces suggesting geographic variability in access to screening services. Variation across provinces in terms of factors associated with screen-detected breast cancer also likely reflect access issues. The positive association of high continuity of care with screen-detection in all provinces suggests that regular care with a primary care physician is an important factor in improving screening rates and detection.

Safety netting in healthcare consultations: A scoping review

Authors: [Daniel Jones](#), L Dunn, E Mitchell, I Watt, U Macleod

Background: Ensuring patient safety is vitally important. One potential mechanism to increase patient safety is through a consultation technique known as safety netting. The term safety netting is widely recommended in national guidelines and models of the consultation. However, a variety of different definitions and contents exist with no consensus on when safety netting should be used and what advice or actions it should contain.

Method: A scoping review using an established framework, reported according to the PRISMA guidelines.

Results: In total, 55 studies were included in the review. Safety netting was defined as a consultation technique to provide information to patients on red flag symptoms and plan for future appointments. Studies suggested safety netting may also include the follow up of investigations and hospital referrals and medico-legal protection for the health professional. 27 studies suggested when safety netting should be used. These studies suggested that safety netting in the consultation may take place in most patient contacts but is vital when consulting with children, the acutely unwell, patients with multimorbidity and those with mental health problems. 36 studies gave advice on what information safety netting should include. Most agreed that safety netting advice should include information on the natural history of the illness, advice on worrying symptoms to look out for and specific information on how and when to seek help.

Conclusions: Safety netting is more than solely the communication of uncertainty within a consultation; it should include information and plans for follow up as well as, importantly administrative aspects such as the communication of test results and management of hospital communication. The findings from this scoping review have been used to develop an updated definition of safety netting as well as a model of safety netting which includes actions for different end points of the consultation and a safety netting checklist.

Comparative analysis of patient interviews about their lung or bowel cancer diagnosis in England, Denmark and Sweden: The use of safety-netting in primary care

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Aims: To illuminate patterns observed in International Cancer Benchmarking Programme studies by extending understanding of potentially modifiable factors known to influence early identification and diagnosis of cancer.

Methods: Cross-country comparison with qualitative analysis of in-depth interview accounts of the pre-diagnostic process in lung or bowel cancer. One hundred and fifty five women and men, aged between 30 and 90 years old, diagnosed with lung or bowel cancer in the six months before interview. Participants recruited through clinics, social media, support groups and word of mouth. Interviews collected by social scientists or nurse researchers, mainly in participants' homes, in England, Denmark and Sweden during 2015.

Results: Patients commonly had difficulties in interpreting diffuse bodily sensation and symptoms and deciding when to consult. There were examples of swift referrals by Primary Care Professionals in all three countries. In England, and to some extent Denmark, patients described extended periods of symptom appraisal, influenced in part by concerns about overstretched primary care services and difficulty making GP appointments. These issues were far less evident in the Swedish accounts. All countries also had descriptions of repeated visits, sometimes with many intervening weeks, to primary care before referral. However, Swedish patients described leaving each consultation with a clear plan about what would happen next if the symptoms did not resolve. People in England and Denmark reported that they had been uncertain what they should do if symptoms persisted, or re-occurred.

Conclusion: This qualitative comparative analysis support and extend understanding of the pivotal role of primary care consultation in explaining variations in cancer stage at diagnosis. If clear action plans, backed up with safety netting, were used in all consultations involving potential cancer symptoms then uncertainty, false reassurance and the inefficiency and distress of multiple consultations could be avoided.

Predicting prostate cancer progression: Associations between routine primary care data and prostate cancer outcomes

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Background: Prostate cancer is the most common cancer diagnosed in males in the UK, and the second most common cause of cancer death amongst men. However, 5-year age-standardised survival for prostate cancer patients is 83.6%, so many men live with the disease rather than dying from it. Current treatments available for prostate cancer have significant associated morbidity, and the recently published PROTECT trial suggested there was no difference in prostate-cancer specific or all-cause mortality between active treatment or surveillance. Identifying the minority of newly diagnosed prostate cancer cases that will be aggressive in nature would allow more informed treatment discussions between patients and their doctors.

Methods: This retrospective cohort study will utilise the Clinical Practice Research Datalink (CPRD) to identify men with a new diagnosis of prostate cancer between 01/01/1987 and 31/07/2016, and link this with cancer registry and Office for National Statistics (ONS) mortality data. Exposure to a priori determined clinical, pharmacological and biochemical risk factors for prostate cancer mortality will be measured from the CPRD records. Cox proportion hazard regression and survival analysis using flexible parametric models will be utilised to determine factors associated with mortality in men with prostate cancer accounting for competing risks of other causes of death.

Results: 57,318 men in CPRD with a new diagnosis of prostate cancer in the study period will be included, of whom 22,080 died. The most prevalent risk factors prior to diagnosis were a history of tobacco smoking (39%), Aspirin use (34%) and Simvastatin use (25%).

Conclusions: Preliminary analysis of associations between risk factors and prostate cancer specific and all-cause mortality will be presented at Ca-PRI 2017. Relevant identified risk factors will be combined with metabolomic biomarker data to develop a risk-prediction model for prostate cancer progression.

Prognosis of cancer in relation to a person's habitual consultation pattern in general practice

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Background: Poor cancer survival in Denmark may be attributable to sub-groups of cancer patients who are diagnosed at advanced disease stages. It has not been investigated if different habitual use of general practice is associated with the prognosis after a cancer diagnosis.

We aimed to estimate the prognosis of cancer patients in sub-groups of cancer patients, stratified by their habitual use of general practice.

Material and methods: We performed a population-based cohort study of 123,943 incident Danish cancer patients aged 50-89 years and diagnosed in 2009-2013. We estimated the association between habitual GP use and all-cause mortality using hazard ratios (HR) estimated by Cox proportional hazards regression analysis. We also estimated the association between consultation pattern and distant tumour stage (SEER stage) by logistic regression estimates of odds ratios.

Preliminary results: Habitual GP use was associated with all-cause mortality; HR=1.39 (95%CI: 1.33 to 1.44) in patients who had not seen their GP during the 19-36 months before their cancer diagnosis compared to patients who had seen their GP three-five times. We found a 6.1% point difference in absolute one-year survival between patients who saw their GP three-five times during an 18-month period (81.7%) and patients who did not consult their GP (75.6%). Use of GP was inversely associated with distant tumour stage. The odds of having distant tumour stage was 1.46 (95%CI: 1.38-1.57) times higher in patients who had not seen their GP than in patients who had seen their GP three to five times in the 19-36 months prior to their cancer diagnosis.

Conclusion: A strong association was found between low habitual use of general practice and both increased short-term mortality and higher risk of distant tumour stage. The excess mortality associated with low GP use accounted for approximately 2% of the total number of cancer deaths in Denmark.

Multimorbidity and Cancer mortality in UK Biobank data: A nationally representative cohort

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Background and Methods: Cancer patients have high prevalence of multimorbidity (prevalence of two or more long-term health conditions- LTCs), but the relationship between multimorbidity and cancer outcomes remains unclear. The UK Biobank is a major national health resource with the aim of improving prevention, diagnosis and treatment of a wide range of serious and life-threatening illnesses. UK Biobank recruited 500,000 people aged between 40-69 years in 2006-2010 from across the country to take part in this project. We classified multimorbidity into three categories: no LTCs, 1-3 LTCs and four or more LTCs. We analysed the relationship between multimorbidity categories and cancer mortality over seven year follow-up period using Cox's multivariable proportional hazards regression.

Results: Of the 499,860 participants, 38623 (7.7%) reported a diagnosis of cancer at the time of recruitment. The rate for cancer mortality was 1.68% at seven years (8386 events); median follow up duration was 84 months (IQR 76, 93 months). Participants with 1-3 LTCs were 1.5 times more likely to die due to cancer (Hazard Ratio- HR 1.69; 95% Confidence intervals-CI 1.59-1.79), as compared to participants without any LTCs. Participants with four or more LTCs were more than twice likely to die due to cancer (HR 2.21; 95% CI 2.02-2.42). We adjusted the results for age, sex, socio-economic status, smoking and alcohol consumption, body mass index and physical activity levels.

Conclusion: In a large nationally representative sample, multimorbidity was strongly associated with cancer mortality. These findings may have significant implications on the policy and practice of management of cancer in primary care. Further analysis is ongoing in this cohort to study the relationship between multimorbidity and other cancer related outcomes.

Multimorbidity over time among childhood, adolescent, and young adult cancer survivors in British Columbia, Canada

Authors: Tang T¹, [McBride ML¹](#).

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Background: Little is known about levels of multimorbidity among young cancer survivors over time, which would be useful for follow-up care services planning. This study describes the risk of multiple late morbidities by number of different types of morbidity (Aggregated Diagnosis Groups (ADGs)) for young cancer survivors, and investigates whether the survivors are at an increased risk of multiple late morbidities compared to the general population.

Methods: The survivor group consisted of patients diagnosed with cancer aged 0 to 24 years from 1970 to 2005, resident of BC at diagnosis, who survived five or more years from diagnosis, were alive from January 1, 1991, and linked to the provincial health insurance plan from January 1, 1991 to Dec 31, 2010, or death, or loss to follow-up. A population comparison group consisted of five randomly-chosen British Columbia residents from the universal health insurance Client Registry for each survivor, individually matched by gender and birth year and followed for the same period as the matched survivor.

Results: Survivors diagnosed as children (aged 0 to 14 years (n=1892)), adolescents (aged 15-19 years (n=1074)), and young adults (aged 20-24 years (n=1596)) were analysed separately; at 5-year intervals from 5 years post-diagnosis. By 30 years post-diagnosis, 7.7%, 6.4%, and 7.8% survivors had died from each age at diagnosis group, compared to 0.7%, 0.9%, and 1.3% of comparators. Approximately 0.9%, 2.9%, and 2.8% of survivors respectively experienced no recorded morbidity (0 ADGs), compared to 7.1%, 6.6%, and 6.0% of comparators. An estimated 46.7%, 50.3%, 48.7% of survivors in each group experienced 7 or more different types of morbidity (as classified by ADGs) since diagnosis, compared to 21.3%, 28.4%, and 30.6% of the general population group.

Conclusions: Primary care physicians need to be aware of ongoing excess risks of multimorbidity among these survivors.

Short-term breast cancer survival in relation to ethnicity, stage, grade and receptor status: national cohort study in England.

Authors: Møller H, Henson K, Lüchtenborg M, Broggio J, Charman J, Coupland VH, Davies E, Jack RH, Sullivan R, Vedsted P, Horgan K, Pearce N, Purushotham A.

Background: In the re-organisation of cancer registration in England in 2012, a high priority was given to the recording of cancer stage and other prognostic clinical data items.

Methods: We extracted 86,852 breast cancer records for women resident in England and diagnosed during 2012-2013. Information on age, ethnicity, socio-economic status, comorbidity, tumour stage, grade, morphology and oestrogen, progesterone and HER2 receptor status was included. The two-year cumulative risk of death from any cause was estimated with the Kaplan-Meier method, and univariate and multivariate Cox proportional hazards regressions were used to estimate hazard ratios (HR) and their 95% confidence intervals (95% CI). The follow-up ended on 31 December 2014.

Results: The completeness of registration for prognostic variables was generally high (around 80% or higher), but it was low for progesterone receptor status (41%). Women with negative receptor status for each of the oestrogen, progesterone and HER2 receptors (triple-negative cancers) had an adjusted HR for death of 2.00 (95%CI 1.84-2.17). Black women had an age-adjusted HR of 1.77 (1.48-2.13) compared with White women.

Conclusions: The excess mortality of Black women with breast cancer has contributions from socio-economic factors, stage distribution and tumour biology. The study illustrates the richness of detail in the national cancer registration data. This allows for analysis of cancer outcomes at a high level of resolution, and may form the basis for risk stratification.

The Primary Care Collaborative Cancer Clinical Trials Group – looking back to move forward

Authors: Milley, K., Chima, S., Matthews, T., Emery, J.

Background: The Primary Care Collaborative Cancer Clinical Trials Group (PC4) was established in 2009 to increase research capacity and the number of cancer clinical trials in primary care. PC4 created a network of researchers and provided opportunities for peer and consumer support in the development of research projects including concept development, trial design and funding applications. Our primary goal was to improve the quality of grant applications to increase the amount of funded research in cancer and primary care.

Methods: We reviewed our achievements from 2009-2016. We calculated the total number of supported projects, recruitment sites, participants and the total research funding secured. Our network was evaluated by reviewing the demographics of members. The dissemination of research was determined by quantifying the number and impact of publications and conference activity. Involvement in policy development was determined by PC4 committee member representation in Australian Government initiated committees.

Results: PC4 has supported 48 new research concepts, with 77% being successfully funded, receiving nearly \$AUD 10 million dollars. Projects have recruited nearly 7000 patients, carers and health professionals from more than 150 sites. Membership average annual growth was 22.9% and members represent over 30 health disciplines, from 171 organisations. PC4 committee members are active on 28 committees in 11 national organisations. There have been 69 publications and 99 conference presentations producing nearly 1100 citations with an average Altmetric score of 7.7.

Conclusions: PC4 is a unique Australian resource that has demonstrated a successful model for building research capacity to conduct primary care cancer trials. This model has facilitated the successful funding of large-scale primary care based cancer clinical trials across the cancer continuum. Supported research has produced a significant contribution to the knowledge base of primary care in cancer covering basic research, translation, implementation and its members have made important contributions to health policy in Australia.

Diagnostic Journeys in Myeloma (DJiM): Quantifying intervals to diagnosis and assessing influences in the timely diagnosis of myeloma

Authors: T Seale; L Kennedy; C Fegan; E Litt; N Williams; R D Neal

Background: Myeloma is hard to diagnose with longer intervals to diagnosis. Appreciation of the relative contribution of intervals within the 'Total Interval,' with exploration of patient and health professional factors and interactions, is likely to increase understanding of where targeted timely diagnosis efforts should be made.

Methods:

- Phase I - Survey of newly diagnosed myeloma patients, their diagnosing GP and haematologist. Quantification of time intervals and influences with descriptive statistics, correlation and regression to report and measure significance.
- Phase II - Interviews, with purposively sampled participants from prompt longer and asymptomatic journeys and respective GPs, analysed using Framework and thematic analysis.
- Interpretation of datasets to explore and identify timely diagnosis initiatives.

Results: We report selected results from Phase I, 84 patients, 54 GPs and 83 haematologists and Phase II, findings from 12 patient and 7 GP qualitative interviews for:

Intervals to diagnosis: Median, IQRs and 90th percentiles of patient, primary care, secondary care, diagnostic, time to diagnosis, treatment and total intervals.

Symptom analysis: number, type, first and grouped symptoms pre-diagnosis. Awareness and response to symptoms, reflective opinions of symptom duration from the qualitative interviews.

Activity within primary care: Frequency and type of presentation, GP response to symptoms, referral patterns. Qualitative themes from GPs on identifying, investigation and referring.

Secondary care pathway: Number of teams active in diagnosis; consequence of referral patterns and emergency presentation. Patient themes of system failures.

Conclusions: We have identified multiple influences affecting intervals to diagnosis. Awareness of symptoms, including systemic features, in patients and GPs can reduce miscommunication of their seriousness and promote effective investigation and identification; specifically protein electrophoresis should be utilised earlier in the assessment of patients with pain, with unrelated trauma, and systemic features. Targeted referral of myeloma patients from primary care using a cancer 'tag' is paramount to avoid longer total intervals.

The breast cancer diagnostic interval across five Canadian provinces: a CanIMPACT study

Authors: [Patti A. Groome](#)¹, Marcy Winget², Kathleen Decker^{3,4}, Li Jiang¹, Cynthia Kendell⁵, Alyson Mahar¹, Mary L. McBride⁶, and Eva Grunfeld^{7,8} for the CanIMPACT Team

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Background: A long breast cancer diagnostic process can affect patient anxiety and survival. Primary care physicians (PCPs) play a role in ensuring timeliness by monitoring and/or coordinating the follow-up of positive screening tests and suspicious signs of cancer. Health systems play a role by providing timely diagnostic services. We describe the breast cancer diagnostic interval length across Canada and the involvement of PCPs.

Methods: We studied breast cancer patients diagnosed from 2004/7 to 2010/11/12 in the Canadian provinces: British Columbia, Alberta, Manitoba, Ontario, and Nova Scotia. Using administrative data, we created parallel population-based, provincial-level datasets and ran common analyses. The diagnostic interval was defined from the screening mammogram to the diagnosis for screen-detected and from the first referral/test ordering date to the diagnosis for symptomatic patients. We captured breast cancer-related encounters during the interval including those to PCPs.

Results: Across provinces, the median diagnostic interval varied by 6 days (29 to 35 days). Screened patients were diagnosed more quickly (median 2-12 days quicker). The 90th percentile diagnostic interval was 84-126 days longer in symptomatic patients. PCP use during the interval ranged from a mean of 2.7 (± 2.4) visits to 0.5 (± 1.3). The number of patients who did not see a PCP varied from 20.4% to 66%. Within provinces, the median diagnostic interval across regional health authorities (RHAs) ranged from 12 days in one province to 34.5 days in another and the 90th percentile ranged from 58-143 days.

Conclusions: The median breast cancer diagnostic interval does not vary at the provincial level but this masks intra-provincial variations and issues at the 90th percentile. PCPs do not appear to play a large role in the diagnostic process. Some RHAs achieved more timely diagnoses. Understanding those health care systems may provide guidance to improving the interval in other jurisdictions.

Improved survival and lead-time bias in standardised cancer pathways: a study of incident cancer patients diagnosed through Danish primary care

Authors: [Henry Jensen](#) & Peter Vedsted

Research Centre for Cancer Diagnosis in Primary Care, Research Unit for General Practice, Department of Public Health, Aarhus University, Bartholins Allé 2, DK-8000 Aarhus C, Denmark

Background: Implementation of standardised Cancer Patient Pathways (CPPs) has facilitated more timely diagnosis of cancer patients in Denmark. At the same time, the cancer survival has improved. More timely diagnosis may introduce lead-time bias by extending the period from diagnosis to death, suggesting an illusory benefit of CPP implementation on survival.

We aimed to analyse the potential effect of lead-time on survival resulting from the expedited cancer diagnosis facilitated by CPP implementation for incident cancer patients diagnosed through Danish primary care.

Material and methods: We compared survival rates for the first (n=2,041) and the last (n=3,857) cohort of the Danish Cancer in Primary Care Cohort, corresponding to before and after CPP implementation. We disclosed the impact of lead-time bias by advancing the date of diagnosis of the first cohort to an earlier point in time, according to the more timely diagnosis by the CPPs. We used Kaplan-Meier analysis to estimate survival functions and identify lead-time related differences in absolute survival. We also calculated percentages for survival differences that was attributable to lead-time.

Preliminary results: After advancement of the date of diagnosis, the absolute survival increased from 93% to 95% at 30-day follow-up, from 85% to 86% at three-month follow-up, and from 68.5% to 69% at one-year follow-up. The percentage of the survival increase that the advancement of the date of diagnosis comprised of the observed difference from before to after CPP was larger at 30-day follow-up (74%) than at one-year follow-up (7%). Detailed results will be presented at the conference.

Conclusion: Preliminary findings suggest that only a small proportion of the observed increase in the one-year survival is attributable to lead time imposed by faster diagnosis in the CPP. The improvement in 30-day survival is most likely attributable to the lead-time imposed by the CPPs.

Does access to health services influence the diagnostic pathway and outcomes from eight common cancers? Analysis of a linked dataset based on the NASCAR cohort.

Authors: Melanie Turner, Shona Fielding, Yuhan Ong, Chris Dibben, Zhiqiang Feng, David Brewster, Corri Black, Amanda Lee, Peter Murchie.

Background: We explored the association between travelling time, cancer treatment and survival for 12 339 people from Northeast Scotland, including the Orkney and Shetland Islands, diagnosed with one of eight common cancers from 2007-2014.

Methods: Routine healthcare data and GIS derived travelling times to key healthcare facilities were linked to the NHS Grampian Cancer Care Pathway to form the NASCAR dataset comprising 12,339 people diagnosed with lung, breast, colorectal, prostate, melanoma, oesphago-gastric, cervical or ovarian cancer from 2007-2014. Logistic regression analyses (unadjusted and adjusted for key confounders including metastatic disease at diagnosis) determined the effect of travel time from key healthcare services on treatment delays and one-year survival.

Results: Mainland patients with >60 minutes travelling time from the regional cancer centre [OR 1.42; 95% CI 1.25 to 1.61] and island-dwellers [OR 1.32; 95% CI 1.09 to 1.59] were more likely to commence treatment within 62 days of GP referral than those living closest. Island-dwellers were also more likely to have their cancer diagnosis and cancer treatment occurring on the same or next day [OR 1.72; 95% CI 1.31-2.25] compared to those living closer.

Increased travel time to treatment centre >30 minutes on the mainland was associated with reduced survival to one year (30 to 59 minutes [OR 0.70; 95%CI 0.59 to 0.86], >60 minutes [OR 0.80; 95%CI 0.67 to 0.96]) compared to those living closest. There was a non-significant trend to poorer one year survival for island dwellers.

Conclusions: Mainland patients with >60 minute journey to the regional cancer centre and island dwellers are more likely to commence cancer treatment within government targets. This does not, however, translate into superior one-year survival even when important confounders including more advanced disease at diagnosis, are controlled for. Cancer services need to be configured to suit the needs of dispersed populations.

Associations between pathways to diagnosis and care experience for patients with colorectal cancer: Evidence from linked data

Authors: Theodosia Salika¹, Gary Abel², Silvia Mendonca³, Christian von Wagner¹, Cristina Renzi¹, Annie Herbert¹, Sean McPhail⁴, Georgios Lyratzopoulos^{1, 3}

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Background: Patient experience is considered an important outcome of cancer care; studying the predictors of positive/negative experience in cancer patients is therefore important. Early events may influence the experiences of subsequent care but formal evidence about the presence, direction and strength of associations between diagnostic pathways and experience is lacking.

Methods: We used data on colorectal cancer patients who responded to the English Cancer Patient Experience Survey 2010; these data were linked to the Routes to Diagnosis dataset. We focused on major diagnostic pathways ('routes') including screening, emergency presentation and 'urgent' referral to secondary care for suspected cancer (otherwise known as two-week-wait (TWW) referral). We selected nine report and nine evaluation questions (reflecting care processes or their appraisal, respectively), representing all major aspects of the patient journey. Responses were treated as binary (positive/negative experience) and analysed using multivariable logistic regression.

Results: Across the 18 items we observed consistent associations between diagnostic routes and care experience. For 16/18 questions emergency presenters were more likely to report negative experiences than TWW-referred patients, with evidence ($p < 0.05$) for 12/18 items (adjusted odds ratios range 1.2-3.0; absolute change in adjusted proportions +3% to +23% compared with TWW-referred patients).

In contrast, screen-detected patients reported significantly lower odds of negative experience for 17/18 questions with statistical evidence for 5/18 questions (adjusted odds ratios range 0.6-0.8; absolute change in adjusted proportions -3% to -9% compared with TWW-referred patients).

Conclusion: Patients diagnosed with colorectal cancer through different routes report substantial differences in their experience of subsequent care. As similar associations are seen for both report and evaluation items, they may at least partially reflect variation in actual care quality rather than simply differences in care perceptions. Efforts are needed to improve the care experience of emergency presenters. Expanding the pool of screen-detected patients may improve the overall experience of care.

Relationship between abdominal symptoms and cancer in the abdomen: cohort study in primary care with prospective registration of cancer, in six European countries.

Authors: Knut Holtedah, Ranjan Parajuli, with input from collaborating authors in Scotland, Netherlands, Belgium, Denmark, Sweden

Background: Different abdominal symptoms may signal cancer. We studied associations between abdominal symptoms and subsequent cancer located to the abdominal region.

Methods: Over a 10-day period, 419 general practitioners (GPs) in Norway and the collaborating countries recorded consecutive consultations. Where patients presented with specified abdominal symptoms, additional data on general symptoms and features of the consultation were noted. Data on all cancer diagnoses in the participating general practices were requested from the GPs eight months later. Cox analyses yielded Hazard Rates (HR), which express the hazard for cancer to be diagnosed when a patient had presented a symptom, in relation to when no symptom had been presented. Positive predictive value (PPV) was calculated as the chance of a patient having abdominal cancer when they had reported a symptom.

Results: Consultations with 61802 patients were recorded. A subsequent malignancy was reported in 511 patients (0.8%), of whom 70 (13.7%) had a recurrent cancer. Abdominal symptoms were recorded in 6264 (10.1%) of all patients: in 89 (34.5%) of 251 patients with new abdominal cancer and in 24 (12.6%) of 190 patients with new non-abdominal cancer ($P < 0.001$).

For the 175 patients diagnosed within 6 months after consultation with new abdominal cancer, all recorded symptoms had HR > 1 . The highest sex and age adjusted HR were for 'Rectal bleeding' (HR 18.8, 95% CI 8.7-40.7) and for three or more abdominal symptoms (HR 14.0 (9.1-21.4)). All PPVs were $< 5\%$. Males had higher PPV than females for most symptoms.

Conclusions: All investigated abdominal symptoms are valid cues to cancer. Like other alarm symptoms, single symptoms had low PPVs. Symptoms may suggest to the GP that a cancer diagnostic search is warranted.

Weight loss as a diagnostic feature of cancer in primary care: a systematic review and meta-analysis.

Authors: Brian D Nicholson^{1*}, Willie Hamilton², Jack O'Sullivan¹, Paul Aveyard¹, FD Richard Hobbs¹

¹Nuffield Department of Primary Care Health Sciences, University of Oxford, Oxford, UK.

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Background: Unexpected weight loss (UWL) is a non-specific symptom posing a diagnostic challenge to primary care clinicians. The objectives of this systematic review were: first to examine the diagnostic value of UWL, alone and in combination with other clinical features for cancer in primary care patients; and second to examine how the predictive value of UWL varies by cancer type, cancer stage, gender, and age.

Method: We conducted a diagnostic test accuracy review and meta-analysis following Cochrane methods. Studies of any design were included reporting 2 x 2 diagnostic accuracy data for weight loss (index test) in adults presenting to primary care and a subsequent diagnosis of cancer (reference standard). QUADAS-2 criteria was used to assess methodological quality. Sensitivity, specificity, positive likelihood ratios, and positive predictive values were calculated and bivariate meta-analysis performed yielding pooled estimates.

Results:

25 studies were included, with 23 (92%) using primary care records: two reported across a range of cancers, and the rest on single cancer sites. 20 (80%) defined weight loss as a physician's coding of the symptom; the remainder had collected data directly. Only one defined unexpected weight loss using objective measurements. Positive associations between UWL and cancer were found for ten cancer sites, with likelihood ratios (95% confidence intervals) ranging from 2.4 (1.5-3.6) to 15.2 (13.7-16.9): the summary likelihood ratio was 5.9 (4.8, 7.3): 23 studies. The pooled sensitivity was 9% (95% CI 6.4-12.6%) and the pooled specificity 98.5% (95% CI 98.0-99.8%). The risk with UWL increased when accompanied by another clinical feature and with increasing age.

Conclusion: The cumulative risk of cancer in male and female patients with UWL for all age groups over 60 years exceeds the 3% risk threshold set out by NICE for investigation. The risk of cancer warrants urgent investigation to address multiple possible cancer sites.

Testicular cancer in primary care: identifying a symptom profile and quantifying risk using electronic patient records.

Authors: Dr Elizabeth Shephard and Professor Willie Hamilton

Background: Around 2400 men are diagnosed with testicular cancer in the UK annually, nearly half aged below 35. The incidence has nearly doubled over the last forty years. NICE 2015 guidance (not based on primary care data) recommends further investigation for those with testicular enlargement, and advises ultrasound for undefined other symptoms. We aimed to identify and quantify the symptomatology in primary care thus bringing additional detail to this guidance.

Methods: Matched case-control study using electronic patient records. 1,398 men aged >16 years, diagnosed with testicular cancer January 2000 to December 2012, and 4,956 age, sex and practice matched controls were selected from the Clinical Practice Research Datalink, UK (CPRD). A list of putative clinical features was compiled from the literature and support groups. Patient records were searched for these features in the year before diagnosis. Analysis used multivariable conditional logistic regression, with absolute risks estimated using Bayes' theorem.

Results: Nine features were significantly associated with testicular cancer: testicular lump, odds ratio 268 (95% confidence interval, 100-720), testicular swelling 229 (100-526), scrotal swelling 153 (34-698), testicular pain 36 (20-62), hydrocele 28 (7.7-103), orchitis/epididymitis 13 (7.8-23), groin pain 6.9 (3.3-14), raised inflammatory markers, 4.3 (2.5-7.4) and abdominal pain 2.5 (1.5-3.9). The highest positive predictive values (PPVs) for 17-49 year olds were: testicular lump 2.5% (1.1-5.6), testicular swelling 2.3% (1.2-4.6), hydrocele 1.1% (0.1-7.7) and scrotal swelling 0.7% (0.2-2.3). PPVs were higher when testicular enlargement was accompanied by a second symptom. Reliance on the accuracy and conformity of GP data recording were the main study limitations.

Conclusions: The results confirm the importance of testicular enlargement as a risk factor for testicular cancer. The presence of testicular pain, hydrocele, groin pain and abdominal pain as new individual symptoms expand the existing NICE guidelines and these symptoms should be considered for ultrasound.

Variations of primary care consultations and symptoms by socio-demographic patient characteristics and impact on emergency colorectal cancer diagnosis: A longitudinal data-linkage study in England

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Background: More than 1/5 colorectal cancers in England are diagnosed as an emergency, with significant socio-economic inequalities. We aimed to evaluate variations in primary care consultations by socio-demographic factors and their impact on emergency cancer diagnosis.

Methods: Cohort study on incident colorectal cancers using individually linked National Cancer Registry and primary care data (CPRD) providing up to 10-years pre-diagnostic clinical information. We included a total of 14,303 colorectal cancers diagnosed in England 2005-2010.

Results: Emergency presentations occurred in 35% and 15% of colon and rectal cancers in 2005/2006, with subsequent years showing comparable figures for rectal and somewhat lower figures for colon cancers (e.g. 30% and 15% for colon and rectal cancer, respectively, in 2010). Emergency and non-emergency presenters had similar primary care consultation patterns between 10 and 2 years pre-diagnosis. During the year before diagnosis consultation rates increased markedly, independently of diagnostic routes. Examining whether consultation rates differed by socio-demographic characteristics, has shown that women and older patients had significantly higher consultation rates for colorectal symptoms in the pre-diagnostic year. Consultation rates were also higher for the most deprived rectal cancer patients. At multivariable analysis emergency diagnosis of colon cancer was more likely in women (e.g. for cancers diagnosed in 2005/06: OR=1.35; 95%CI 1.0-1.8) and people aged 80+ years (OR=1.82; 95%CI 1.2-2.7), independently of the number of consultations and symptom history. Deprivation was associated with a higher risk of emergency diagnosis of rectal cancer, independently of consultations and symptoms (e.g. OR=3.36; 95%CI 1.5-7.6 for the most deprived patients diagnosed in 2005/06).

Conclusions: Emergency and non-emergency presenters do not seem to be different in their 'background' consultation history. Women, older and deprived patients have an increased risk of emergency diagnosis, independently of primary care consultations and symptoms. This suggests that other factors might play a relevant role and need to be considered for reducing emergency presentations.

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Policy and Practical Impact of Cancer Related Research in General Practice

Authors: Søren Gray Worsøe Laursen, Documentation and Quality, Danish Cancer Society, MS (Pol Sci)

Background: A recurrent question for attendees of Ca-PRI conferences is if the research done with regards to cancer in primary care actually matters in terms of changes in health policy and health outcomes. On the 10th anniversary of Ca-PRI I would like to highlight how and why research in Denmark (in part financed by the Danish Cancer Society) has had a profound impact upon the policies, practices and outcomes of Danish cancer care over the last decade illustrated by a series of case studies.

These cases range from fundamentally reorganizing the process of diagnosis to the establishment of integrated cancer care pathways in the health care system. Changes which have been continuously monitored, studied thus documenting the impact of these changes on the cancer patient population.

Methods: Policy analysis, policy tracing, case studies.

Results: The research in general practice has had a significant and positive impact upon the official health care policies (i.e. cancer plans, white papers) and the practices of Danish cancer care (ie. organizational changes) with substantial benefits for cancer patients.

Conclusions: Research in cancer care in the primary sector matters for patients, health care professionals and for the organisation of cancer care. Research, however, is a necessary but not a sufficient condition for policy and organizational change.

Transition to primary care follow-up: Preliminary results of a survey of early-discharge breast cancer survivors in southeastern Ontario

Authors: Marian Luctkar-Flude, RN, PhD, Assistant Professor, Queen's University, School of Nursing; Hugh Langley, MD, CCFP, Regional Primary Care Lead, Southeast Regional Cancer Program

Background: Primary care involvement in post-treatment cancer care is increasing as cancer centres in Ontario, Canada are moving forward with earlier discharge of post-treatment breast cancer survivors. The purpose of this study is to describe satisfaction of early-discharge breast cancer survivors with their transition from oncology to primary care follow-up, and their symptom burden and health status at time of transition.

Methods: A descriptive survey was administered to early-discharge breast cancer survivors upon discharge from oncology follow-up. Outcome measures were: (1) Cancer Care Ontario Patient Experience Questionnaire, (2) Edmonton Symptom Assessment System (ESAS), (3) Canadian Problem Checklist (CPC), and (4) SF-12 Health Survey.

Results: Sixty-eight participants, aged 44-88 years (mean 66.8) were recruited. Participants rated their transition to primary care follow-up highly (mean score 28/35). Lack of information about resources/supports (26.2%) and self-management tools/educational materials (33.3%) were the largest gaps reported. Fatigue (54.8%), anxiety (35.7%), shortness of breath (35.7%), and pain (31%) were the most prevalent symptoms reported on the ESAS, with symptom severity rated as high as 9/10 for other problem, and 8/10 for depression and shortness of breath. The most frequently reported problems on the CPC were sleep and weight problems (28.6%) and concentration/memory problems (21.4%). Physical Component Summary Scores of the SF-12 were generally at (43%) or below (31%) population norms. Mental Component Summary Scores were generally at (38%) or above (48%).

Conclusions: Although the majority of women were satisfied with their early discharge and transition to primary care follow-up following cancer treatment, a subset of women reported unmet educational needs and ongoing burdensome symptoms. Participants will be followed for a one-year period to evaluate satisfaction with primary care follow-up. Identified gaps and concerns will inform development of targeted knowledge translation interventions for primary care providers and breast cancer survivors to improve health and quality of life.

Pilot study of a Primary Care Nurse led model of Advance Care Planning

Authors: Joel Rhee, Nicholas Zwar, Josephine Clayton, Anne Meller, Oshana Hermiz, Hillary Miller, Janice Tan, Mehrnoush Bonakdar

Background: Advance Care Planning (ACP) has been shown to have benefits to patients, caregivers, family members, close friends and health professionals. Primary care is considered to be an ideal setting for ACP as patients' conditions are often more stable and because of existing relationships between the patient and health professionals. However, the uptake of ACP has been limited in the primary care setting. In order to address this problem, we have developed and piloted a primary care nurse led model of ACP. This paper reports on the findings.

Methods: Mixed-methods descriptive study of a pilot intervention of Primary Care Nurse-led ACP. Details of the number and nature of the ACP discussions, the nature and types of Advance Care Directives completed, and the extent of dissemination of the documents were recorded on a data capture form. The participating patients were invited to a telephone interview to discuss their experiences. The interviews were transcribed and analysed using thematic analysis. The project was approved by the UNSW Human Research Ethics Committee.

Results: Twenty patients in four general practices in Sydney, Australia participated in the study. Of these, 18 patients completed all the visits and created some form of an Advance Care Directive. Thirteen patients participated in an interview. Six major themes relating to patient experiences of ACP were identified through thematic analysis: working through ideas, therapeutic relationship with nurses, significance of making wishes known, protecting family from burden, autonomy in decision-making, and challenges of family communication.

Conclusions: Our results show that the active involvement of primary care nurses in ACP can be effective in encouraging patients to undertake ACP. The patients found this model to be acceptable and helpful in enabling them to work through ideas and make their wishes known.

A qualitative investigation of health and medical professionals' attitudes to socio-economic factors when delivering care at the end of life

Authors: Christopher Dalglish, Miriam Johnson, Una Macleod

Background: People from lower socio-economic groups experience worse clinical outcomes at the end of life, and are more likely to die in hospital. Although there is some research exploring perspectives of the healthcare professionals involved in care at the end of life, little has addressed attitudes to socio-economic status.

Methods:

Eight focus groups with 48 multi-disciplinary healthcare professionals were conducted in Kingston-upon-Hull, UK. Participants were asked to discuss their experience of socio-economic status in relation to delivering care at the end of life, especially with regard to supporting preferences about places of care and death. Discussions were recorded and verbatim transcribed. Data were analysed using modified grounded theory.

Results: Some practitioners were reluctant to discuss how socio-economic status affected their practice although their views became evident from accounts of clinical practice. Medical practitioners were more likely than other participants to accept that socio-economic factors influenced their decision-making, that needs varied according to levels of deprivation and care required tailoring to provide equity. More affluent patients were seen as better equipped to express their wishes and practitioners expressed a greater paternalism towards poorer patients. Poorer families were viewed as having larger, more supportive family networks. Professionals perceived communication differently (positively and negatively) between the socio-economic groups. Families with few resources (material or social) were seen as less able to respond to changing needs, increasing the risk of an unplanned death in hospital.

Conclusions: Socio-economic factors contributed to practitioners' perceptions of need, but all strived to offer equitable care. This research helps clarify the nature of professional perceptions contributing to palliative decision making, so adds to existing research on end of life care and social class.

Development and validation of an algorithm to identify cancer recurrence using Danish national patient registries

Authors: [Linda A Rasmussen](#)¹, Henry Jensen¹, Line F Jensen¹, Henrik Møller¹, Peter Vedsted¹

¹ Research Centre for Cancer Diagnosis in Primary Care, Research Unit for General Practice, Department of Public Health, Aarhus University, Denmark

Background: The Danish post-cancer follow-up programmes are under revision, and general practice is planned to play a key role in the future cancer follow-up. A central focus is timely diagnosis of recurrence, but our knowledge about the pathway to cancer recurrence is sparse. Comprehensive research is warranted to ensure effective follow-up programmes and early detection of recurrence. However, recurrence of cancer is not routinely registered in the Danish health registries. The objective of this study is to develop and validate algorithms to identify patients with cancer recurrence using Danish national patient registries.

Methods: The study population is incident cancer patients diagnosed during 2008-2014 according to the Danish Cancer Registry. The study subjects are patients successfully treated for head and neck, colorectal or lung cancer, malignant melanoma, breast, ovary, endometrial or bladder cancer. Relevant time intervals from primary cancer diagnosis or completion of cancer treatment to start of cancer recurrence surveillance will be specified. Indicators of cancer recurrence are registered codes of relevant treatment, relevant diagnoses and malignant pathology. The algorithms will be validated by comparing the cancer recurrence cases identified by the algorithms with a gold standard, being either data from national clinical cancer databases or relevant cohort studies.

Results: By the time of the congress, an algorithm for at least one cancer disease will be finalised for presentation, including the sensitivity and specificity of the algorithm to detect cancer recurrence alongside the proportion of patients developing recurrent cancer.

Conclusions: This study will enable systematic research on the role of general practice in the diagnostic route to cancer recurrence. This must include the patient's symptoms, the diagnostic activity, and the patient's and the general practitioner's assessment of the diagnostic process. This knowledge is mandatory to develop qualified post-cancer follow-up programmes in general practice.

A novel theory-based digital app to optimise cancer pain management

Authors: Rosalind Adam, Christine Bond, Marijn de Bruin, Christopher Burton, Peter Murchie
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Introduction: Pain is a frequent and distressing complication of cancer. Patients can have problems reporting pain, communicating about pain with professionals, using medications effectively, and getting help when problems arise. We have designed an app to support patients and professionals in improving cancer pain control.

Methods: An Intervention Mapping (IM) approach was taken to app development. Current challenges of managing cancer pain and potential solutions were investigated using systematic literature reviews and qualitative enquiries with patients, caregivers, and multi-disciplinary professionals. The format and practicalities of a digital intervention were explored. Behaviour change theory was systematically applied through the IM approach to inform intervention components.

Results: The app has been designed, based on a comprehensive needs assessment process, to help patients who require strong opioids for pain relief to achieve their personalised treatment goals. There are six sections. 1. Tap to record a breakthrough analgesic dose (more than three doses in 24 hours links to "Help" section); 2. Weekly pain assessment (data collected includes pain intensity, triggers, side effects, physical function, medication adherence) 3. Set medication reminders 4. A short movie about pain management 5. View and share summary reports of pain – summary reports are designed to quickly highlight important problems to MacMillan nurses and GPs so that appropriate feedback can be given 6. Links to help and advice.

Conclusion: A digital app has been developed and is being feasibility tested with patients, their caregivers, MacMillan nurses, and GPs. Early feedback on a prototype has been positive. A demonstration of the app will be given, along with examples of how the IM methodological approach has been used, embedding behavioural theory to underpin the rigorous development of a complex medical intervention.

E-POSTER PARALLELS

E-01

Diagnosing colorectal cancer in general practice: a mixed methods approach

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Background/introduction: In spite of screening programs, early detection of colorectal cancer (CRC) based on symptoms remains paramount to ensure better survival. Substantial research has been conducted on presentation of alarm symptoms in primary care. However, diagnosis of CRC is complex and other facets of care may play a role in earlier diagnosis. The aim of this study was to explore the diagnostic process in general practice by studying health care use and qualitatively assessing electronic medical records.

Methods: Annual rates of face-to-face contacts and prescribed medication 1 year before diagnosis were compared between CRC-patients and age, gender and general practice matched controls between 1999 and 2009. Reasons for contact and prescribed medication were compared. Negative binomial regression models and non-parametric test were used in the analysis. In addition, a qualitative content analysis, using purposive sampling, was performed on the free-text data fields in the GPs' electronic medical records.

Results: CRC patients (n=287) had significantly more contacts and prescribed medication prior to diagnosis compared to controls (n=828), mostly related to the digestive system, but also to other problems. Several hypotheses of delay were formulated in the qualitative study.

Qualitative data analysis is ongoing, final manuscript expected to be finished February 2017

Conclusions: *We expect to have our results completed before the Ca-PRI meeting and would like to send an update in the meantime.*

Use of immunochemical faecal occult blood test in general practice on patients presenting non-alarm symptoms of colorectal cancer

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Background: Symptom presentation of colorectal cancer (CRC) in general practice is diverse. 50% of CRC cases present with non-alarm symptoms that do not fulfil criteria for urgent referral. Immunochemical faecal occult blood test (iFOBT) may be used in this group of patients to identify whom to refer to colonoscopy. The aim of this study was to assess the diagnostic value of using iFOBT in patients with non-alarm symptoms of CRC in general practice.

Methods: A cluster randomised stepped wedge trial was performed in the Central Denmark Region. 385 general practices were included. iFOBT was used in patients of ≥ 30 years presenting non-alarm symptoms of CRC. If iFOBT was positive ($\geq 50\mu\text{g/L}$) the patient was referred to colonoscopy. Primary outcomes were the number of requested iFOBTs, the number and rate of positive iFOBTs, the number of detected CRCs and the PPV for detecting CRC.

Results: Preliminary results show that 3641 iFOBTs were requested during the study period (median patient age: 62 years (IQR 50-71)). Of valid tests, 568 (16%) were positive (median patient age: 68 (IQR 56-77)). Of all patients who received an iFOBT, 55 individuals were diagnosed with CRC. The positive predictive value (PPV) of CRC when the GP ordered the iFOBT was 1.5% and for a positive iFOBT 9.3%. Two CRC cases were diagnosed among patients with a negative test result.

Conclusions: This study is the first to investigate the use of iFOBT on patients presenting with non-alarm symptoms of CRC in primary care. The results suggest that iFOBT is a relevant test to detect CRC in this group of patients and has a PPV just below alarm symptoms.

“I’m always anaemic”: Insights into colorectal cancer diagnosis using GP records

Authors: Daniel Jones, E Mitchell, I Watt, U Macleod

Background: Colorectal cancer is the fourth most common cancer in the UK, with 41,300 diagnoses in 2014. Despite intensive effort and ongoing research, the UK still lags behind many comparable countries in both stage at presentation and survival. Early diagnosis of colorectal cancer improves survival. Whilst the number of patients diagnosed through screening is increasing, the majority of patients diagnosed with colorectal cancer have presented to primary care with symptoms. As a result, research needs to focus on the recognition of colorectal cancer in primary care. Large scale database studies have focused on the symptoms which suggest colorectal cancer but few studies have looked in detail to what happens to individual patients in primary care, prior to diagnosis.

Method: Detailed significant event analysis was undertaken on patients diagnosed with colorectal cancer in the last two years in eight general practices in the East Riding of Yorkshire. Quantitative and qualitative data were extracted from each case and used to gain insights into colorectal cancer diagnosis.

Results: Significant event analysis was undertaken on 74 patients. In each case the patient’s pathway to diagnosis was analysed in detail, providing insights into patient presentations, GP actions, use of investigations and referral to secondary care. It was possible to calculate ‘missed opportunity time’ in which the patient had met criteria for urgent referral, but was not referred. Detailed analysis of these cases shows the importance of five areas in the recognition of colorectal cancer in primary care. These include safety netting, patient factors, use of and interpretation of investigations, communication with secondary care and the problems of multimorbidity.

Conclusions: This study has looked at the primary care interval of 74 patients diagnosed with colorectal cancer using GP records and has highlighted five key areas which should form the basis of both GP education and further research.

E-04

Live implementation of ColonFlag as an adjunct for population management allowing practitioners to identify non-compliant individuals at risk of harboring pre-malignant and malignant colonic lesions

Authors: Ran Goshen, MD, Ph.D., Medical EarlySign, Chief Medical Officer

Background: Medial EarlySign (MES) and Maccabi Health Services (MHS) teamed up to explore the use of machine learning algorithm (ColonFlag) to mine underutilized Electronic Medical Records (EMR) data to improve compliance for Colorectal Cancer (CRC) screening. World-wide extended retrospective studies covering diverse populations and including over 1M individuals were executed. These studies showed 55% of localized cancers and 40% of regional cancers to be identified 6-12 months prior to diagnoses.

Methods: Implementation started at October 2015 and used to identify individuals at risk of harboring CRC among those who failed to comply with practiced guidelines for CRC screening. ColonFlag receives CBC results, age and gender of non-compliant individuals, who underwent a CBC during the last working day and who are 50-75 years old, with no cancer history and with no GI consult within the preceding three months. ColonFlag assigns a risk score to each individual. The system sends GPs alerts embedded into the patients' EMR systems for those who scored above the predefined cutoff. The GPs review the alert and refer suitable patients to a gastroenterologist for further consult or directly to colonoscopy.

A cutoff of 99% specificity was chosen (i.e. marking approximately 1% of the tested population) so as to resonate the positive predictive value (PPV) of FIT test. The cut-off was calculated to yield 1% of additional colonoscopies with expected 5% PPV for cancer and 15-20% for other findings (e.g. polyps, high risk adenomas).

Results: During the first year of implementation 656 individuals were scored above cutoff, 89% of those were seen by their GPs, 70% were referred for further GI investigation, 210 colonoscopies were performed (72% compliance rate) revealing 20 CRC cases and 21 intermediate to high-risk adenomas.

Conclusion: Implementing ColonFlag as an adjunct to currently deployed CRC screening programs improves adherence and successfully identifies CRC among non-compliant individuals.

**Positive predictive value and sensitivity of selected abdominal symptoms in relation to some major abdominal forms of cancer, with a discussion of the data basis for calculations
Examples from colorectal cancer: prospective cohort study.**

Authors: Knut Holtedahl, Ranjan Parajuli, with input from collaborating authors in Scotland, Netherlands, Belgium, Denmark, Sweden

Background: Different abdominal symptoms may signal cancer. We studied associations between abdominal symptoms and subsequent cancer located to the abdominal region.

Methods: Over a 10-day period, 419 general practitioners (GPs) in Norway and the collaborating countries recorded consecutive consultations. Where patients presented with specified abdominal symptoms, additional data on general symptoms and features of the consultation were noted. Data on all cancer diagnoses in the participating general practices were requested from the GPs eight months later. Some symptoms are frequent warning signs in specified major forms of cancer, i.e. they have high sensitivity and should receive extra attention.

Sensitivity and PPV was calculated:

a: based on symptoms recorded during consultation and

b: reported either at consultation or before diagnosis in the GPs' reports.

Results: Consultations with 61802 patients were recorded. A subsequent malignancy was reported in 511 patients (0.8%), of which 251 patients were diagnosed with new abdominal cancer, 175 of them within six months after consultation. Symptoms with a particularly high association with selected major types of cancer, are currently being analysed with calculation of sensitivity and PPV, in general and for each sex and selected age groups.

Conclusions: PPV/Sensitivity for bladder, prostate and colorectal cancers will be presented at the Ca-PRI meeting. A short discussion about the principles behind calculations of sensitivity and PPV, and of the strengths and weaknesses of the approach shown in relation to definitions and to GPs' clinical decisions, will be included.

Frequency and diagnostic timeliness of abdominal symptoms before a cancer diagnosis in primary care

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Background: Early diagnosis forms part of cancer strategies across many developed countries. Recently, there has been growing interest in raising public awareness of symptoms grouped by body area or by system, rather than by cancer. Abdominal symptoms are one such potential target but evidence regarding their frequency and associated time to diagnosis is limited.

Methods: The presenting symptom(s) of 15,956 cancer patients from a national audit of primary care records in England was coded into symptom categories. We studied eight abdominal symptom groups (abdominal pain, change in bowel habit, bloating/distension, dyspepsia, rectal bleeding, dysphagia, reflux, and nausea/vomiting) and described their frequencies among the study population. Subsequently, we described the cancer site case-mix of patients who presented with any recorded abdominal symptom, and each individual symptom; and investigated variation in the length of the patient interval (time from first symptom to first presentation) and primary care interval (time from first presentation to cancer referral) by symptom.

Results: Almost a quarter (23%) of cancer patients experienced abdominal symptom(s) before diagnosis. The majority of these patients were diagnosed with a cancer in the intra-abdominal region. Patient and primary care intervals varied by abdominal symptom ($p < 0.001$). Notably, patients with dysphagia and change in bowel habit presented after 30 days or more (median (IQR): 30 (4–73) days and 30 (10–61) days respectively). Post-presentation, patients with dyspepsia and reflux experienced longer primary care intervals (25 (8–73) days and 21 (0–66) days respectively).

Conclusions: Abdominal symptoms are frequent in the context of cancer diagnosis and may represent a range of common and rarer cancers. The cancer signatures of individual symptoms as well as information on their associated diagnostic timeliness could support the development of smarter public awareness campaigns and inform the design and provision of novel investigative services.

Clinical characteristics, diagnostic investigations and diagnoses of patients referred with non-specific, serious symptoms.

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Background: Danish cancer patients have lower survival rates than patients in many other western countries. Half of the patients presents with non-alarm symptoms and have a longer diagnostic pathway. Consequently, an urgent referral pathway for patients with non-specific serious symptoms was implemented in Denmark, 2011-2012. The diagnostic pathway enables the general practitioner (GP) to refer patients with non-specific serious symptoms to a diagnostic centre when a serious disease is suspected.

Methods: We performed a cohort study including all patients aged 18 years or older referred by their GP to the Diagnostic Centre at Silkeborg Regional Hospital. All patients were followed for three months for diagnosis of cancer or other serious disease in national registries. Likelihood ratio (LR) of cancer or serious nonmalignant disease was calculated for clinical characteristics.

Results: Among the 921 patients included in the study, 11.3% were diagnosed with cancer and 23.8% were diagnosed with a serious nonmalignant disease. The most common cancer types were haematological cancer (22.6%), colorectal cancer (17.9%), lung cancer (11.3%) and kidney cancer (10.3%). The most frequent serious nonmalignant diseases were rheumatological (24.2%), gastrointestinal (17.0%), haematological (15.0%), endocrinological (14.2%) or infectious diseases (13.8%). Among the patients, 85.4% had one or more general symptoms; most commonly weight loss (52.7%), fatigue (50.3%), loss of appetite (36.1%), pain (28.6%) and general malaise (26.2%). The majority of the symptoms had a LR of serious disease < 2.0. Abnormal clinical and paraclinical findings increased the LR of both cancer and serious non-malignant disease.

Conclusions: In total, 35.1% of the patients referred to the diagnostic centre had a new serious diagnosis. Symptomatic presentation had little diagnostic value among patients referred with non-specific serious symptoms and a multidisciplinary diagnostic approach is needed in these patients.

Motives for not undergoing a colonoscopy after an unfavourable result in the Dutch population-based screening for colorectal cancer: preliminary results of the ARCUS study

Authors: Lucinda Bertels, Bart Knottnerus, Kristel van Asselt, Henk van Weert

Background: Persons who receive an unfavourable result in the Dutch screening program for colorectal cancer are recommended a colonoscopy. However, in 2015, 10% (n=805) did not undergo a colonoscopy, of whom 8% are estimated to have colorectal cancer and 38% an advanced adenoma. In the ARCUS study (Amsterdam Research on Colonoscopy Uptake after Screening), we investigate motives of screen-positive persons for not undergoing a colonoscopy and compare them with screen-positive persons who did undergo a colonoscopy.

Methods: In-depth interviews are conducted until data saturation is reached, with individuals who did as well as individuals who did not undergo a colonoscopy after an unfavourable screening result. At a later stage, we will quantitatively investigate the prevalence of the found motives.

Preliminary results: So far we have performed four interviews: two individuals underwent a colonoscopy within a year after receiving the unfavourable result (participants) and two did not (non-participants); of the two non-participants, one did undergo a colonoscopy, but only after a year. The participants differed from the non-participants in three aspects. Firstly, participants had a much higher risk perception of colorectal cancer than non-participants. Secondly, participants were less influenced by their GP in their decision-making than non-participants. Thirdly, when asked to draw cancer in a provided sketch of a colon, participants drew red lumps, whereas non-participants drew brown or black holes. None of the three persons who underwent a colonoscopy had colorectal cancer.

Conclusions: Based on our first four interviews, risk perception appears to be a defining factor in deciding whether or not to undergo a colonoscopy. Also, the GP may play an important role, especially for individuals with a low risk perception of colorectal cancer. Furthermore, individuals not undergoing a colonoscopy might have a different conceptualization of colorectal cancer than individuals undergoing a colonoscopy.

Health Beliefs, Illness Perceptions and Determinants of Breast Screening Uptake in Malta: *A Cross-Sectional Survey*

Authors: Danika Marmarà^{*1,2}, Vincent Marmarà^{3,4}, Gill Hubbard¹

Background: Women's beliefs and representations of breast cancer (BC) and breast screening (BS) are salient predictors for BS practices. The health belief model (HBM) and common-sense model (CSM) of illness self-regulation were utilised to explore Maltese women's BS behaviours.

Methods: This cross-sectional survey enrolled Maltese women ($n = 404$) by stratified random sampling, aged 50-60 at the time of their first invitation to the Maltese breast screening programme (MBSP), with no personal history of BC. Participants responded to a 121-item questionnaire by telephone between June-September 2015. Data analysis included descriptive statistics, chi-square tests and logistic regression.

Results: Maltese women showed high awareness of BC signs and symptoms (>80% agreement for 7 out of 8 signs), but limited knowledge about causation (e.g., germ or virus: 38.6% 'agree', 30.7% 'disagree'). Most items within the HBM constructs (perceived barriers; cues to action; self-efficacy) were significantly associated with first BS invitation (e.g., non-attendees had higher emotional barriers such as fear of result ($\chi^2=12.0$, $p=0.017$)). Items within the CSM constructs of Illness Representation (BC causes; cyclical cancer timeline; consequences) were also significantly associated (e.g., attendees considered more that BC would be life-changing ($\chi^2=18.0$, $p=0.000$) with financial consequences ($\chi^2=13.3$, $p=0.004$)). There were no significant associations for socio-demographic or health status variables with uptake, except for family income ($\chi^2=9.7$, $p=0.047$). Logistic regression analyses shows that HBM constructs, in particular perceived barriers, were the strongest predictors of non-attendance to first invitation throughout the analyses ($p<0.05$). However, the inclusion of illness representation dimensions improved the model accuracy to predict non-attendance when compared to HBM alone (65% vs 38.8%). First BS uptake was found to be a significant predictor of subsequent uptake (OR=0.102; 95% CI=0.037, 0.283; $p=0.000$).

Conclusions: Interventions should be based on theory including HBM and CSM constructs, and should target first BS uptake and specific barriers to increase BS uptake in Malta.

Beliefs about cancer and participation in screening for colorectal cancer: Danish results from the International Cancer Benchmarking Partnership (ICBP)

Authors: Line Hvidberg¹, Line Flytkjær Jensen¹, Anette Fischer Pedersen¹ & Peter Vedsted¹

¹ Research Centre for Cancer Diagnosis in Primary Care (CaP), Research Unit for General Practice, Department of Public Health, Aarhus University, Denmark.

Background: Randomised controlled trials show that screening with faecal occult blood tests (FOBT) can reduce mortality from colorectal cancer. Beliefs about cancer and beliefs about screening for cancer have been associated with participation in cancer screening. However, limitations of earlier studies are the use of a retrospective study design and self-reported or intended screening behaviour as the outcomes.

The aim of this study is to examine the association between beliefs about cancer and beliefs about screening for colorectal cancer measured in 2011 and screening participation for colorectal cancer in 2014-2016.

Method: The study uses Danish data on beliefs about cancer and beliefs about screening for colorectal cancer from the International Cancer Benchmarking Partnership Module 2. The beliefs were measured using the Awareness and Beliefs about Cancer (ABC) measure, which was performed as telephone interviews with 3,000 randomly sampled persons aged 30 years or older from 31 May to 4 July 2011. Data on cancer beliefs will be linked with register-based data on participation in colorectal cancer screening, which was commenced in 2014 among all Danish citizens aged 50-74 years. Persons who participated in the ABC survey and who have been invited to participate in the colorectal cancer screening programme are eligible for inclusion (approximately 1,500 persons aged 50-74 years).

Results: The results will be presented at the conference using multivariable analysis adjusting for morbidity and socio-economic position.

Conclusion: Using a prospective study design, this study will identify beliefs about cancer and beliefs about colorectal cancer screening that may affect the decision to participate in screening.

Creating a Toolkit to Support Implementation of a Systems-based Colorectal Cancer Screening Program Across Diverse Primary Care Practices

Authors: Allison M. Cole, MD, MPH
Laura-Mae Baldwin, MD, MPH

Background: Despite the existence of effective screening, colorectal cancer remains a leading cause of cancer death in the United States. Evidence from multiple large, randomized controlled trials demonstrates that proactive, population-based colorectal cancer screening programs increase rates of appropriate colorectal cancer screening. Yet these programs have not been widely adopted and implemented across diverse primary care practices. The objective of this study is to develop and pilot test a toolkit that will support implementation of ProCRCScreen, an evidence-based proactive colorectal cancer screening program across diverse primary care practices.

Methods: We recruited three primary care practices from the WWAMI region Practice and Research Network (WPRN) to participate in this study. For each practice, we provided a combination of in person, web-based and telephone support. The ProCRCScreen program required sites to identify patients due for colorectal cancer screening and proactively mail patients kits to complete colorectal cancer screening at home. Sites implemented the ProCRCScreen sequentially. We assessed implementation and the utility of the implementation tools with field notes review and qualitative interviews of key informants at each site.

Results: All three sites successfully implemented the ProCRCScreen intervention. Aspects of the program that were adapted included: target population, intervention materials and clinical workflow. Tools particularly important for participating sites included: materials and information to engage clinical and administrative leadership, information about clinical workflows and examples of patient facing materials. Rates of colorectal cancer screening were higher following ProCRCScreen implementation.

Conclusions: A combination of in person and web-based implementation support allowed three diverse primary care practices to adapt and implement an evidence-based colorectal cancer screening program. Dissemination of the tools and support broadly has the potential to increase rates of colorectal cancer screening.

Quality assurance of evidence-based gastric cancer screening in Japanese communities

Authors: Chisato Hamashima (National Cancer Center, Japan)
Akira Fukao (Miyagi Cancer Association)

Background: The Japanese government introduced endoscopic screening for gastric cancer in 2016 as a public policy based on the Japanese guidelines on gastric cancer screening. Endoscopic screening is mainly performed in private clinics in communities.

Objectives: To provide appropriate endoscopic screening for gastric cancer in Japanese communities.

Methods: The necessary items were selected for quality assurance of endoscopic screening for gastric cancer. A quality assurance manual of endoscopic screening that referred to the European guidelines for quality assurance of breast, cervical, and colorectal cancers was developed.

Results: The following items were selected as contents of the manual for quality assurance of endoscopic screening for gastric cancer in Japanese communities, and 10 strategies for implementation of endoscopic screening were recommended: 1) *Formulation of a committee* responsible for implementing and managing endoscopic screening; 2) *Development of an interpretation system*; 3) *Preparation of management and reporting systems*; 4) *Obtaining informed consent*; 5) *Avoidance of frequent screenings*; 6) *Keeping the biopsy rate within 10%*; 7) *Nonadministration of sedation* in endoscopic screening for safety management; 8) *Adherence to proper endoscopic cleaning and disinfection*; 9) *Use of a checklist* to achieve optimal program preparation when municipal governments introduce endoscopic screening; and 10) *Identification of the aims and roles* by referring to a checklist if primary physicians decide to participate in endoscopic screening.

Conclusions: In the implementation of population-based screening, quality assurance is an essential issue. Even if evidence has been established, the final goal cannot be achieved without appropriate management. To effectively introduce population-based screening nationwide, quality assurance of endoscopic screening for gastric cancer must be carefully considered.

Improving bowel screening uptake: Lessons from higher uptake of breast and cervical screening

Authors: Katie Robb, Marie Kotzur, Sally Wyke, Sara Macdonald, Robert Steele, David Weller, Christine Campbell, Emilia Crighton, Colin McCowan

Background: Screening can reduce deaths from cervical, bowel and breast cancer if the people invited participate. Among women in Scotland, uptake of screening is 61% for bowel compared to 73% for breast and 70% for cervical screening. It is important to understand why bowel screening fails to achieve the uptake rates of breast and cervical screening. The aim of this research was to qualitatively identify the perceived differences in breast, cervical and bowel screening and inform interventions to increase bowel screening participation.

Methods: We conducted individual interviews (n=60) with women aged 52 to 64 years, from areas of high and low deprivation, who had according to their NHS records participated in: i) all three screening programmes; ii) none, or iii) breast and cervical, but not bowel screening. The data were analysed using Framework Analysis.

Results: Irrespective of their uptake pattern and socio-economic group, most participants described screening as valuable and felt obliged to be screened. Women who avoided bowel screening found this test easier to postpone or forget about than breast or cervical screening which involves attending an appointment. Although all groups reported screening barriers, socio-economically deprived women tended to experience these barriers more strongly. Compared to breast and cervical screening, the self-completed bowel screening test posed more practical obstacles and induced disgust.

Conclusions: Greater unpleasantness and practical barriers to self-completion seemed to make bowel screening more likely to be avoided. Interventions to improve uptake might focus on addressing perceived practical barriers by supporting planning.

Why do people who agreed to participate in lung screening change their mind?

Authors: [Hannah Scobie](#), Dr Sara Macdonald, Prof Sally Wyke, Dr Stephen Harrow, Dr Katie Robb

Background: If people make an appointment for cancer screening, it suggests they are motivated to attend the appointment. As with other health behaviours, this intention does not always translate into action and 'did not attend' (DNA) and cancellations are frequent outcomes at screening clinics. Orbell & Sheeran (1998) used the term inclined abstainer to describe people with positive intentions who fail to act. The aim of this study is to explore the decision making process and barriers to attendance among people who initially arranged a lung screening appointment, but who later cancelled or did not attend.

Methods: This study will use semi-structured interviews with inclined abstainers from the Early Cancer detection test - Lung cancer Scotland (ECLS) Trial (n=20). The data will be analysed using a framework approach. The demographic characteristics of the participants including age, gender and area-level deprivation will be assessed.

Expected Results: Recruitment and data collection is currently underway. We anticipate potential themes explaining why people change their mind may include: i) increasing fear of what the test may find as the appointment date approaches, and ii) unanticipated events arising at the time of the appointment.

Discussion: Cancer screening rates remain suboptimal, and cancellations and DNAs are costly to the NHS. Inclined abstainers are of particular interest because they show some motivation to participate in screening but fail to act. Understanding the barriers to action may identify intervention opportunities to support screening attendance.

BETTER WISE: Building on Existing Tools to Improve Cancer and Chronic Disease Prevention and Screening in Primary Care for Wellness of Cancer Survivors and Patients

Authors: Carolina Aguilar, Donna Manca, Kris Aubrey-Bassler, Denise Campbell-Scherer, Aisha Lofters, Melissa Shea-Budgell, Nicolette Sopcak, Eva Grunfeld.

Background: Family physicians often lack time, resources, and tools to address cancer and chronic disease prevention and screening (CCDPS). Although most patients have multiple risks, most guidelines and resources are focused on one specific disease, organ system, or lifestyle risk. Furthermore, cancer survivors and patients affected by poverty achieve fewer prevention and screening goals. BETTER WISE (Building on Existing Tools to Improve Cancer and Chronic Disease Prevention and Screening in Primary Care for Wellness of Cancer Survivors and Patients) builds on the BETTER trial, which demonstrated the effectiveness of the BETTER approach. A healthcare provider with enhanced skills in CCDPS, the Prevention Practitioner (PP), meets with patients one-on-one, develops a tailored “Prevention Prescription” with them, helps them set S.M.A.R.T. (specific, measurable, attainable, realistic, time-based) goals for their health, and links them to community resources, as appropriate. The main objectives of BETTER WISE are to proactively target cancer survivors and patients to comprehensively address CCDPS, improve clinical outcomes, reduce the burden of chronic disease, and improve the sustainability of the healthcare system through improved CCDPS and cancer surveillance in primary care.

Methods: Using the BETTER toolkit, which includes blended care pathways for cancer survivors and CCDPS, including behavioural lifestyle risk factors and a brief poverty screen, the PP determines which CCDPS maneuvers patients 40-65 years of age are eligible to receive.

Results: The BETTER trial demonstrated that the addition of a PP improved uptake of CCDPS in urban primary care settings as compared to usual care (54% vs. 21%, $p < 0.001$). Similar improvements in CCDPS outcomes have also been observed in community settings in Newfoundland & Labrador.

Conclusions: The BETTER WISE approach addresses the CCDPS needs of patients, including cancer survivors, and involves screening for poverty. BETTER WISE provides a framework for an adaptable, collaborative, patient-centred approach that is grounded in evidence.

The evolution of loneliness in older cancer patients until three years after diagnosis

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Background: Loneliness is increasingly recognized as an important social problem, with serious consequences for quality of life, but also for subsequent health. In a previous study we showed different patterns for social and emotional loneliness from time around diagnosis (baseline) until 1 year after diagnosis. Especially patients with cancer (both 50-69 years and ≥ 70 years) were found to have decreased levels of emotional loneliness at baseline as compared to older people without cancer; differences faded during the first year after diagnosis. The evolution of social and emotional loneliness in older cancer patients on the mid-long term is unknown, as is its relation to patient psychosocial patient characteristics.

Methods: We will analyse data from the KLIMOP-cohort at baseline and after 6 months and 1 and 3 years. Data on loneliness are available for 1426 participants at baseline, 1010 and 923 persons after 6 months and 1 year respectively. Data collection after 3 years is ongoing. Evolution of loneliness will be described. Multiple logistic regression analysis will be used to assess the relation between patient characteristics and loneliness at the different time points.

Results and conclusions: Results will be available at the Ca-pri meeting 2017.

Choose Wisely, a consultation with the general practitioner between diagnosis and therapy choice for cancer patients

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Background: After cancer diagnosis, patients often experience an emotional rollercoaster in which complex choices have to be made quickly. A time out at the GP between diagnosis and therapy choice, entitled the 'Choose wisely consultation', may possibly improve decision making, particularly if it succeeds at facilitating a personalised approach to weighing therapy options in the light of personal preference and context. For the Choose wisely consultation, this study aims (1) to assess the desirability-, the effect on shared decision making and satisfaction with therapy choice, (2) to optimise and personalize the content of the Choose Wisely consultation for a variety of cancer populations, (3) to chart the conditions for successful implementation and the main determinants of treatment choice.

Methods: We used a mixed methods approach, including semi-structured interviews, focus groups and questionnaires. Outcomes were determined for three different cancer patient groups: 1) 70 years or older treated with curative intent, 2) 70 years or older receiving palliative treatment, and 3) age between 18 and 70 receiving palliative treatment.

Results: The first interviews, among patients treated with curative intent and their health care providers, show that the consultation is appreciated by both patients and their health care providers. For this population, the main determinant of treatment choice was 'the physicians advice'. The main facilitators of success are 'tailoring the consultation to the patients needs' and 'adequate information transfer from hospital to GP'. Evaluations for each population are ongoing and will be presented at the conference.

Conclusions: Preliminary results show that the Choose Wisely consultation between cancer diagnosis and therapy choice is appreciated by both patients and their health care workers. However, for cancer patients treated with curative intent, the impact on the eventual therapy choice seems minimal.

Reasons for GP consultation after surgical treatment of prostate cancer

Authors: Kristel van Asselt, Ruud Simons, Henk van Weert

Background: A possible transition of prostate cancer follow-up towards the GP is encouraged by several institutions in the Netherlands. Reasons are both the increasing prevalence of prostate cancer survivors and the patients need for more interference of primary care during follow-up. The aim of this study is to identify and quantify reasons for consultation of patients with prostate cancer after surgical treatment.

Methods: A case series using routine care data of the GP-network-AMC (HAG-net-AMC) was performed. Files of patients diagnosed with prostate cancer and selected if they initially had undergone curative intent surgery between January 2004 and December 2013 and had a minimum follow-up of two years. Reason for consultation were described and each question was interpreted whether it was prostate related, uncertainly prostate related or non-prostate cancer related. Furthermore, all patients were their own control group regarding the number of consultation questions before diagnosis compared with the period after diagnosis.

Results: In the study 29 patients were analyzed. Of all consultation questions at the GP, 13.1% were prostate related. In this category, urine incontinence and impotence were most frequent complaints. Besides, 5.6% of the consultation questions were uncertainly prostate cancer related. Back pain was the most frequent complaint in this category. Furthermore, prostate cancer patients had more GP consultations questions per year after diagnosis (mean of 6.3 per year) than before (mean of 4.2 per year). Also, almost half of the patients counseled their GP after diagnosis and before the operation to discuss about different treatment options, the recently diagnosed prostate cancer or the upcoming prostatectomy.

Conclusion: In conclusion, this study provided an overview of the needs of prostate cancer patients two years after their operation.

Feasibility and acceptability of follow-up for prostate cancer in primary care

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Background: The number of prostate cancer patients is high and will increase further due to the ageing population. Follow-up for prostate cancer will therefore put an increasing demand on health care capacity and costs. Increasing the role of the GP in follow-up for prostate cancer may help to limit the work load in secondary care and reduce costs. Before testing cost-effectiveness in a large trial, feasibility and acceptability should first be tested in a smaller sample.

Methods: We tested the feasibility and acceptability of a new clinical pathway for patients with prostate cancer in a stable phase aged ≥ 65 years and with comorbidity. Follow-up for prostate cancer was transferred to the GP and patients were followed for one year. We aimed to include 20 patients. Participating GPs and urologists jointly developed a protocol. Patient satisfaction regarding GP care was measured 0 and 12 months after transfer of care to the GP with the subscale 'personalized care' of the Consumer Quality Index GP-care. Next, patients, GPs and urologists were interviewed about their experiences. We considered the clinical pathway successful if no patients were referred back to the urologist except for an increase in PSA, and if the majority of patients and participating urologists and GPs were satisfied.

Results: Of the 20 patients included in the study, three were referred back to the urologist because of increasing PSA levels and one died (unrelated to prostate cancer). Most patients (73%) were satisfied with the transfer of care, indicated by a score of 3 or higher on the subscale 'personalized care'. GPs and urologists were confident in GPs' ability to provide follow-up for prostate cancer and preferred to continue this.

Conclusions: The new clinical pathway was successful. This warrants a larger study to provide evidence for the (cost-) effectiveness of GP-led prostate cancer follow-up.

Living with and beyond cancer with comorbid illness: reflecting on a research prioritisation exercise

Authors: Debbie Cavers, Sarah Cunningham-Burley, Eila Watson, Elspeth Banks and Christine Campbell, University of Edinburgh

Background: An increasing number of people are living with and beyond cancer, and their psychosocial and supportive care needs are often complicated by the presence of comorbid chronic illnesses. A patient partnership approach to planning research is central to developing study designs that help ensure objectives and subsequent findings are both relevant to policy and responsive to patients' needs. This study aims to consult with patients and their informal carers to obtain their views regarding key priorities for research and to further develop and refine research priorities through online stakeholder input.

Methods: People with a diagnosis of cancer and one or more comorbid illness were invited via poster to attend a discussion workshop, planned and implemented according to relevant quality markers, to help identify key areas for research on cancer and comorbidity. Researchers facilitated a group discussion and annotated ideas to set consensus priorities. After further analysis, these have informed a consultation document to be shared online with stakeholders in phase 2 of the consultation.

Results: Feedback on the research prioritisation exercise findings and process will be reported. Strengths and limitations will be discussed in the context of patient partnership models of evidence-based practice. These findings will be applied to the design of an in-depth interview study.

Conclusions: Identifying the supportive care needs of patients living with cancer and comorbid illness is a research priority that can be informed by those with direct experience. This process requires critical reflection.

Effect of a transitions program on perceptions of continuity of care by colorectal cancer survivors at discharge to primary care.

Authors: Jeffrey Sisler MD, Zoann Nugent PhD, Tara Carpenter-Kellett, Joel Gingerich MD

Background. The *Moving Forward After Cancer* (MFAC) program in Manitoba, Canada supports transfer of care of colorectal cancer patients to primary care and includes transitional appointments (TAs) and survivorship care plans. This study used a pre-post design to evaluate the impact of the program on patient perceptions of continuity of care.

Methods. The *pre-implementation* (PRE) group was a random Cancer Registry sample of patients diagnosed in 2008/09 with Stage II / III CRC. The *post-implementation* (POST) group was recruited in oncology clinics after their TA over four years starting in 2010. Both groups completed the same mailed survey. Respondents were asked to identify the main provider(s) of their follow-up care. Those indicating a primary care provider (PCP) completed the Patient Continuity of Care Questionnaire (PCCQ) which assesses continuity upon discharge. Quality of life (QOL), disease, treatment and demographic data were collected.

Results. There were 246 responses in the PRE group (RR 68.3%) and 83 (65.9%) in the POST. The POST group was younger, more urban and further from diagnosis. It included more Stage III and rectal cancer patients who received more treatment. Comparing the subset of both groups (106 vs 65) who described a PCP as a main provider, the POST group demonstrated higher scores on the PCCQ (24.0 v 22.8, $p=0.0065$). Multivariate regression demonstrated that higher QOL in the POST group was a significant predictor (OR 5.8) of this difference. The most common pattern of provider involvement in follow-up was the "FP alone," which rose from 19% PRE to 64% POST ($p<0.0001$). The proportion who felt "adequately prepared" for their transfer of care increased (74 vs 91%, $p=0.012$).

Conclusions. A formal information sharing process with CRC patients at time of transition to primary care follow-up improved their evaluation of continuity of care, although higher QOL in the intervention group may partially explain this difference. Significant shifts were seen in the locus of care from oncology to primary care settings consistent with the intent of the MFAC program.

Exploring the relationship between socioeconomic status, risk factors and typical pathways to late cancer diagnosis

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Background: Cancer diagnosis is a complex healthcare process involving patients, healthcare professionals, and the health system. Despite the well-conceptualized models by Hansen (2008) and Walter (2012), the relationship between socioeconomic status (SES) and the clinical pathway to cancer diagnosis has not been fully characterized by empirical studies. Meanwhile, there is little knowledge on how comorbidities influence the diagnostic process of cancer (Sarfati, 2016).

Methods: This is a population-based exploratory study, with primary care data from the Hampshire Health Record (England, 2000–2015, including demographics, symptoms, comorbidities, diagnostic investigation procedures, prescriptions, therapeutics, healthcare events, etc.), supplemented by secondary care and other public available data (IMD, GP characteristics, etc.). Sequence analysis will be used to explore the typical pathways to cancer diagnosis (lung, colorectal and prostate cancers) among patients in different SES. Casual mediation analysis will be used to explore whether the association between SES and late cancer diagnosis was mediated through specific comorbidities, adjusting for other factors. Bayesian network will be used to model multiple factors (patients, physicians and health service characteristics) in a network simultaneously. Multilevel modelling will be used to accommodate the hierarchical structure of the data.

Expected results: The patterns of medical appointments and different types of delay in the diagnostic pathway for patients in different SES will be characterized. A deeper understanding of how individual and collective comorbidities, together with SES, influence late cancer diagnosis will be obtained. Risk factors for late cancer diagnosis at different levels (patients, physicians and health system) will be identified.

Conclusion: This PhD project aims to better characterise pathways to cancer diagnosis and identify risk factors for late diagnosis, with novel and advanced statistical methods. This project has potential impact on informing health policy to promote early diagnosis from the primary care setting and provide tailored services for different groups of patients.

Excess body weight as a risk factor for skin cancer: a meta-analysis

Authors: [Margaret Ryan](#)¹, Harriet Runggay¹, Katrina Brown¹

¹Cancer Intelligence Team, Cancer Research UK

Background: Excess body weight is a recognised risk factor for a variety of diseases including hypertension and cardiovascular disease, but it is a less well-known risk factor for cancer. With a rising proportion of men and women in the UK being overweight or obese, this avoidable risk factor is becoming a priority in cancer prevention. Numerous meta-analyses have already been published looking at the role of overweight and obesity in various cancers including bowel, liver and breast; however, the literature on skin cancer is limited.

Results from current studies are inconsistent, with results suggesting a positive association between body mass index (BMI) and risk of melanoma, but an inverse relationship for BMI and risk of non-melanoma skin cancer (NMSC). Therefore we aim to perform a meta-analysis on the effect of being overweight (BMI 25- 29.9) or obese (BMI ≥ 30), compared with healthy weight (BMI 18.5-24.9), on melanoma and NMSC risk.

Methods: To conduct the meta-analysis the 'Preferred Reporting Items for Systematic reviews and Meta-Analyses' (PRISMA) guidelines were followed. A search of PubMed using the key terms 'skin cancer', 'melanoma', 'basal cell carcinoma', 'squamous cell carcinoma', 'non melanoma skin cancer', 'weight', 'body mass index', 'obesity', 'obese', 'overweight', 'adiposity' and 'body size' was performed in November 2016.

Results: From 11,073 titles, 74 articles were selected during an initial title screen. An abstract review identified 22 of these articles which fulfilled our inclusion criteria; 15 cohort and 7 case-control studies. We will perform a random effects meta-analysis and assess between-study heterogeneity using the Q and I^2 statistics. We will test for publication bias using Begg and Egger's tests and will perform separate sub-group analyses on sex, region and NMSC sub group.

Conclusion: The results from this meta-analysis will evaluate, synthesise and clarify current evidence on overweight and obesity and skin cancer.

Are patients with high normal platelet counts at increased risk of cancer? The NORMA study.

Authors: Sarah Bailey, Obi Ukomunne, Elizabeth Shephard, Willie Hamilton.
University of Exeter, UK

Background: Thrombocytosis (raised platelet count, $>400 \times 10^9/l$) is a marker of cancer; 11.6% of males and 6.2% of females >40 years having a new cancer diagnosis within one year. We have found that patients with platelet counts at the lowest end of the abnormal range are at an increased risk of cancer, compared to those with a normal platelet count ($150-400 \times 10^9/L$). This 'proof of principle' study aimed to investigate the risk of cancer in patients whose platelet count is at the upper end of the normal range.

Methods: This study used data from the Clinical Practice Research Datalink. We studied patient data from five published case-control studies of lymphoma, myeloma, leukaemia, and bladder and cervical cancers. Patients were grouped by platelet count in bands of 25 from $300 \times 10^9/L$ to $425 \times 10^9/L$. A crude (unadjusted) logistic regression model was fitted to estimate the odds of a cancer diagnosis in patients in each platelet count group, compared to those in the index group ($300 - 325 \times 10^9/L$).

Results: 12,524 patients with cancer and 24,663 age, sex, and practice matched controls were included in the analysis. The odds of cancer increased steadily with increasing platelet count group. Platelet count $326-350 \times 10^9/L$: OR 1.05 (95% CI 0.94-1.18, $p=0.36$); $351-375 \times 10^9/L$: OR 1.24 (95% CI 1.09-1.40, $p=0.001$); $376-400 \times 10^9/L$: OR 1.21 (95% CI 1.10-1.40, $p=0.008$); $401-425 \times 10^9/L$: OR 1.76 (95% CI 1.51-2.05, $p<0.001$).

Conclusions: Patients with a platelet count at the upper end of the normal range may also be at increased risk of cancer, perhaps exceeding the current NICE 3% threshold. Future planned work will examine this possibility in a large cohort study of platelet counts in the 300-400 range across all cancers.

Birth Cohort Analysis of Body Mass Index (BMI) and Bowel Cancer Incidence in England.

Author: Jessica Sheppard¹, Katrina Brown¹ and Kirstie Osborne¹
Cancer Research UK¹

Background: Higher body mass index (BMI) is associated with an increased risk of bowel cancer and an estimated 13% of bowel cancer cases in the UK each year are linked to overweight and obesity. Substantial weight gain over many years, even within healthy BMI range, could increase incidence of obesity related cancers by 20-50% in adults. Birth cohort analysis of routinely-collected data on BMI and bowel cancer incidence can further demonstrate this relationship and could support predictions for future cohorts and targeted interventions for obesity in primary care.

Methods: Change in mean BMI over time in adults in England by birth cohort was determined by “tracking” birth cohorts through Office for National Statistics (ONS) data split by age group. Change in bowel cancer incidence rates in adults in England was calculated (with a 10 year lag on the BMI data) using ONS cancer incidence data split by age group. A range of birth cohorts were analysed with datasets matched on birth year. We are exploring linking this data with data from the Cancer Awareness Measure to identify if there’s any relationship between change in mean BMI and awareness of signs/symptoms and risk factors for cancer.

Results: A positive association was observed between the change in mean BMI and change in bowel cancer incidence over time for each birth cohort. Birth cohorts with the largest increases in mean BMI had the largest increases in bowel cancer incidence rates. Each successive birth cohort has a smaller increase in mean BMI and bowel cancer incidence rate over time.

Conclusion: The smaller increase in mean BMI and bowel cancer incidence rate over time may be related to an increase in awareness of the signs/symptoms and/or risk factors for bowel cancer which could have encouraged more prompt help-seeking with signs/symptoms of bowel cancer and/or positively influenced health behaviours.

Variation in cancer risk among Lesbian, Gay and Bisexual men and women: evidence from patient surveys in England

Author: Catherine L Saunders, Catherine Meads, Gary A Abel, Georgios Lyratzopoulos

Background: There is currently little evidence on the risk of cancer in people from sexual minorities.

Methods: We used data from 796,594 responders to the English General Practice Patient Survey (GPPS) to explore whether the prevalence of self-reported diagnosis of cancer in the last 5 years was more or less frequent among sexual minorities.

Subsequently, we analysed data from 249,010 responders of the English Cancer Patient Experience Survey (CPES) with sexual orientation as a binary outcome, and ICD-10 diagnosis as covariate (38 different common and rarer cancers) to examine whether people from sexual minorities are over- or under-represented among different cancer sites

For both analyses, we used logistic regression models stratified by sex and adjusted for age and cancer site (breast and prostate cancer being the baseline categories for women and men, respectively).

Results: A previous diagnosis of cancer in the past 5 years was more commonly reported by male GPPS responders who endorsed gay/bisexual orientation than heterosexual men, OR(95%CI) 1.31(1.15-1.49), $p < 0.001$; without evidence of a difference between heterosexual and lesbian/bisexual women 1.13(0.94-1.37), $p = 0.19$.

For most common and rarer cancer sites (30/35 in women, 28/34 in men), the odds of specific cancer site diagnosis among CPES respondents seemed to be independent of sexual orientation. There were notable differences in infection-related (HIV, HPV) cancers. Gay/bisexual men are over-represented among men with Kaposi's Sarcoma 48.2(22.0-105.6), anal 15.5(11.0-21.9), and penile cancer 1.8(0.9-3.7). Lesbians/bisexual women are over-represented among women with oro-pharyngeal cancer 3.2(1.7-6.0).

Conclusions: Large scale evidence indicates that the distribution of cancer sites does not vary substantially by sexual orientation, except for HPV and HIV associated cancers, variably in men and women. HPV vaccination is an effective cancer prevention strategy for both heterosexual and sexual minority populations.

Evaluation of an online toolkit to improve early diagnosis of oral cancer

Authors: [Lucy Ironmonger](#), Kirstie Osborne, Ella Ohuma, Jennifer Yiallorous, Charlie Huson

Background: Over the last decade, oral cancer incidence rates have increased by 39% in the UK and mortality rates have increased by 21%. Most oral cancers are detected at a late stage when treatment is costly and results in poor patient outcomes.

Methods: Cancer Research UK developed a Royal College of General Practitioners accredited online oral cancer toolkit for dentists and general practitioners to aid early diagnosis and improve outcomes. The toolkit comprises a risk factors overview; head, neck and oral examination video; lesion recognition resource; case studies; referral guide; and quiz.

Survey data was collected pre-and post-launch to assess impact on awareness of risk factors and signs/symptoms, confidence to make referrals and a range of other measures. We also analysed differences pre-post and between those who interacted with the toolkit and those who did not. Reflective notes - completed after the quiz - were thematically analysed. In addition, we will conduct online focus groups, assess impact on numbers of two week wait referrals for head and neck cancer and assess referrals to secondary care for oral biopsies.

Results: Analysis of dental survey data found significant increases pre-post in awareness of five relevant risk factors and one sign/symptom (awareness of signs/symptoms was high at pre). Dentists who interacted with the toolkit reported more frequently speaking to patients about prevention and informing patients to report changes in their mouth to a dentist. Analysis of dentists' reflective notes found they had refreshed their knowledge and were likely to improve examination frequency and technique. Conversely, GPs gained knowledge of signs/symptoms, malignant and non-malignant lesions, risk factors and when to refer a suspicious lesion which improved confidence in multiple areas.

Conclusions: These initial results are encouraging; further research and analysis will allow us to explore impact in greater depth, particularly actual referral behaviour.

Encouraging the early presentation of oral cancer

Authors: Dr. Tunmise Awojobi, Professor Tim Newton, Dr. Suzanne Scott

Background: Oral cancer is increasing in incidence with up to half of patients diagnosed with advanced lesions. One way of aiding early presentation is to encourage dentists to talk to high-risk patients about oral cancer in order to raise awareness and encourage timely help-seeking for symptoms. This research aimed to develop an oral cancer communication guide to help facilitate dentists' discussions about oral cancer and to test the impact of training dentist in the use of the guide on their practice.

Methods: Mixed methods research design.

Results: *Study (1):* A cross-sectional study of 184 adult dental patients indicated that a low proportion of participants were aware of being screened for oral cancer by their current dentist (14%) or ever (12%). Twenty percent of participants had not heard of oral cancer and 77% anticipated delaying seeking help for at least one sign of oral cancer. There was however a missed opportunity within the dental setting as 92% of patients wanted their dentist to tell them if they were being screened.

Study (2): Interviews with dentists (n=16) indicated that facilitators of oral cancer-related discussions included developing practice standards, presence of risk factors and good dentist-patient relationships. Barriers included insufficient time, lack of training and not wanting to make patients anxious. Dentists also had positive views of a draft version of the communication guide.

Study (3): A pre-post pilot study to test the effect of training in the use of the oral cancer communication guide indicated that a significantly higher proportion of dentists reported that they inform patients of screening post-training (44%) than pre-training (16%). Significantly fewer perceived barriers and higher self-efficacy to discuss oral cancer were reported.

Conclusion: The thesis developed an oral cancer communication guide. Training dentists in its use showed a positive impact by reducing perceived barriers and increasing self-efficacy.

The Role of Omani Patients and their Families in Cancer Treatment Decision-Making: A cross sectional study

Authors: Abdulrahim Al-Bahri, Mansour Al-Mandhri, Zahid Al-Mandhari, Mohammed Al-Azri

Background: Family members often play an important role in the decision-making with regards to cancer treatments. However, there are several factors which may affect family behaviours when it comes to first treatment decision making (FTDM). This is the first study to evaluate the role of cancer patients and their families regarding FTDM in the Middle East.

Method: This cross-sectional study involved face-to-face interviews conducted with 185 Omani cancer patients and their family members who attended Royal Hospital and Sultan Qaboos University Hospital, Muscat, Oman. All adult cancer patients, who were receiving different cancer treatments and accompanied by adult family members during the study period, were invited to participate. A tool developed by Cancer Care Outcomes Research and Surveillance (CanCORS) Consortium was used to identify the level of family involvement for the FTDM.

Results: Among the study participants, 47.6% reported a joint treatment decision with their family and 25.9% reported some/little family input. Among the family members, 26.5% reported a family decision with regards to FTDM. The most engaged family members in FTDM were male, employed, younger than patients and have high educational level. Patients who were the least communicable with their oncologists were more likely to report a family-controlled FTDM (adjusted odds ratio [OR] = 8.7). Patients who were financially dependent on their families (unemployed, students and/or housewives) were more likely to have family-controlled FTDM (adjusted OR = 7.7). Patients with an advanced cancer stage (IV) were more likely to report family-controlled FTDM compared to patients at stages I or III (adjusted OR = 5.7).

Conclusion: The majority of Omani cancer patients valued, and preferred, their family's involvement in FTDM. Socio-demographic variables and stage of cancer at diagnosis played a role in FTDM. Taking these variables into consideration is crucial to improving health outcomes when treating cancer patients.

Cancer Education in Nigeria: Findings from a Community-Based Intervention by a Physicians' Association

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Background: Cancer causes significant morbidity and mortality in Nigeria, but the country lacks an organized cancer control system. Low awareness of cancers among health professionals in the country contributes to weak cancer control capabilities and poor patient outcomes in Nigeria. Study describes findings from a community-based education intervention by Medical Women's Association of Nigeria and American Society of Clinical Oncology in Akwa Ibom State.

Methods: Intervention was the Cancer Control in Primary Care (CCPC) Course. It featured didactic lectures with multimedia components (n=11), demonstrations and simulations (n=4), as well as plenary sessions (n=7). Topics covered included cancer epidemiology (breast/cervical), patient navigation, cancer management, inter-professional collaboration and discussions on Akwa Ibom cancer control framework. Participants (n=124) included physicians, nurses and health policymakers in the state. Mixed methods evaluation of the course formed the basis for data collection and analysis.

Results: Ninety-two percent of participants (114/124) completed the evaluation. Majority (51%, 58/114) were general nurses, and the average number of years in practice was 20 (± 12.3) years. Evaluation of knowledge showed a median knowledge score of 21 (maximum = 25) points. *"I have been able to [learn] about cancer in a more detailed way for the first time" (#7)*. Ninety-seven percent (111/114) planned to improve their practice patterns, especially regarding patient/public education on cancer prevention and advocacy for early detection. Identified barriers to knowledge implementation were lack of support from administration, colleagues and inadequate manpower. Emergent themes regarding the most important things participants learned were; 'cancer management skills', 'inter-professional collaboration' and 'hope for cancer'.

Conclusions: This workshop achieved its objectives of improving the cancer management competence of participants, while promoting inter-professional collaboration. Continuing medical education interventions, like the CCPC, provide a cost-effective to improve cancer control in Nigeria and other resource-limited settings.

The SUCCESS study - Smoking Reduction by a Smoking Cessation Strategy in the National Cervical Cancer Screening Program

Authors: M.B.L. Mansour, K.M. van Asselt, M.R. Crone, N.H. Chavannes, H.C.P.M. van Weert

Background: In Western Europe 11% of the total burden of disease is caused by the use of tobacco. Of Dutch adults aged 30-65 years, 1 in 5 smokes on a daily basis. Despite clear guidelines, opportunities for quit advice and cessation support are underused by general practitioners. Cancer screening can serve as a teachable moment for participants to consider the relationship between smoking and the risk of cancer. Caregivers could at that occasion address smoking behavior. In the Netherlands women aged 30-60 years are invited to participate in the national cervical cancer screening program every 5 years. Smoking enhances the risk of cervical cancer. Cervical cancer screening can be utilized to detect female smokers, address smoking behavior and offer cessation treatment in the general practice.

Methods: We aim to reduce smoking rates in participants of the national cervical cancer screening program. Data yielded from a qualitative study amongst smoking cancer screening participants and primary care professionals will be used to design a cluster randomized controlled trial. In this trial, with randomization at the level of the general practice, the effectiveness of a tailored smoking cessation intervention initiated during cervical cancer screening will be measured. The intervention group will receive smoking cessation support as add-on care to the cervical cancer screening program. Control groups will receive usual care, consisting of a cervical swab only. Outcome measures are self-reported quit attempts per smoker, rate of smokers that quit and reduction in number of cigarettes.

Conclusion: The qualitative study is currently running. The cluster randomized trial is expected to start in the summer of 2017.

A smoking cessation discussion after cervical cancer screening: a qualitative study amongst screening participants

Authors: M.B.L. Mansour, K.M. van Asselt, M.R. Crone, N.H. Chavannes, H.C.P.M. van Weert

Background: Guidelines for Dutch general practitioners state smoking cessation should be discussed with every smoker. In practice however, smoking behavior is addressed in only a small subset of usually ill patients. Smoking is an important cofactor in the development of cervical cancer. The Dutch cervical cancer screening program can be utilized to detect female smokers aged 30-60 years, address smoking behavior and offer cessation treatment in general practice.

Methods: We aim to explore the attitudes of cervical cancer screening participants towards a smoking cessation discussion after screening and to detect determinants for a positive receipt of such a discussion. In-depth interviews will be conducted with female smokers aged 30-60 years. So far, five in-depth interviews have been performed. Data collection will be continued until data saturation is reached.

Preliminary results: Four participants indicated tailored information would increase their risk perception for cervical cancer. The role of smoking in cervical cancer development was known to one participant, recently explained to her by her gynecologist after a cervical biopsy. She wished the pathophysiology would have been known to her before, it would have inclined her to quit smoking at a younger age. To four smokers individualized cessation support was deemed important and a potential reason to contact their GP for future cessation support. Upon inquiry, a smoking cessation discussion would refrain none of the smokers from future participation in the screening program.

Conclusion: The first interviews indicate tailored information might increase risk perception. A smoking cessation discussion would not refrain female smokers from future participation in the screening program. Individualized cessation support might be a reason to contact their GP.

Trends in Cancer Antigen 125 testing in primary care in Oxfordshire 2003-2014.

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Background: In 2011, NICE recommended carrying out cancer antigen CA125 testing in primary care, especially in women over 50 with persistent symptoms that suggest ovarian cancer. The objectives of this study are to describe the patterns of CA-125 testing in primary care in Oxfordshire, UK, over 2003-2014 period in terms of: (1) the trend of CA-125 testing and (2) the trend of the positive tests (CA-125 of 35 IU/ml or greater).

Method: All requests for CA-125 for the period 2003-2014 were obtained from the Oxford University Hospitals Trust Clinical Biochemistry laboratory database. Negative binomial and logistic regression were used to test the effect of the introduction of the NICE guideline in 2011, adjusting for patients' age.

Results: 51,033 CA-125 tests from 30,737 women were analysed. The CA-125 testing rate (per 10,000 women) in primary care increased sharply by 68% (95% C.I. 50 to 89%) in the three months following the introduction of the 2011 NICE guidelines. The trend of testing rate (per 10,000 women) increases at an average of 24% (95% C.I. 22 to 26%) per year before the guideline and reduces to 5% (95% C.I. -1 to 12%) per year thereafter. The odds of a positive result decreases at an average of 10% per year (C.I. 7 to 14%) and the NICE guideline has no significant effect on the proportion of positives tests ($p=0.26$).

Conclusion: There was a sudden increase of CA-125 testing in primary care immediately after the introduction of the NICE guideline in 2011 but the year-on-year of rate slowed thereafter. The number of women with negative test results increased to a greater extent than the number of women with positive test results over the study period and this trend was unaffected by the introduction of the NICE guidance. A future study should incorporate the clinical diagnosis for assessing the effectiveness of symptom-triggered CA-125 testing.

A systematic review of the use, quality and effects of pelvic examination in primary care for the detection of gynaecological cancer.

Authors: Williams, P; Bond, C M; Burton, C; Murchie, P.

Background: Urgent suspected cancer referral (USCR) guidelines recommend that women presenting with symptoms suggestive of a gynaecological cancer should undergo pelvic examination (visualization of the cervix +/- bimanual pelvic examination) prior to referral; no evidence is cited to support this (1, 2) while anecdotally, general practitioners (GPs) appear increasingly unwilling to perform pelvic examination (PE). This review gathered current evidence on the use of PE in primary care in diagnosing gynaecological cancer.

Methods: Three research questions (RQ) were explored: (1) Is PE performed in women with symptoms suggestive of a gynaecological cancer? (2) Are GPs technically competent at performing PE? (3) Does pre-referral PE influence referral outcomes?

MEDLINE, EMBASE and Cochrane databases were searched using a combination of four terms, their MeSH terms and synonyms: pelvic examination; primary care; competency and gynaecological cancer. Citation lists of all identified papers were searched. Two authors (PW and PM or CMB or CB) independently screened titles, abstracts and the full texts of publications. Data extraction was performed by PW and duplicated in all papers by a second reviewer (PM, CMB or CB).

Results: 954 references were identified: 21 met the inclusion criteria: 5 RQ1; 6 RQ2; 10 RQ3.

One paper identified pre-referral PE in 52% of patients; remaining papers demonstrated examination in less than half of patients with suspicious symptoms. No papers explored GPs' competence at performing PE; but one paper identified only 35% of 'clinically suspicious' cervixes referred for colposcopy as having a gross abnormality. Pre-referral PE was associated with reduced diagnostic delay and early stage diagnosis.

Conclusions: There appears to be a reluctance to perform pelvic examination in symptomatic women despite USCR guideline recommendation. While no evidence was found to support GPs' competence for performing PE, there was an association with shorter diagnostic delay and better outcomes in those women where it was performed.

References

1. Healthcare Improvement Scotland (2014) Scottish referral guidelines for suspected cancer. HIS, Edinburgh.
2. National Institute for Health and Care Excellence (2015) Suspected cancer: recognition and referral. London, UK.

Utility of biomarkers for ovarian cancer risk assessment in primary care: a feasibility study protocol

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Background: The non-specific nature of ovarian cancer (OC) presentations makes early diagnosis challenging. When patients present to their GP with symptoms that may represent OC, NICE recommends serum CA125 testing, with further management guided by CA125 levels. However, CA125 is non-specific and only has a sensitivity of 50-60% in early stage OC.

Secondary care studies indicate that a novel biomarker, HE4, or a combination of CA125/HE4 may possess greater specificity and sensitivity than CA125 alone. However, no study has evaluated these markers in symptomatic women presenting to their GP.

Methods: This study will take the form of a single centre, observational, cohort study. Samples from patients referred for suspected OC and all GP requested CA125 samples processed by Central Manchester Foundation Trust over a 12 month period will undergo HE4 testing. Patients with both positive and negative results will be followed up. Key information including presentation, diagnosis and outcome will be determined from patient records. Cancer registries will be examined to identify outcomes for patients lost to follow-up.

Results: Analysis will include estimations of sensitivity, specificity and positive/negative predictive values. While only a feasibility study, based on calculations of sample size and number of OC diagnoses, we anticipate identifying any differences in biomarker sensitivity of >11.5% (5% significance level, McNemar's test).

Conclusions: To date, OC biomarker studies have principally been conducted in secondary care populations. For the first time, we will include patients undergoing CA125 testing in primary care. Through this and subsequent studies, we aim to identify the most accurate test for the primary care population to facilitate early diagnosis and treatment.

This study will establish a protocol for the evaluation of biomarkers in primary care populations that could have significant utility in medical research.

Actively approaching women with a history of ovarian cancer for genetic counselling by GP, desirable and feasible?

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Background: According to recent guidelines, genetic counselling and DNA testing is recommended to all women with ovarian cancer to optimally customize follow-up for them and their kin. Since previous guidelines did not advise referral for most of these women, the majority of ovarian cancer survivors remains deprived of adequate follow-up. We aim to assess the desirability and feasibility of two strategies directed at actively approaching women with a history of ovarian cancer for genetic counselling by their GP.

Methods: In both strategies, GPs and patients are provided with a short educational video addressing the new guideline. The first strategy informs GPs of the new guideline and video by letter, and asks to identify relevant patients in their practice. In the second strategy, beside the informational letter, GPs are offered information on which patients in their practice had ever been diagnosed with ovarian cancer based on the regularly extracted routine care data from their practices. For each strategy, 'Acceptable feasibility' was defined as (1) 'active follow-up of ovarian cancer patients by more than 25% of notified GPs' and (2) 'if over 50% of patients eligible for follow-up visit the clinical geneticist'. Furthermore, feasibility and desirability was assessed using questionnaires sent to GPs and their ovarian cancer patients.

Results: Preliminary results indicate that both conditions for 'acceptable feasibility' were reached by both strategy, at 31% and 46% active follow-up by GPs for strategy one and two, respectively, and 71% and 63% compliance with the advice to visit a clinical geneticist. Both patients and GPs considered the strategies desirable, mainly because of the relevance and workability of the strategy. Technical obstacles were the most important barrier for strategy two.

Conclusions: Preliminary results indicate that actively approaching women with a history of ovarian cancer for genetic counselling by their GP seems desirable and feasible.

Stage at Diagnosis and Clinical Activity in General Practice in the Year Before Ovarian Cancer Diagnosis

Authors: Peter Hjertholm, MD, PhD, Postdoctoral Fellow
Willie Hamilton (MD, PhD, Professor), Marie Louise Ladegaard Baun (MD, Research Fellow), Lone Kjeld Petersen (MD, DMSc), Peter Vedsted (MD, PhD, Professor)

Background: Accurate diagnostic activity in general practice is essential for earlier diagnosis of ovarian cancer (OC). Most patients are diagnosed at a late stage. We aimed to investigate the diagnostic activity in general practice in the year before a diagnosis of OC compared to a control population to identify potential opportunities for improvement. Furthermore, we aimed to investigate the association between diagnostic activity and stage at diagnosis.

Methods/Materials: In a population-based study using nationwide registries, we identified 6166 OC patients aged 40-90 years diagnosed in 2004-2014. They were matched on age and general practice to 61,660 female controls. We compared the rates of consultations in general practice, hemoglobin measurements, urinalysis (urine dipsticks), colonoscopies and sigmoidoscopies, gastroscopies, transvaginal and abdominal ultrasounds in the year before diagnosis. We calculated odds ratios (ORs) using a conditional logistical regression model and estimated incidence rate ratios (IRRs) using a negative binomial regression model. Analyses were repeated, and data for patients with borderline, early stage and late stage disease were compared.

Results: Increased diagnostic activity was seen for OC patients in general practice before diagnosis compared to controls, especially regarding consultations, colonoscopies and ultrasound investigations. Differences for stage at diagnosis were identified. Detailed results will be presented at the conference.

Conclusions: The majority of the increased clinical activity was observed during the last three months before diagnosis, which was a shorter period than we expected for this type of cancer. Differences in disease stage probably indicate variations in symptomatology. Suggestions for future approaches concerning OC will be presented.

Pathways to diagnosis of a second primary cancer: a mixed methods systematic review

Authors: Lovney Kanguru, Annemieke Bikker, Debbie Cavers, Karen Barnett, David Brewster, David Weller, Christine Campbell
University of Edinburgh

Background: As cancer survivors continue to live longer, the incidence of second primary cancers (SPCs) is also rising. Evidence shows that the incidence of SPCs among cancer survivors ranges between 1% and 17%, depending on the index cancer site.

Early detection of cancers is an important strategy for improving cancer outcomes, as the stage of disease at diagnosis has been linked to survival for many cancers. Relatively little is understood about the pathways to diagnosis for a SPC, nor of patient and provider experiences and perspectives. We aim to systematically appraise and synthesise the literature on pathways to diagnosis of a SPC and associated patient and health-care provider experience.

Methods & results: We conducted a systematic search in Medline, Embase, CAB Abstracts, Medline-in-process and non-indexed citations, PsycInfo, CINAHL, ASSIA, Sociological Abstracts with no date or language restrictions. Observational, systematic reviews, mixed methods and qualitative studies were included. Inclusion criteria are any description of the pathway to diagnosis for a SPC (including patient and diagnostic intervals), or description of patient and provider experiences of an SPC diagnosis. 25,116 citations were found; titles, abstracts and full text articles are being screened. Subsequent narrative synthesis will be guided by the pathways to treatment model (Walter et al 2011), and the Olesen (2009) model of time intervals. The results of the synthesis are expected to be completed by April.

Conclusion: We will describe the current evidence in relation to the diagnostic pathways for SPCs. Together with other components of the study (survival outcomes, qualitative interviews, and case note reviews) the findings will inform policy and practice in approaches to early diagnosis of SPCs including the timing and reasons behind the decision by the patient to seek care, challenges faced by health-care providers, and in the development of future interventions to reduce the patient interval.

‘Throughout the cancer patient’s journey, there ought to be a discussion about work’: GP Provision of Work-Related Advice to Cancer Patients in Scotland.

Authors: Sarah E Murdoch¹, Thomas Cox², Mark S Pearce³, Neil Pryde⁴ and Sara J MacLennan¹.

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Background: Work offers many benefits to cancer patients. However, latent effects of cancer treatment can result in recurrent sickness absence and lowered work ability. Cancer patients frequently turn to general practitioners (GPs) for work-related advice and support. Few studies in Scotland have explored the role of GPs in advising cancer patients about work, despite the recommendation that employment should be discussed with cancer patients in primary care. The aim of this qualitative study was to develop a better understanding of the role of GPs in Scotland in providing work-related advice to cancer patients, with the intention of developing recommendations for practice.

Methods: In-depth telephone interviews were conducted with a purposive sample of nine GPs across Scotland. The interviews were audio recorded and transcribed verbatim, and analysed using a grounded theory approach.

Results: Three key themes emerged: 1) Current ways of supporting cancer patients in work engagement; 2) Barriers to providing work-related advice to cancer patients; 3) Reshaping services and changing behaviours. This led to the development of the core concept of: *Achieving the ideal role of GPs in providing work-related advice to cancer patients in Scotland*. A conceptual model was created to illustrate connections between key themes and the core concept.

Conclusions: To achieve sustainable ways of supporting cancer patients in their work, a multifaceted approach to change is needed. Key stakeholders need to work together and share the responsibility to better support cancer patients in their engagement with work. The conceptual model developed here could shape clinical practice and guide future research.

Using a computer search in primary care practices to screen people for generalist palliative care: AnticiPal

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Background: Primary care teams are well placed to provide holistic care, whether called “survivorship” or “early palliative care,” for patients with cancer and their family carers. However GPs are often unsure when to initiate such pro-active care. General Practice computers in the UK provide a database of patients’ diagnoses including “Read” codes indicating various important diagnoses and treatments. We have created a computerised search that GPs can use to help systematically identify people at risk of deterioration or death who are not already in receipt of palliative care.

Methods: We purposively recruited general practices based on urban/rural location and high/low percentages of patients already identified for palliative care. Quantitative data were collected over multiple runs of the search in each GP practice. The number of patients identified along with triggering codes (both malignant and non-malignant) were collected alongside demographic data. Qualitative data was generated through observing team meetings where the search outputs were discussed, and interviews with patients and GPs. Socio-technological theory was used to analyse the impact of the search and barriers to implementing pro-active care.

Results: The search identified 0.85% (n=433) patients out of a population of 51,874 in 8 practices as matching at least one of the trigger codes. People with matching codes for malignancies were more likely to already be in receipt of palliative care than those without but there were still significant numbers of patients with cancer identified by the search. Being matched by the search results acted as a prompt to provide additional support to the majority of cases.

Conclusions: An electronic search of primary care records can identify more patients with cancer for early palliative care. Barriers to end-of-life conversations are significant but systematically identifying patients for early palliative or anticipatory care by computer searching can help normalise this process.

'Good' palliative primary care according to advanced cancer patients and their relatives: An interview study on needs

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Background: Cancer causes approximately one third of all deaths in industrialized countries. Hence advanced cancer patients and their relatives are a main target group of palliative care.

Methods: In qualitative interviews with 13 Dutch patients and 14 relatives confronted with advanced cancer perspectives, experiences and needs regarding palliative care from GPs and home care nurses were explored. Interview data were analyzed qualitatively, by using principles of thematic analysis.

Results: Patients as well as relatives find it important that their GP and home care staff provide medically proficient care, that they are available, personally involved, and pro-active. Pro-activity means for example that the GP takes the initiative to discuss with the patient and close relatives what their care needs and preferences are. Additionally, adequate information transfer and continuous care are considered essential for good palliative care. However, patients and relatives also emphasize that their own alertness is vital for receiving the care one needs. Participants worry about other people who might not be alert enough.

Conclusions: Patients with advanced cancer and their relatives require GPs and home care nursing staff to be medically proficient, available, personally involved and taking care of good information transfer and continuity of care. Moreover, pro-activity of GPs and home care nurses is considered essential, particularly in people who are not alert regarding their own care needs and how these have to be met.

Palliative care for patients with cancer: do patients receive the care they consider important?

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Background: Many patients with advanced cancer receive palliative care from a GP and homecare nurse. Care for physical/psychosocial well-being, respect for patients' autonomy and information provision are important elements of palliative care, but it is not known whether patients receive the care they consider important

Methods: A total of 72 home-dwelling patients with advanced cancer were recruited via their personal GP. In addition, 87 of these GPs and 26 homecare nurses providing care to one of the 72 patients completed questionnaires. All participants rated the importance of care for physical/psychosocial well-being, respecting patients' autonomy and information provision. Patients were also asked whether they actually received these aspects of palliative care. Questionnaires were based on the patient version of the CQ index palliative care, which was adapted for GPs and nurses.

Results: Patients gave higher importance ratings to respect for autonomy and information provision than to support for physical/psychosocial well-being, with the exception of care for pain. GPs and homecare nurses rated respect for autonomy and information provision as even more important than patients themselves. In general, patients received the aspects of care they considered important. However, 56% to 65% of the patients who considered it important to receive care for fatigue, dyspnoea or depression/anxiety reported that they did not receive care for these symptoms. Besides, 22% of those who considered it important did not receive information on the expected course of their illness.

Conclusions: Most patients in this study received care for physical and psychosocial well-being, respect for their autonomy and information provision. Support for patients experiencing fatigue, dyspnoea and anxiety/depression by GPs and homecare nurses may need more attention. Besides, GPs should pay attention to patients' need for information about the expected course of their illness, despite the fact that this may be difficult to predict.

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ABSTRACT WITHDRAWN

Does emergency presentation of cancer result represent poor performance in primary care: new insights from a comprehensive primary care dataset

Authors: Peter Murchie, Michael Yule, Sarah Smith, Rosalind Adam, Melanie Turner, Amanda Lee, Shona Fielding.

Background: People diagnosed with cancer following emergency presentation have poorer short-term survival. To what extent this signifies a missed opportunity for earlier diagnosis in primary care remains unclear as little detailed data exists on the patient/GP interaction beforehand.

Methods: Analysis of primary care and regional data for 1802 cancer patients. Adjusted odds ratios (OR) and 95% confidence intervals (CIs) for patient and GP practice predictors of emergency presentation. Qualitative context coding of primary care interaction before emergency presentation.

Results: Emergency presentations equalled 20% (n=365). Broadly 32% received care deemed appropriate; 28% had no relevant prior GP contact; 22% were admitted while waiting to be seen in secondary care; and 14% were missed opportunities for earlier diagnosis. Associated predictors: no prior GP contact (OR=3.89; CI 95% 2.14-7.09); having lung (OR=23.24; 95% CI 7.92-68.21), colorectal (OR=18.49; CI 95% 6.60-51.82), and upper GI cancer (OR=18.97; CI 95% 6.08-59.23); ethnicity (OR=2.78; CI 95% 1.27-6.06).

Conclusions: Our novel approach has revealed that emergency cancer presentation is more complex than previously thought. Patient delay, prolonged referral pathways and missed opportunities by GPs all contribute, but EP can also represent effective care. Resources should be used proportionately to raise public and GP awareness and improve post-referral pathways.

Defining, measuring and preventing the diagnosis of cancer as an emergency: a critical review of current evidence

Authors: Yin Zhou*, Gary Abel, Willie Hamilton, Kathy Pritchard-Jones, Cary P. Gross, Fiona Walter, Cristina Renzi, Sam Johnson, Sean McPhail, Lucy Elliss-Brookes and Georgios Lyratzopoulos

*University of Cambridge

Background: Many patients with cancer are diagnosed through an emergency presentation, which is associated with inferior clinical and patient-reported outcomes compared with those of patients who are diagnosed electively or through screening. Reducing the proportion of patients with cancer who are diagnosed as emergencies is, therefore, desirable; however, the optimal means of achieving this aim are uncertain owing to the involvement of different tumour, patient and health-care factors, often in combination.

Methods: We searched the literature to identify all population-based studies that examined emergency presentation as a diagnosis or independent variable.

Results: Most relevant evidence relates to patients with colorectal or lung cancer in a few economically developed countries, and defines emergency presentations contextually (that is, whether patients presented to emergency health-care services and/or received emergency treatment shortly before their diagnosis) as opposed to clinically (whether patients presented with life-threatening manifestations of their cancer). Consistent inequalities in the risk of emergency presentations by patient characteristics and cancer type have been described, but limited evidence is available on whether, and how, such presentations can be prevented. Evidence on patients' symptoms and health-care use before presentation as an emergency is sparse.

Conclusion: In this Review, we describe the extent, causes and implications of a diagnosis of cancer following an emergency presentation, and provide recommendations for public health and health-care interventions, and research efforts aimed at addressing this under-researched aspect of cancer diagnosis.

Time-trends in diagnosis through emergency presentation among cancer patients in England: Evidence from population-based data, 2006-13

Authors: Annie Herbert, Gary A. Abel, Sam Johnson, Georgios Lyratzopoulos

Background: The risk of cancer diagnosis through emergency presentation (EP) has decreased (from 24% to 20% between 2006 and 2013). Some of this decrease could reflect trends in the case-mix of incident patients (e.g. fewer lung cancer diagnoses), but some could reflect genuine improvement in patient or healthcare factors implicated in EP.

Methods: We analysed English 'Routes to Diagnosis' data for 25+y old patients with any of 33 cancer sites (2006-2013). We estimated odds ratios (ORs) of EP for year [of diagnosis] adjusted for age, sex, deprivation, and cancer site. We presented crude and adjusted ORs of EPs for diagnoses in 2013 (vs. 2006), overall and stratified by cancer site. We repeated these analyses to examine time-trends for the two major types of EP –self-presentation to A&E (EP-A&E); and emergency hospital referral by a GP (EP-GP).

Results: Decreases in risk of EP were apparent even after adjusting for trends in patient case-mix (adjusted OR [95% CI] of EP in 2013 vs. 2006: 0.80 [0.79 to 0.81]). Decreases in risk occurred for 31/33 cancer sites (ORs from 0.65 for chronic lymphocytic leukaemia to 0.98 for Hodgkin's lymphoma). Across different cancer sites, there was no association between EP risk in 2006, and the size of corresponding decreases. Conditional on being diagnosed through EP, the risk of EP-A&E increased over time (adjusted OR: 1.1 [1.1 to 1.2]); and decreased for EP-GP (0.6 [0.5 to 0.6]).

Conclusions: Decreased risks of EP are not explained by changes in case-mix, and may reflect genuine changes in patient or healthcare factors affecting diagnosis of both easy- and hard-to-suspect cancers. Some reduction in risks of EP may be explained by fewer patients presenting to A&E without prior GP consultation. Increased risks in 'fast-track' referrals for suspected cancer may have contributed to these changes.

Title: Trends in socio-demographic inequalities in the risk of a cancer diagnosis through emergency presentation: Evidence from population-based data for England, 2006-13

Authors: Annie Herbert, Gary A. Abel, Sam Johnson, Georgios Lyratzopoulos

Background: There have been welcome decreases in the overall proportion of cancer diagnoses through emergency presentation (EP; 24% in 2006, 20% in 2013). There are known large socio-demographic inequalities in risk of EP, and it is important to consider whether they are narrowing or widening over time.

Methods: We analysed 'Routes to Diagnosis' data for patients diagnosed in England in 2006-2013, for any of 33 cancer sites (including all common and several rarer ones). Logistic regression was used to examine the interaction between age (25-49, 50-59, 60-69, 70-79, 80+y) and year of diagnosis (i.e. whether the inequality widened or narrowed over time), adjusting for deprivation (defined by Index of Multiple Deprivation quintiles), sex, and cancer site. The regression was also used to estimate the proportion of patients in each age group diagnosed through EP in each year, adjusting for different sex/cancer/deprivation make-up across the age/year groups. Analyses were repeated to examine deprivation inequalities.

Results: In 2006, there were notable inequalities in risk of EP by age (among 50+y olds adjusted proportions: 18% for 50-59y to 33% for 80+y) and deprivation (least: 20%, most: 27%). By 2013, though overall EP risks were lower, and despite evidence that age and deprivation inequalities changed over time ($p < 0.0001$, both interaction terms), the ranges of inequalities remained fairly unchanged (adjusted proportions, 50-59y: 15%, 80+y: 30%; least deprived: 18%, most: 23%). Model predictions indicated that although the overall EP risk in 2013 was 20%, elimination of deprivation, age, and deprivation and age inequalities would have resulted in corresponding risks of 17%, 16%, and 13%, respectively.

Conclusions: Although the absolute EP risk has decreased, there has been little reduction in related inequalities. There may be opportunities for further reductions in the proportion of patients diagnosed via EP, by eliminating socio-demographic gradients.

Comparison of Significant Event Audits of Patients Diagnosed with Cancer in two areas in the UK

Authors: Yiallourous, J^{1,2}, Lavery, B³, Audifferen, M³, England, B¹, Forster, L¹, Arnold, A¹, van Wonterghem, V.¹, Abiola, P.⁴, Paterson, A.⁴

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Background: Significant Event Audits (SEAs) are an established tool used within UK general practices to reflect on an event and undertake changes within practice to improve patient care; more recently SEAs have been analysed at an area level. Thames Valley Strategic Clinical Network (TVSCN) commissioned Cancer Research UK (CRUK) to carry out an audit of patients who were diagnosed with cancer following an emergency presentation (EP) using SEAs. Newham Clinical Commissioning Group commissioned Qualjenuity Ltd to analyse SEAs for cancers diagnosed through any route including routine, urgent and EP.

Methods

SEAs were used to collect the data from GP practices in both studies: Thames Valley - 172 SEAs, Newham - 95 SEAs. The SEAs were analysed using thematic analysis for the comparison presented here.

Results

From both studies the underlying factors which led to why cancer was not diagnosed earlier could be grouped into three broad areas; tumour, person, system (including primary and secondary care). Learning points put forward by the GP practices could be amalgamated into several themes including events during the primary care consultation, processes in primary care, the interface with secondary care, and issues with investigations.

The findings from the two studies were remarkably similar. However, one notable difference was that the Thames Valley GPs (EPs only) referred to discussions on end-of-life care whilst the Newham GPs (all routes) commented on the need to support patients through the diagnostic process. This difference is probably due to the proportion of cases alive at the time of SEA review (Thames Valley – 25%, Newham – 75%); this is likely to reflect the later stage of disease of those diagnosed through EP.

Conclusion

SEAs provide a rich source of data and their undertaking should be encouraged at a practice level for all routes to diagnosis including EPs where the GPs consider that improvements could be made.

‘Half-baked’: Are Significant Event Audits for cancer diagnoses completed in the way they were designed?

Authors: J Yiallourous¹, V van Wonterghem², P Abiola³, A Paterson³

Affiliations - ¹Qualjenuity Ltd, ²Cancer Research UK, ³Newham Clinical Commissioning Group

Background: Significant Event Audit (SEA) is a tool used routinely within primary care to reflect on an event, learn from the experience and undertake changes within the practice to improve patient care; more recently SEAs have been used for research purposes. Newham CCG commissioned Qualjenuity to undertake a quality and thematic analysis of SEAs submitted by GPs in Newham.

Methods: Ninety-five SEAs were provided and analysed for the quality of how each section was completed. Simple descriptive statistics were used to assess the quality of the SEA and to identify areas where there was room for improvement.

Results: Case selection was considered good or excellent in around three quarters of the cases. The SEAs ranged in how well reflection happened from simple précis of ‘what happened’ to full reflection of the event. On the whole the lessons described fitted well with the events which happened and the actions suggested were appropriate to the lessons. The main area of weakness identified was in how well the suggested actions were monitored with only a few SEAs providing this level of detail.

Conclusion: The study concludes that SEAs provide a great opportunity to reflect on significant events within the practice. However, they may fall short in being the mechanism to ensure that these changes happen within the practice and that the impact of these changes are appropriately monitored. It is recommended that GP practices should introduce systems to:

Agree an action and how it will be implemented

Be clear on who is responsible, and how to monitor

Check the impact of the action and amend if necessary

Document

Everything.

Newham CCG are using the findings to shape their education programme with an emphasis on action monitoring in GP practices; this is with a view to embedding lessons learnt so they become part of everyday practice.

Diagnostic safety: Chest X-ray referral in a Safety-II perspective

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Background: Diagnosis is a critical and often complex part of the cancer patient trajectory. Timely coordination of referral, investigation and follow-up on test results across general practice and hospital is pivotal but challenging. According to studies of adverse events in Danish cancer care, lapses in communication and coordination cause prolonged diagnostic intervals.

Recent efforts suggest shifting safety management strategies away from focusing on error detection and incident management (Safety-I) towards a more proactive approach based on the fact that things usually go right (Safety-II).

The aim of this pilot study was to provide insight into variability in the diagnostic process from the general practitioner refer a patient to a chest X-ray at the hospital until the patient receives the results. Thus, with a Safety-II perspective to investigate how and why the diagnostic process usually go right.

Methods: A Danish pilot study at five hospitals (radiology departments) and general practices in their catchment areas. Data from observations and semi-structured interviews with health care professionals were modelled and analysed using the Functional Resonance Analysis Method (FRAM).

Results: Work processes that impede timeliness in chest X-ray activity were unveiled and missing process elements identified. Variability in the sequence of chest X-ray process elements (i.e. diagnostic follow-up and coordination) is influenced by the working environment, workflow, clinical context, work demands and staff resources in the general practices and hospitals involved.

Conclusions: This pilot study identify factors underlying variability in chest X-ray processes. It proposes activities and tasks required to 'close the loop' on referrals and test results and highlights the need to focus on the system's resilience to reach safe and timely diagnostic.

The effect of a normal chest x-ray on the diagnosis of lung cancer: in-depth analysis of Significant Event Audits.

Authors: Daniel Jones, E Mitchell, I Watt, V Allgar, U Macleod

Background: The NICE guidelines on the recognition and referral of cancer advise an urgent chest x-ray (CXR) in patients with symptoms or signs suggestive of lung cancer. However, studies consistently show that patients with lung cancer may have negative CXRs, with 'false negative rates' between 19 and 50% reported. Despite this, little is known about the effect of a normal CXR on a patient's pathway to diagnosis or on the actions of GPs. This study used Significant Event Audit (SEA) reports to review the frequency of normal CXRs and assess what happens to patients in primary care after a normal CXR?

Method: Significant event audits (SEAs) were completed using the primary care records of all patients diagnosed with lung cancer between 2012 and 2016 in nine practices. Data were collected using a standardised SEA template which had been developed for the RCGP's early cancer diagnosis toolkit. Detailed analysis was undertaken on the data of those patients with normal CXRs in the period from index presentation to diagnosis.

Results: In total 118 cases of lung cancer were analysed. Of these, 37 (31%) patients had a CXR which was negative for lung cancer. A negative CXR significantly increased median time to diagnosis with a fivefold increase in time to referral. A detailed review of cases showed that negative CXRs seemed to divert the GPs attention away from the possibility of lung cancer with multiple trials of treatments, routine referrals and referrals to other specialities being made.

Conclusions: This is the first study to look in detail at GPs actions following a negative CXR and provides an interesting insight on the effects of a negative result. The findings suggest that GPs should have a low threshold for organising further investigations or referring patients urgently if there is any suspicion of cancer particularly if symptoms persist or worsen.

The Help-Seeking Experiences of People with Symptoms of Lung or Colorectal Cancer: a Contextual Model of the Patient Interval

Authors: Dobson, C.M., Russell, A.J., Brown, S.R. & Rubin, G.P.

Background: Diagnostic delay has been a key focus for cancer research because of its association with poorer outcomes. The patient interval is believed to be a substantial contributor to time to diagnosis and there is evidence suggesting that the length of the patient interval is associated with stage and survival. This study considered whether social context influenced how people appraised and responded to symptoms of lung or colorectal cancer.

Methods: Participants referred to the University Hospital of North Tees, Stockton-on-Tees, with a suspicion of lung or colorectal cancer were invited to take part in a mixed methods study, consisting of a questionnaire and semi-structured interviews. Of the 164 participants, 26 were purposively sampled for interview, based on symptoms, diagnosis and patient interval length. Interviewees were asked about their symptoms, the impact of these symptoms, the wider social context and the role of others in their help-seeking. A constructivist grounded theory approach was adopted, which entailed theoretical sampling, constant comparison of data, and analysis taking place concurrently with fieldwork.

Results: Symptom experience, appraisal, help-seeking decision making and consultation were identified as the key stages of the patient interval. These stages were shaped by factors which can be located within one of four contextual domains: individual experience, interpersonal relationships, health care system interactions and social and temporal context. These stages and contextual domains, which shape and define the patient interval, are brought together in a novel model, which we call *The Contextual Model of the Patient Interval*.

Conclusions: *The Contextual Model of the Patient Interval* illustrates the stages people move between in the journey from symptomatic experience to consultation with a Health Care Practitioner, and the wider contextual domains which exert influence on this journey. This model has utility as a tool to guide research into the patient interval.

The LUCAS Study: A qualitative study of delayed presentation of potential symptoms of lung cancer in smokers.

Authors: Hendry, A. Hiscock, J. Neal, RD.

Background: Most cases of lung cancer are attributable to smoking. Previous research has shown that smokers often delay visiting their GP with chest symptoms. This project aims to explore the reasons for those delays, particularly, perceived barriers and facilitators to presentation due to factors associated with smoking.

Methods: Qualitative interviews were carried out with a purposive sample of recently diagnosed lung cancer patients in North Wales. The interviews were designed to explore the experiences of lung cancer patients with particular reference to patient intervals and smoking related factors. Topic guides for the interviews were built upon evidence gathered from systematic and narrative literature reviews. All interviews were fully transcribed and analysed using Nvivo software.

Early results: Early analysis shows that patient intervals are complex and that participant's consulting decisions are influenced by a variety of factors. Some participants showed a lack of symptom awareness and understanding of the relationship between smoking and lung cancer which potentially led to a decreased risk perception and a later presentation. In other participants there was a clear knowledge of the relationship between smoking and lung cancer which led to feelings of self-blame for their disease and a sense of stigmatisation from others for their behaviour and their condition.

Conclusion: These preliminary findings show a need for further exploration into reasons behind patient intervals and reluctance to present. A greater understanding of the consulting decisions of smokers will allow for the development of interventions designed to encourage primary care usage which has the potential to facilitate earlier diagnosis and improve outcomes.

Ethnic variations in the use of primary care among men with symptoms suggestive of prostate cancer: a multi-methods study.

Authors: Tanimola Martins, William Hamilton and Fiona M. Walter

Background: Black men have poorer outcomes of/from prostate cancer compared to men from other ethnic origins. We previously showed in a vignette-based study that Black men were less likely than White men to accept Prostate Specific Antigen testing or digital rectal examination once they had seen their GP. This reduced willingness for investigation may contribute to diagnostic delay in black men, although we are uncertain whether when in real disease situation patients would choose as they did in that study or do otherwise. This study, therefore, aims to investigate ethnic differences in; a) medical help-seeking; b) primary care investigation; and c) time to diagnosis of possible prostate cancer.

Methods: Multi-methods study, comprising a survey, review of selected patients' records, and semi-structured face-to-face interviews with men with urinary symptoms. The present abstract focuses on the survey. We aimed to survey 600 men (aged at least 40 years) who recently presented urinary symptoms to their general practices in London area. Participant recruitment is still ongoing. Preliminary analysis used simple descriptive statistics and multiple regression models.

Results: 116 men from 23 practices have been recruited: 10 (9%) Asian, 18 (16%) Black and 85 (73%) White men. Nocturia (66%) and erectile dysfunction (61%) were the commonest reported symptoms while haematuria (17%) was the least common symptom. Most men in our cohort so far consulted their GP within the first 3 months of symptoms onset, with 66% of cases with haematuria seeking help within a week of onset. However, a third of men delayed consultation for more than 1year regardless of symptoms. There appears to be no difference by ethnicity in time to diagnosis.

Conclusion: These are initial findings, and so should be interpreted with caution. More comprehensive analysis will be performed close to the conference.

Development of the Pathways to Healthcare Questionnaire (PaTH-Q): Content and Face Validation

Authors: Sonja Kummer (King's College London, UK), Dr Fiona M Walter (University of Cambridge, UK), Dr Joseph Chilcot (King's College London, UK), Dr Suzanne Scott (King's College London, UK)

Background: To assess the content and face validity of a theory based questionnaire (The Pathways to Healthcare Questionnaire; PaTH-Q), based on the 'Model of Pathways to Treatment', that can be applied with patients who have recently sought help for potential cancer symptoms. The PaTH-Q aims to determine the extent to which 'heuristics' and 'reasons to consider help-seeking' influence symptom interpretation and time to presentation.

Methods: To develop the PaTH-Q 49 in-depth [semi-structured] interviews of patients referred with symptoms suspicious of cancer were analysed. A directed content analysis approach and categorisation matrix underpinned by the concepts and definitions within the 'appraisal' interval of the 'Model of Pathways to Treatment' was used to explore the data. This helped to inform the generation of items that reflected the factors of the relevant theory in relation to symptom interpretation. Two stages of content and face validation were performed. Content validity was established via an expert panel (n = 10). Face validity was determined via cognitive interviews conducted with n = 8 cancer patients to identify any problems that individuals may encounter when they complete the PaTH-Q.

Results: Following the first stage of content and face validation modifications were made to the PaTH-Q. Content validity of the revised questionnaire, following the second validation stage, was supported by subscale CVI, ranging from 0.78 to 0.98, and item CVI, ranging from 0.70 to 1.00. Findings from the cognitive interviews indicated that on the whole the PaTH-Q was interpreted as intended.

Conclusions: The 42 item PaTH-Q promises to measure how 'heuristics' and 'reasons to consider help-seeking' influence symptom interpretation and time to presentation. However, further validation is required to establish the psychometric properties of the questionnaire, specifically its factor structure (via an exploratory factor analysis), reliability (internal consistency, item discrimination) and validity (discriminant, predictive, and construct).

A qualitative study of cancer presentation and diagnostic management within primary care: the influences of the lay community and the formal health-care delivery system

Authors: Hong Chen, Louis Bailey, Miriam Johnson, Una Macleod

Background: Cancer survival in the UK is lower than in many other European countries; late stage at diagnosis is an important contributory factor. In the UK, the first step towards diagnosis for most cancer patients on noticing a bodily change is a visit to a primary care practitioner (GP). Evidence suggests that delays occur in both patient pathways to presentation and initial management within primary care. This study aimed to improve our understanding of the factors that may contribute to prolonged time to presentation and to referral, using lung and head and neck cancers as exemplars.

Methods: We conducted qualitative interviews with cancer patients. We explored: their experience of symptom development; their actions in response to the symptom(s) and the reasoning behind the actions; social influences on their actions; and their interactions with GPs leading to a diagnosis and in general. We analysed interview transcripts using framework analysis and drawing on sociological theories about health service utilisation.

Results: We interviewed 30 patients from a diverse background. We found it common for them to i) self-care before presenting symptom(s) to a GP and ii) undergo multiple consultations with subsequent watchful waiting, treatments, investigations and/or other referrals before the right referral, which prolonged time to diagnosis. We found two predominant barriers to symptom presentation: worry about wasting doctor's time and difficulty booking appointments. We identified psychological, health-system and social-network related factors that may have contributed to this situation and established the link between individuals' (patients' and GPs') responses to cancer symptoms and the opportunities and limits set by the lay community and the formal health care delivery system.

Conclusions: The social network of patients, accessibility and availability of and system-level support for GP services must be considered in our efforts to improve early diagnosis in the UK.

Describing the methodological steps to develop an evaluation of the Detect Cancer Early Programme in Scotland

Authors: [Natalia Calanzani](#), David Weller, Christine Campbell
University of Edinburgh

Background: The Detect Cancer Early (DCE) Programme is a government initiative in Scotland aiming to promote the earlier diagnosis of cancer. This abstract describes the methodology adopted to inform the development of an evaluation of this programme (Stage 1 of evaluation). Stage 1's specific aims were to involve stakeholders in the evaluation, to better understand the programme components and to help define which key aspects should be evaluated. The DCE evaluation aims to assess the programme's implementation, processes and outcomes.

Methods: Stage 1 consisted of analysis of policy documents, development of a logic model and semi-structured interviews with DCE stakeholders. Criterion sampling and maximum variation sampling were adopted to ensure that different stakeholder groups could provide their views about the programme. Interviews were carried out face-to-face or over the telephone, digitally recorded, anonymised, transcribed verbatim and are being analysed using framework analysis. The software NVivo is being used to aid data analysis.

Results: Seventy-seven policy documents were reviewed and summarised; these aided the development of interview schedules, a list of key stakeholders and the programme's logic model. Nine stakeholders were invited to take part in interviews and all agreed to do so. Interviews were carried out from May to August 2016; duration ranged from 32 to 77 minutes. A thematic framework has been identified and data analysis will be finalised by February 2017. Themes include: DCE inception and development, perspectives on DCE and its components, what to evaluate, outcome evaluation challenges and overall context. Final themes and participants' quotes will be presented at the Conference, alongside main implications for the DCE evaluation.

Conclusions: Findings are being used to refine the logic model, to guide the development of evaluation questions and the design of the full DCE evaluation. The evaluation will be carried out later in 2017.

The characteristics of national health initiatives promoting earlier cancer diagnosis among adult populations: a systematic review

Authors: [Natalia Calanzani](#), Leonie Nijenhuis, David Weller, Christine Campbell
University of Edinburgh

Background: The increasing burden of cancer morbidity and mortality has led to the development of national health initiatives to promote earlier cancer diagnosis and improve cancer survival¹. Although synthesising results of such complex initiatives is challenging, efforts should be made to review the evidence in order to inform future initiatives and enhance transparency and accountability. We aim to systematically review the literature on such initiatives promoting the earlier diagnosis of cancer amongst the adult population. We will describe their components, stakeholders, and target populations, and summarise their outcomes.

Methods: We are searching databases (including EMBASE, PsycInfo, Medline and ASSIA); and websites (including charities, governmental and non-governmental agencies) for peer-reviewed publications and grey literature on national health initiatives in high-income countries as defined by the World Bank. Initiatives include but are not limited to: campaigns to increase awareness of cancer, training for health care professionals, and development of pathways to cancer diagnosis. Quantitative, qualitative and mixed-methods studies are eligible for inclusion. Study selection, quality assessment and data extraction are being carried out independently by two reviewers. Narrative synthesis will be used to analyse the findings. The systematic review protocol is registered at PROSPERO (CRD42016047233).

Results: Database searches commenced in September 2016; quality assessment has started for strategies which have already met eligibility criteria (n=7). Findings will be described in text and in tables and categorised according to Taplin et al's refined model of multi-level influences on the cancer care continuum².

Conclusions: Review findings will be helpful to researchers, policy makers, governments and other key stakeholders developing similar initiatives and assessing cancer outcomes. The results will be submitted to a peer-reviewed journal in order to reach a diverse group of health care professionals, researchers and policy makers.

References:

- Richards MA. The size of the prize for earlier diagnosis of cancer in England. *Br J Cancer* 2009; 101:S125-S9.
- Taplin SH, Anhang Price R, Edwards HM, et al. Introduction: Understanding and Influencing Multilevel Factors Across the Cancer Care Continuum. *JNCI Monographs* 2012; 2012:2-10.

Qualitative evaluation of ACE interventions

Authors: Dr Ingrid Ablett-Spence, Dr Jen Howse, Prof Greg Rubin

Background: The Accelerate, Co-ordinate and Evaluate (ACE) programme aims to develop a national body of evidence to inform operational improvement of early diagnosis cancer pathways in England. Sixty interventions, specific to local needs and priorities, were included in the first phase of the programme. All aimed to improve cancer diagnosis and ultimately survival rates, but used different targets and mechanisms to drive service changes.

Methods: On behalf of the Policy Research Unit for Cancer Screening, Awareness and Early Diagnosis, we undertook a realistic evaluation based on detailed case studies of nine ACE sites. We used sequential one-to-one interviews, review of meeting notes and observation of cluster action learning sets. Interviews were recorded, transcribed and analysed using Framework analysis.

Realistic Evaluation (Pawson and Tilley 1997) explores 'what worked for whom and in what circumstances'. This approach helps illuminate if and why certain elements of the initiative resulted in the intended outcomes. Normalisation Process Theory was used to understand the extent to which projects were implemented.

Results: 142 interviews were conducted. Eight of the nine projects were successfully implemented. However, the extent to which each became normalised varied.

Important contexts included prevailing organisational culture, presence of factors associated with successful quality improvement and inclusion in a high profile, national initiative. The mechanisms enabling implementation included good project management, clinical leadership and engagement and communication within and between partner organisations.

Conclusions: Participants were generally highly motivated to drive forward service improvement. It was apparent that initial assessment of the shared understanding and commitment within and between organisations, and of the capacity, capability and skills required, would have benefited some projects. In future service improvement projects, appraisal at planning stages could ensure that key elements are in place for successful implementation.

Pathways to lung cancer diagnosis and treatment – a retrospective medical record audit in NSW, Australia.

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Background: Lung cancer is a major international health concern. Evidence shows significant variations in time to commencement of treatment for lung cancer patients. A recent Australian study showed that less than 50% of audited patients met the Victorian Lung Cancer Registry (VLCR) targets from diagnosis to treatment start (<14 days) and from first specialist referral to treatment start (<42 days). There is no published data for NSW patients, Australia's most populous state. This study aimed to examine the defined interval times for NSW lung cancer patients and identify the proportion meeting VLCR targets.

Methods: A retrospective medical record audit of 103 patients was conducted using data from one metropolitan and one regional NSW cancer centre in NSW. Analysis included all patients with a confirmed diagnosis of primary lung cancer. Data collected included demographics and dates (types of specialist referral, appointments, diagnosis, treatment modalities).

Results: The overall median time from diagnosis to first treatment start was 6 days (IQR, 0,22); 60% met the 14-day target, whilst first specialist referral to first treatment median was 23 days (IQR 10, 53); 64% meeting the 42-day target. Statistically significant differences exist between the two sites. Patient with early stage disease and first entry point via primary care contribute to longer delays from referral to diagnosis. Conversely, patients with later stage disease who present via emergency are more likely to have defined symptoms, enabling rapid diagnosis and are more likely reside in a regional area.

Conclusion: This study provides further evidence of variations in lung cancer intervals the Australian setting. Our findings are consistent with previous studies. Further work is needed to establish why so many patients have interval times that fall outside the current targets. Our findings contribute to existing calls to develop agreed national targets for lung cancer and implementation into clinical practice.

The RoaDmaP pilot study: testing the feasibility and acceptability of a primary care intervention for referral of potential lung cancer cases to specialist care

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Background: General Practitioners (GPs) play a vital role in ensuring that people diagnosed with lung cancer receive timely access to appropriate specialist care. The RoaDmaP pilot study aimed to develop, implement and evaluate a Referral Decision Prompt (RDP), which supports GPs to refer patients with a suspicious lung lesion on CT scan for specialist care. Our objectives were to evaluate feasibility and acceptability with patients, radiology practices and GPs, and to test RDP integration into standard radiology practices.

Methods: The RDP intervention was developed with key stakeholder input and tailored for three participating radiology practices. Eligibility criteria included any patient aged over 18 attending radiology for chest CT scan. Recruitment and consent procedures were tested with patients. An RDP template was integrated into CT scan reports for patients with suspicious lung lesions. Follow up data collection was conducted with GPs and hospitals to confirm cancer diagnosis. We conducted a process evaluation with GPs, radiologists and radiology staff.

Results: Over seven months, 445 patients attended radiology practices for a CT scan; 400 were given study documents; 293 consented (73%); and 12 patients had suspicious lung lesion (conversion rate of 4.1%). Seven of 12 patients have had a confirmed lung cancer diagnosis. Patients were willing to engage in research that did not require their further participation. Process evaluation findings indicate that this simple, low-cost intervention can be easily integrated into radiology reporting practices, with GPs, radiologists, radiographers and administrative staff reported high levels of feasibility and acceptability.

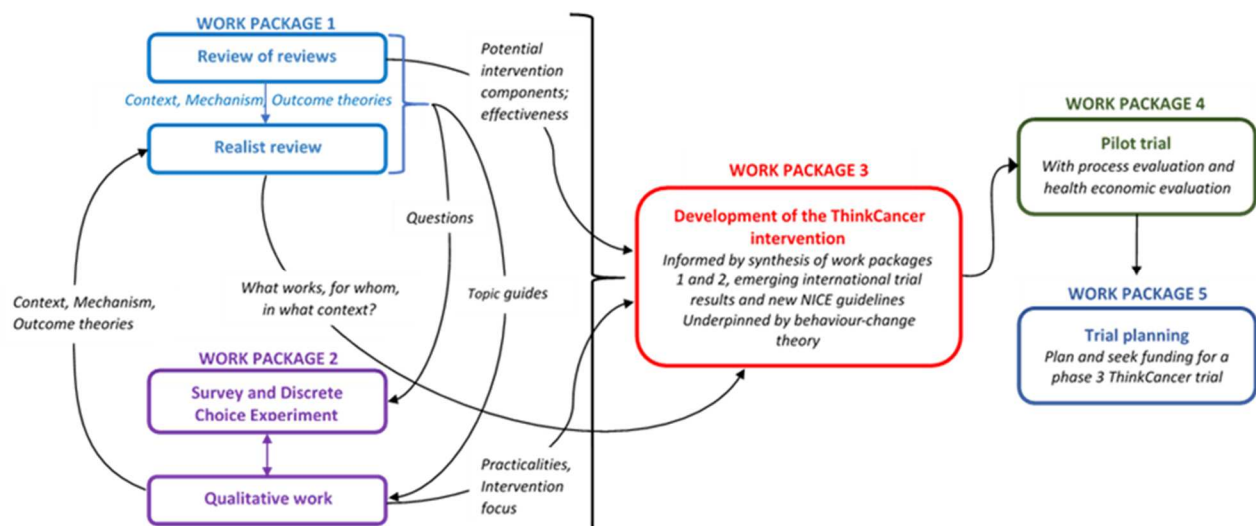
Conclusions: The RoaDmaP study presents an innovative approach to implementation of a primary care intervention. It appears to be feasible in supporting GPs to make timely referral to a lung cancer specialist. Data have been used to seek funding to measure the impact on time intervals and examine changes in GP referral practices.

‘WICKED’ (Wales Interventions and Cancer Knowledge about Early Diagnosis): The development and evaluation of primary care interventions to expedite the diagnosis of symptomatic cancer in Wales

Authors: Richard Neal, [Marian Andrei Stanciu](#), Sadia Nafees, Rebecca-Jane Law, Maggie Hendry, Seow Tien Yeo, Julia Hiscock, Ruth Lewis, Clare Wilkinson, on behalf of the WICKED team

Background: Early cancer diagnosis is a major contributor to survival and primary care plays an important role in reducing delayed diagnosis. Wales, like other UK countries, has relatively poor cancer outcomes. There is an evidence gap relating to effective ways of reducing the time between symptom presentation by patients and referral. This programme of work aims to synthesise current evidence and gather new evidence in order to develop and evaluate a complex intervention for primary health care professionals, with the intention of improving cancer outcomes.

Methods: ‘WICKED’ is divided into five interconnected work packages and is heavily grounded within the MRC Framework for the development and evaluation of complex interventions. We will conduct a review of reviews to identify relevant interventions, and health economic evaluations, followed by a realist synthesis to determine why the interventions do or don’t work, for whom, in what circumstances, and, if possible, what budgetary impact they have. Using a survey and discrete choice experiment, we will explore GPs’ views about different factors or attributes surrounding the means of earlier diagnosis of cancer in primary care. Qualitative methods will be used to gain an in-depth understanding of personal beliefs and behaviour (interviews with GPs) and practice team systems and norms (practice-based focus groups). Both datasets will be analysed using Framework and the COM-B model and Theoretical Domains Framework. Findings from the review, quantitative and qualitative work will be synthesised to inform the components of the intervention. We will then undertake a pilot trial in preparation for the development of a Phase III trial.



Results: We will describe the methods for this new programme of research funded by Cancer Research Wales and present early findings from the review of reviews.

Conclusions: This is a comprehensive programme of work aiming to improve cancer outcomes in Wales and beyond.

Time to referral after alarm symptoms for colorectal cancer in primary care.

Authors: CW Helsper, NF van Erp, JW Roskam, RAM Damoiseaux, PHM Peeters, NJ de Wit

Background: Alarm symptoms are pivotal for recognising colorectal cancer (CRC) in primary care. We aim to assess the time to referral after presentation of alarm symptoms for CRC patients in Dutch primary care.

Methods: Retrospective observational study among CRC patients presenting in primary care with 'established alarm symptoms' or 'alarm symptoms according to Dutch guideline for rectal blood loss (RBL)', registered with CRC in both routine primary care data and the Netherlands Cancer Registry between 2007 and 2011. Duration (median days, IQR, P90) and reason for long duration (>P90) were extracted from free text routine primary care data.

Results: Among CRC patients presenting in primary care, 62% presented with an 'established alarm symptom': 43% of all patients reported RBL; 21% weight loss and 15% a palpable mass. 'Alarm symptoms according to Dutch guideline' included; RBL combined with age over 50: 37%, RBL and changes in bowel habit: 30%, RBL and absence of perianal abnormalities: 36%. Median duration from alarm symptom to referral was one day, except for weight loss (five days). In cases with RBL and "perianal abnormalities present", median duration was 47 days (IQR: 1 to 117). Longest duration (>P90) started at 9 days (palpable tumour), 128 days (RBL) and 225 days (weight loss). Main reason >P90: 'non-cancer diagnosis more likely' or 'patient induced'.

Conclusions: The main obstacle hampering fast diagnosis of CRC in primary care is the masking effect of perianal abnormalities.

Geographic variation in diagnostic time intervals

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¹ Research Centre for Cancer Diagnosis in Primary Care (CaP), Research Unit for General Practice, Department of Public Health, Aarhus University, Denmark.

Background: Cancer diagnostics and treatment are in Denmark centralised and offered at specialised hospitals in larger cities. The purpose is to ensure high quality and to improve survival. However, it is unclear if this geographic organisation of cancer facilities has an impact on the route to the diagnosis pathway. The aim of this study is to investigate whether distance to general practitioner (GP) and cancer hospital is associated with the diagnostic cancer pathway.

Method: The study population of this register-based study consists of incident cancer patients diagnosed between 1 January 2005 and 31 December 2010 identified from a Danish National Cohort (the CAPS cohort). In total, 22.000 cancer patients are identified and distance to each patient's GP and hospital of diagnosis will be calculated using ArcGIS.

Time intervals are defined based on an international consensus (the Aarhus Statement) and the following intervals will be studied: patient interval (time between first symptom recognition until first GP contact), diagnostic interval (time between first GP presentation until diagnosis) and system interval (the time between the first primary care investigations until start of treatment).

Results: Results illustrating the association between distance to the GP and hospital of diagnosis and the time intervals will be finalised for presentation.

Conclusion: This study will provide insight into the unanswered question if there is a geographic variation in time to diagnosis in Denmark. All cancer patients should have equal access to diagnostics and treatment, and this study will help health care planners to optimise cancer care.

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Ovarian cancer outcome and variation in referral rates for transvaginal ultrasound examination from general practice

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Background & Aim: Ovarian cancer (OC) is the seventh most common cancer in women worldwide. As the disease is often diagnosed at a late stage, OC has a poor prognosis. In Denmark, 74% are diagnosed in FIGO stages III and IV with a 5-year survival of 40% and 20%, respectively, compared to 85% in FIGO stage I.

Knowledge is sparse about the consequences of variation in referral rates to transvaginal ultrasound (TVU) examination through general practice. We aim to investigate the association between referral rates to TVU examination in general practice and OC-related outcomes in Denmark.

Method: A national register-based ecological cohort study based on data collected in 2002-2014 is conducted. Women who are cancer-free, living in Denmark and aged ≥ 40 years are included. The analyses consist of two steps. First, we rank general practices into four groups based on the yearly TVU referral rate. Second, the OC patients in the four groups are compared regarding to stage distribution and resectability.

Results: We hypothesize that higher referral propensity to TVU through general practice leads to a more favorable OC stage distribution and to less OC tumor burden. The register study is ongoing, and detailed results will be presented.

Conclusions: Variation in referral to TVU through general practice may have consequences for the practice populations. This study will provide an evidence base for the benefits of open access to TVU through general practice.

Do the characteristics of general practice workforce in England predict practice level-variation in use of urgent referrals for suspected cancer and endoscopies in English primary care

Authors: Gary A Abel, Silvia C Mendonca, Carolyn Gildea, Sean McPhail, Mick D Peake, Greg Rubin, Hardeep Singh, Willie Hamilton, Fiona M Walter, Martin Roland, Georgios Lyratzopoulos

Background: Evidence from ecological studies suggests that patients with cancer who attend general practices with higher use of endoscopies or urgent referrals for suspected cancer may have better clinical outcomes. It is therefore important to understand the potential predictors of high/low use of endoscopies and urgent referrals.

Methods: We used Cancer Services Public Health Profile data for about 7000 English practices. Employing mixed effects logistic and Poisson regressions we examined practice-level associations between endoscopy and urgent referral rates for suspected cancer, with practice team characteristics and practice population characteristics.

Results: Due to the sample size, many associations of small magnitude were statistically significant and so we concentrate on those associations with the largest magnitude. Practices with, older doctors, more male doctors and more overseas-qualified doctors had lower urgent referral rates. For example practices at the 10th centile of the national distribution of mean doctor age had, on average, urgent referral rates of 24.1/1000 patients, being substantially higher than the rate of 19.1/1000 patients at the 90th centile. ($p < 0.001$). Practice team characteristics explained 19% of the between practice variance. In general practices serving older populations, and those with higher level of population deprivation, had substantially greater use of urgent referrals and endoscopies.

Conclusions: Practices with younger, female and UK-qualified doctors, and training status have substantially higher rates of urgent referrals for suspected cancer. Interventions to increase appropriate urgent referrals for suspected cancer can be suitably informed by these findings.

Comparing the literal cancer journey for colorectal cancer patients between Denmark, England and Scotland.

Authors: Peter Murchie, Line Jensen, Penny Murage, Andy Jones, Peter Vedsted Melanie Turner, Shona Fielding.

Background: Most global literature exploring rurality and cancer has found poorer cancer outcomes for those with increased distances to travel. Consequently, it has been theorized that poorer access to healthcare facilities could be one of the explanations causing this phenomenon. We wish to compare the literal cancer journey (the distance from home to a GP, centre of cancer diagnosis and centre of cancer treatment) between Northeast Scotland and Denmark. All three countries have poorer cancer outcome than comparable countries, yet Denmark is better off than Scotland and England. We wish to determine if Danish people diagnosed with CRC live closer to key healthcare facilities than their UK counterparts.

Methods: We will compare two databases detailing the literal cancer journey of 2775 CRC patients in Northeast Scotland (NASCAR), 3000 CRC patients in Denmark (CAPs) and 159,768 CRC in England. In each dataset GIS technology has been applied to postal codes and/or addresses to determine, for each patient, their travelling time from their home to their GP, home to centre of cancer diagnosis and home to centre of cancer treatment

Results:

- 1) We will describe the key geographical features of CRC diagnosis in Denmark, England and NE Scotland
- 2) We will present data comparing the demographics of the Danish, English and NE Scottish patients.
- 3) We will describe the geographical distribution of the three sets of CRC patients in relation to their GP surgery; centre of cancer diagnosis and centre of cancer treatment.

Conclusions: We will compare and present basic descriptive data from the three datasets. Further we will discuss our results within the context of the relative organization of the Danish, English and Scottish Health Service and relative CRC survival in the three countries. Finally, we will discuss our ideas for the methods to underpin a future CaPRI cancer geography collaboration.

The story of melanoma in primary care: presentation, policy and its association with diagnostic duration.

Authors: C.W. Helsper, N.F. van Erp, S.M. Olyhoek, M. Slijkhuis, P.H.M. Peeters, N.J. de Wit

Background: An efficient diagnostic pathway is a common goal for all cancers, including melanoma. The aim of this study is to assess the factors influencing the time to referral and diagnosis for melanoma patients in primary care.

Methods: A retrospective observational study using free-text and coded anonymized routine primary care data, linked to the Netherlands Cancer Registry. For patients who were referred to secondary care for diagnostic excision, the time from first GP consultation to referral (IPC) and the time from referral to histological diagnosis (IR) was determined. For patients for whom the GP performed the excision, we determined the time from first GP consultation to diagnostic excision (IGP) and the time from excision to histological diagnosis (IPD).

Results: 85% of melanoma patients presented to their GP with a 'suspicious lesion' and 42% presented with an additional complaint. Patients were referred for excision in 74%. Median IPC duration was 1.0 day, 89% was immediately referred. Reasons for relatively long IPC duration included; 'benign aspect of lesion' and 'patients' request to wait'. Median IR duration was 20 days (IQR 9 to 43 days). Relatively long IR was seen in case of: high SES, four or more comorbidities, skin-related comorbidity, previous consultations for naevi, or 'already seeing dermatologist'. For the 26% for whom the GP performed the diagnostic excision, median IGP duration was 8.5 days (4 to 35 days). Reasons for long IGP duration included 'benign aspect of lesion', and 'waiting for excision appointment'. Median duration of IPD was 4 days (3 to 6 days), 88% of patients received a final diagnosis within one week.

Conclusions: Among melanoma patients presenting to the GP, the time to diagnosis is usually acceptable and not strongly related to referral policy. Waiting times for excision and patient-requested delays are the main influenceable determinants of long duration.

Safety in primary care relating to melanoma diagnosis – what can we learn from interviews with patients recently diagnosed with melanoma?

Authors: Nadia Llanwarne, Clarissa Penfold, John Emery, Fiona Walter

Background: Timely diagnosis of melanoma is key to improved patient experience, treatment outcomes and survival. Whilst melanoma benefits from one of the shortest primary care intervals, in up to 10% of cases, patients experience multiple consultations with their GP before being referred to secondary care. We know little about patients' experiences of these multiple primary care consultations. The diagnostic process is complex, and although there is evidence proving the presence of missed diagnostic opportunities, the exact mechanisms are poorly understood. Our aim is to identify critical moments in the patient's journey, such as opportunities for safety-netting or referral, which could be contributing to avoidable prolongation of diagnostic intervals.

Methods: The study comprises a secondary analysis of a large dataset of in-depth interviews with 63 patients from two diverse UK regions, conducted within 10 weeks of their diagnosis of melanoma. The original research informed the Be Clear on Cancer skin cancer community campaign. Ongoing analysis focuses on the primary care interval, is informed by a framework approach, and uses the concept of 'missed opportunity' drawn from the patient safety literature.

Results: We have focused our analysis on patients' experiences of repeated primary care consultations and in particular their accounts of safety-netting. We have considered why some of these accounts differ from recommended clinical standards of safety-netting, and we will draw on our data to discuss potential barriers to implementing good safety-netting in consultations relating to skin lesions in primary care.

Conclusions: By analysing the first-hand experiences of patients – acting as the single witness to the entire diagnostic course – our qualitative study sheds light on a process which remains inaccessible via quantitative methodological approaches. Gaining further understanding of this journey offers the opportunity to identify critical primary healthcare factors which could form the target for future improvement interventions.

How do health system factors affect cancer survival? Results from the Örenäs Research Group study.

Authors: Michael Harris and Gordon Taylor, Department for Health, University of Bath, UK, on behalf of the Örenäs study group¹.

Background: The wide variation in national cancer prognosis is linked to variations in how Primary Care Practitioners (PCPs) act when faced with patients that could have cancer. This, in turn, is likely to be affected by how their health systems are organised. The Örenäs Research Group (ÖRG) investigates the effect of these system factors.

This study analyses the association between health system factors and European PCPs' reported referral decisions in patients that could have cancer, and how both of these are correlated with national cancer survival rates.

Methods:

ÖRG members from 20 European countries identified 45 system factors that may affect PCP decision-making in patients who may have cancer. Based on a validation study, 20 of those factors proved to vary significantly across European countries.

The study uses data from an online questionnaire with closed-ended items for those factors, with Likert scales for respondents to indicate how much each factor affected their referral decisions. Further, four clinical vignettes (breast, lung, ovarian and colorectal cancer) asked for PCPs' most likely immediate investigation/referral decisions.

The questionnaire was translated and adapted into each local language, with validation by back-translation. National 1-year relative cancer survival rates were collected from the EUROCARE database.

Results: 2,086 PCPs in 20 European countries took part, with a median of 72 PCPs per country and a median response rate of 21%. The 20 system items are allocated to five main aspects of system factors. The vignettes show the readiness to refer to further investigation. Analyses are ongoing; associations between system factor scores, readiness to refer and cancer prognosis will be presented at the conference.

Conclusions: The results have implications for healthcare organisation across Europe, and identify which system factors could be addressed to allow optimisation of the primary care management of patients who may have cancer.

¹ Örenäs study group members: Bulgaria: Gergana Foreva, Medical University of Plovdiv; Croatia: Svjatana Gašparović Babić, University of Rijeka; Denmark: Camilla Andersen, Aalborg University; Berit Skjødeberg Toftegaard & Peter Vedsted, Danish Research Centre for Cancer Diagnosis in Primary Care [CaP], Aarhus; Finland: Tuomas Koskela, University of Tampere; France: Isabelle Auger-Aubin, Université Paris Diderot; Germany: Antonius Schneider, Technische Universität München; Birgitta Weltermann, University of Duisburg-Essen; Greece: Emmanouil Smyrnakis, Aristotle University of Thessaloniki; Israel: Jopseph Azuri & Robert Hoffman, Tel Aviv University; Italy: Nicola Buono, Caserta; Netherlands: Geert-Jan Dinant, Maastricht University; Norway: Mette Brekke, Oslo University; Poland: Krzysztof Buczkowski, Nicolaus Copernicus University; Jolanta Sawicka-Powierza, Medical University of Białystok; Portugal: Ana Luisa Neves, University of Porto; Romania: Emiliana Costiug, Cluj-Napoca; Slovenia: Davorina Petek & Marija Petek Ster, University of Ljubljana; Spain: Magdalena Esteva, Atenció Primària Mallorca, Mallorca; Eva Jacob, Galicia; Mercè Marzo-Castillejo, Unitat de Suport a la Recerca – IDIAP Jordi Gol, Barcelona; Sweden: Hans Thulesius, Lund University; Switzerland: Peter Frey & Sven Streit, Bern University; United Kingdom: Peter Murchie, University of Aberdeen; Gordon Taylor & Michael Harris, University of Bath.

Examining the Impact of Diabetic Status on Multiple Psychosocial Outcomes in a Nationally Representative Sample of U.S. Cancer Survivors

Authors: Denalee O'Malley M.S.W., Patricia Findley Dr.PH. M.S.W, Shawna Hudson Ph.D.

Background/Purpose: Cancer and diabetic status are related to psychosocial outcomes when considered separately. This study examines the impact of diabetic status on multiple psychosocial outcomes among cancer survivors.

Methods: A cross-sectional study using Medical Expenditures Panel Survey Household Component Data, including the Experiences with Cancer Survivorship Supplement from 2011. Psychosocial outcomes included the: (1) Kessler Distress Index; (2) Patient Health Questionnaire-2 (PHS-2); (3) SF-12 mental health composite; and (4) two, single-item measures to assess chance of (CDR) and fears about disease recurrence (FDR). Sociodemographic and health factors were included in multi-variate regression models (n=714).

Results: Diabetic status was not significantly associated with any of the psychosocial outcomes. Older age (e.g., 65-74 years old; 74 years and older, respectively) was a protective factor for non-specific distress (NSD) ($B=-2.18$, $p<0.01$; $B=-3.27$, $p<0.001$), mental health functioning ($B=6.52$, $p<0.001$; $B=8.67$, $p<0.001$), depression ($B=-0.58$, $p<0.05$; $B=-0.98$, $p<0.001$); and CDR ($B=-0.52$, $p<0.01$; $B=-0.65$, $p<0.01$) and FDR (NS; $B=-0.52$, $p<0.05$) compared to younger survivors. Physical functioning was associated with lower NSD ($B=-0.14$, $p<0.001$) and depression ($B=-0.05$, $p<0.001$), and increased mental health functioning ($B=0.155$, $p<0.001$). Being ten years from treatment was associated with lower CDR ($B=-0.28$, $p<0.05$) and FDR ($B=-0.26$, $p<0.05$) compared to more recently treated survivors. Being African American ($B=-0.48$, $p<p.001$) and Hispanic ($B=-0.38$, $p<0.05$) was associated with lower CDR than Caucasian/Whites. Middle income was associated with lower NSD ($B=-0.90$, $p<0.05$) and depression scores ($B=-0.30$, $p<0.05$), whereas, high income was only associated with lower NSD ($B=-0.94$, $p<0.05$) compared low income. Making a financial sacrifice due to cancer was associated with increased NSD ($B=1.51$, $p<0.01$) and depression ($B=0.46$, $p<0.19$), more frequent FDR ($B=0.63$, $p<0.001$), decreased mental health functioning ($B=-3.13$, $p<0.05$).

Conclusions: Diabetic status has been shown to be associated with poorer physical health outcomes among cancer survivors; however, being diabetic alone is not predicative of poorer psychosocial outcomes.

Life and the body after cancer: an anthropological study of socially disadvantaged cancer survivors' experiences of their bodies and interactions with the health care system.

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Background: The number of cancer survivors is rising in most of the western world, one consequence being that routine follow up at the hospital is increasingly being restricted to those with complicated or advanced cancer. This means that many cancer survivors are expected to self-monitor their bodies and be attentive towards potential signs of recurrence. However, studies show significant variation in how people with different socioeconomic positions manage their bodies and seek care, which raises questions as to how cancer survivors living in challenging and disadvantaged social situations might seek help. Thus, the aim of this study is to explore how socially disadvantaged cancer survivors manage their bodies and how they engage with the health care system.

Methods: We carried out a longitudinal field study among socially disadvantaged cancer survivors in Denmark, with low levels of income and education. We followed ten people during a period of six months, where they were interviewed repeatedly on experiences of their bodies and interactions with the health care system. Currently five additional persons are being interviewed in order to supplement our findings.

Results: Analysis is in progress. Preliminary results indicate the need to pay attention to the temporal orientation of how socially disadvantaged cancer survivors experience their bodies and live their lives. The immediate bodily concerns resulting from for example follow on effects from treatment and mounting challenges of comorbidity, dominate attention to the body and care seeking. The dominance of these immediate concerns somehow contrast attempts to diagnose cancer recurrence early by means of timely care seeking and attention to potential cancer alarm symptoms.

Conclusions: The orientation towards immediate bodily concerns experienced by socially disadvantaged cancer survivors should be taken into account when organizing cancer follow up, care and support so that initiatives fit with the needs of all social groups.

Correspondence about patients with cancer between primary and secondary care: a qualitative analysis

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Introduction Cancer care is complex and involves many different healthcare providers. Both general practitioners (GPs) and oncology specialists experience difficulties in the communication between primary and secondary care. The aim of this qualitative study was to explore what information is or is not shared in referral letters and specialists' letters during diagnosis and initial treatment of patients with lung, breast or colorectal cancer.

Methods We performed a qualitative content analysis of medical files from patients diagnosed with lung, breast and colorectal cancer in hospitals in the north of the Netherlands in 2014 or 2015. Relevant text fragments were identified, coded and analyzed thematically.

Results We identified 70 items in the correspondence of 50 patient files containing 419 documents. Nine themes occurred in almost all referral letters. A remarkable finding in referral letters was that information with high relevance was presented mixed with less relevant information in the past medical history. To a lesser extent, the same held for the medication list and history. In specialists' letters, on the other hand, ten themes occurred in almost all letters. A remarkable finding was that, although information about actual treatment was always presented, information about the intent of the treatment (curative or palliative) was rare. The same held for a discussion of treatment alternatives.

The significance of GPs in cancer care from the oncologists' perspective

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Background: GPs take on numerous tasks in cancer care. Cooperation with other physicians is often perceived as problematic by GPs, for example with regard to a lack of information during and after active treatment. This was also shown by a survey among 4,500 GPs in Germany that we conducted in 2015. Less is known about oncologists' perspective on GPs' role in cancer care. This is why we investigated the question "What is the GPs' significance in cancer care from the oncologists' perspective?".

Methods: We recruited participants in spring 2016. We conducted 15 qualitative telephone interviews using an interview guideline that was developed on the basis of the mentioned survey among GPs. Interviews were transcribed, rendered anonymous, and analyzed using thematic analysis.

Results: Twenty percent of the interviewees were female, with age ranging from 35 to 62. At this conference two themes will be presented: The GP as an information resource for oncologists and the GP as a person of trust for patients. Oncologists regarded GPs as a valuable information resource with regard to information on medical history and medication and wished to receive more information from GPs at the point of referral. The GP as a person of trust for patients was situated in a rather amicable sphere of caring and contrasted with oncologists' own role as specialists. Oncologists connected the GPs' role as persons of trust to benefits such as the GPs' ability to mediate oncologists' treatment-decisions and to risks such as challenging oncologist-patient relationships.

Conclusions: Our analysis showed that the topic of information transfer between specialists and GPs is relevant in both directions. The oncologists' perspective on GPs as persons of trust and counsellors is in line with patients' perspectives. However, the question remains how specialists' and GPs' roles get interconnected in real life situations in order to meet patients' needs adequately.

Cooperation of GPs with other physicians in cancer care

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Background: Patients diagnosed with cancer experience changes in all areas of life. In this situation of insecurity, General Practitioners (GPs) as persons of trust gain importance. Several studies have shown that patients and GPs experience information transfer and communication with other physicians as insufficient. This is why we investigated how satisfied GPs are with the cooperation with other physicians in cancer care and which factors contributed to their satisfaction.

Methods: We conducted a nationwide survey among GPs in Germany and asked them: “When you think about the care for your cancer patients – how would you rate the following statements?”. GPs were asked to evaluate on a four-point-rating scale eleven statements concerning cooperation with oncologists working in outpatient settings, physicians in small hospitals (≤ 400 beds) and physicians in big hospitals (> 400 beds). We analyzed data descriptively and by using multivariate logistic regression analysis. Satisfaction with cooperation was dichotomized (rather true/ completely true vs. not true/slightly true) and several potential predictors such as socio-demographic data and the other statements concerning cooperation were tested.

Results: The survey had a response rate of 34.1%. Concerning oncologists working in outpatient setting, 81.0% of GPs rated the statement “I am satisfied with cooperation” as completely or rather true. 65.5% agreed for physicians in small hospitals and 47.9% for physicians in big hospitals. Predictors for satisfaction with cooperation in all groups were: timely communication (OR/oncologists=12.56; OR/small hospitals=11.67; OR/big hospitals =7.16), information transfer (OR/oncologists=4.66; OR/small hospitals =2.93; OR/big hospitals =1.88), quickly receiving appointments (OR/oncologists=2.14; OR/small hospitals=2.06; OR/big hospitals=1.54) and the possibility to get advice (OR/oncologists=3.32; OR/small hospitals=2.79; OR/big hospitals=2.16).

Conclusions: The bigger the institution, the smaller was GPs’ satisfaction with cooperation. The predictors for satisfaction indicate that short communication pathways and personal contacts play an important role. The challenge of interdisciplinary and cross-sectorial cooperation has been discussed for several years. Nevertheless, so far, no practical solutions are available.

The influence of culture on cancer survival using the Hofstede dimensions

Authors: G Taylor, M Harris, Department for Health, University of Bath, UK. Email: G.J.Taylor@bath.ac.uk

Background: The Hofstede cultural dimensions investigate how culture influences values in the workplace¹. They quantify differences in national cultures in relation to six dimensions: Power Distance Index (PDI: strength of social hierarchy), Individualism versus Collectivism (IDV: the degree to which people are integrated into groups), Masculinity versus Femininity (MAS: task-orientation versus person-orientation), Uncertainty Avoidance Index (UAI: a society's tolerance of differing ideas), Long Term versus Short Term Normative Orientation (LTO: the degree to which traditions are honoured), and Indulgence versus Restraint (IND: the extent of free gratification of drives related to enjoying life).

Eurocare 5² is a database of population-based cancer registries which describes national variation in European cancer survival.

Methods: This work investigates the relationship between cancer survival data and Hofstede dimensions for 26 European countries.

Results: Two Hofstede dimensions are significantly correlated with 5-year cancer survival: PDI ($r=-0.489$, $P=0.011$) and IND ($r=0.696$, $P<0.001$). There was no significant correlation for the other dimensions (IDV: $r=0.363$, $P=0.068$; MAS: $r=-0.069$, $P=0.738$; UAI: $r=-0.200$, $P=0.327$; LTO: $r=-0.203$, $P=0.320$).

Conclusions: There is a particularly strong positive relationship between 5-year cancer survival and IND scores, suggesting that societies in which individuals exhibit a higher willingness to realise their desires with regard to enjoying life tend to have better survival rates. There is negative relationship with PDI, indicating that cultures where the less powerful members of institutions accept that power is distributed unequally have poorer cancer survival rates.

The Hofstede dimensions affect how patients and doctors relate to each other at an individual level, and also impact on the nature of national healthcare systems. This paper will investigate these dimensions, including the strength of association for individual common cancers. By knowing how aspects of culture affect health, we can gain insight into how to improve health systems whilst taking elements of cultural identity into account³.

References:

1. Cultures and organisations. Software of the mind, Geert Hofstede, gert jan Hofstede, mcgraw-hill, 2005, isbn 0-07-143959-5
2. Eurocare 5 dataset <http://www.eurocare.it/Eurocare5/tabid/64/Default.aspx> (accessed 4/1/17)
3. Cultures, Health and Illness, Cecil G Helman, Butterworth-Heinemann Ltd, 1993, isbn 0-7506-0478-6

WORKSHOPS

WORKSHOP 1

DELAY IN CANCER DIAGNOSIS – SYSTEM, PATIENT OR DISEASE RELATED?

Aims: To discuss international differences in cancer diagnostic pathways (and diagnostic delay), based on the International Cancer Benchmarking Partnership Module 4 (ICBP M4) and other recent studies

Speaker(s): Peter Vedsted, Richard Neal, David Weller, Charles Helsper

Title of talks (*including interactive questions / statements during talks, See below**)

1) Interactive presentations

These will explore international differences in the diagnostic pathway of cancer, as highlighted in the ICBP module 4, and other recent studies. The various components of diagnostic delay will be examined – along with underlying mechanisms for international differences:

- Why is diagnostic delay a problem? – *Neal*
- Patient & primary care intervals and routes to diagnosis in ICBP M4 - *Weller*
- Delay in the GP pathway; What causes referral delay? – *Helsper*
- After the referral: ICBP M4 findings on system delay– *Vedsted*

2) Panel discussion

- What are the implications of international differences in diagnostic pathways - how can we improve?
- What further research do we need?

Target audience; GPs, policy makers, researchers interested in the diagnostic pathway of cancer.

*** Audience engagement**

New findings from the International Benchmarking Partnership, and other recent studies will be discussed (both in the presentations and panel discussion) guided by interactive questions and challenging statements using an interactive webbased platform available on internet on mobile devices (website: www.socrative.com).

WORKSHOP 2

DEVELOPING CANCER RISK ASSESSMENT TOOLS FOR USE IN PRIMARY CARE

Speakers

Fiona M Walter (FW), University of Cambridge, UK

Jon D Emery (JE), University of Melbourne, Australia

Brief Background and Aims

Cancer risk assessment tools could maximize the benefits and reduce the potential harms of screening and prevention for cancer, by tailoring preventive interventions according to level of cancer risk. They require valid risk prediction models that accurately discriminate people at increased risk from those who are not, and easy-to-use tools for implementation into clinical practice. A recent review found that, although few trials have been conducted with cancer risk tools in primary care, these tools can improve patient risk perception, cancer knowledge and screening intentions, although the effect on actual screening behaviours is less clear.

Drawing on this evidence and data from on-going studies, this workshop aims to explore:

- selection of validated cancer risk models for implementation;
- application of the latest evidence on risk communication methods;
- development and evaluation of user-friendly tools for primary care

Content

- (1) Methodological issues in the development of cancer risk assessment tools for primary care. JE.
- (2) Cancer risk assessment tools for melanoma and breast cancer. FW.
- (3) Cancer risk assessment tools for colorectal cancer. JE.
- (4) Interactive session exploring methodological challenges around development, assessment and implementation of these tools, and possible development of international collaborations to progress the work across health systems, facilitated by FW & JE.

Target audience

All with interest in prevention and early detection of cancer

Audience engagement

Participants will:

- Familiarise themselves with the current evidence around use of cancer risk assessment tools in primary care;
- Understand the challenges involved in implementing validated cancer risk models, applying the latest evidence on risk communication methods, and developing and assessing user-friendly tools for primary care;
- Identify opportunities for collaboration on risk assessment tools suitable in primary care across different international health systems.

WORKSHOP 3

CANCER SAFETY NETTING: DEFINING, IDENTIFYING AND IMPLEMENTING GOOD PRACTICE

Speakers

Sam Harrison, Early Diagnosis & ICBP Manager CRUK

Maggie Kemmner, Head of Facilitation Programme, CRUK

Dr Brian Nicholson, University of Oxford

TBC International speakers

Aims

1. To present a summary of work undertaken previously to define safety netting within a cancer setting (with examples of the approach applied across all aspects of the pathway from a range of countries)
2. To provide an overview of Cancer Research UK's primary care safety netting module and feedback on its acceptability and applicability within primary care
3. To facilitate discussion around gaps in cancer safety netting resources to support primary care practitioners
4. To facilitate discussion around current pieces of research relating to cancer safety netting and identify gaps/future research priorities

Titles of talks

1. Safety Netting: Defining and characterising the approach within a primary care setting (focusing on patient communication and the interface with secondary care)
2. Cancer Research UK's Facilitator Programme: Feedback from Cancer Safety Netting Training in primary care
3. Plugging the Gaps: Overview of research currently underway

Target audience

GPs, primary care clinicians, researchers – from UK and international perspective

Audience engagement

Following the presentations, there will be

- a question and answer session, followed by
- small group work, with delegates working through some set discussion questions (facilitated by CRUK representatives) around
 - what activity/research is underway in other nations?
 - how primary care/patient communication at referral may influence attendance at subsequent referrals within primary and secondary care? (does the "C" word work?)
 - where are the gaps in the evidence base/research field around cancer safety netting? And how do we best go about addressing them (e.g. what research study designs?)
 - where are the gaps in practical support tools for primary care practitioners
- plenary feedback

WORKSHOP 4

PALLIATIVE CARE OR SUPPORTIVE CARE? DIFFERENT PERSPECTIVES ON END OF LIFE CARE

Scott Murray, University of Edinburgh, Edinburgh, Scotland

Marie Lynch, Irish Hospice Foundation, Dublin, Ireland

Palliative care (PC) is often considered in the last days or weeks of life. Specialist palliative care predominantly cares for people with end-stage cancer, where there is a relatively predictable, rapid pre-morbid decline. This trajectory makes service planning and delivery of specialist care relatively straightforward to achieve. What are the needs of cancer patients and their carers months before death? What is primary care's role in addressing these needs? Can primary care and specialist palliative care be more integrated and seamless? What are the challenges of organising primary care to meet these survivorship and palliative care needs?

Supportive care, or early palliative care, is the current direction being taken for planning and delivering care for people dying with end stage non-cancer disease. These conditions have longer periods of disability, and largely predictable complications but with uncertain timelines.

Aim: To explore the concepts of palliative care vs supportive care.

Objectives:

1. To review the needs of patients and close carers at different stages of the last months and days of life
2. To discuss how health practitioner and patients' views on "palliative care" may inhibit recognising when the end of life is approaching.
3. To present evidence-based strategies to facilitate improved recognition, planning and implementation of holistic care, and discuss facilitators and barriers to their implementation.
4. To discuss how integration of care between primary and secondary care might be achieved as life's end approaches.
5. To consider how cancer or "survivorship" care may be integrated with palliative care earlier in the illness trajectory

Target Audience:

Primary care practitioners, oncology specialist services, health policy makers, researchers

Audience engagement:

We will present information on each objective, and invite workshop attendees to consider how the information is relevant to them or how it could be applied in their setting.

WORKSHOP 5

THE ROLE OF THE GP FOLLOWING A CANCER DIAGNOSIS, AN INTERNATIONAL PERSPECTIVE

Speakers

Niek de Wit (chair), Charles Helsper / Annette Berendsen / Jan Wind (Netherlands), Mary McBride / Patti Groome (Canada) and Eila Watson and Rosalind Adam (UK).

Background: Increasing numbers of patients are being diagnosed with cancer, and surviving longer. However, although mortality rates are improving many patients experiences of care and support following diagnosis is poor and new models of care are needed. Internationally, cancer policies are now recommending a shift towards more tailored, community-based approaches to care, and with a greater emphasis on supporting patients to self-manage.

This workshop will explore the role of the GP and primary care team in improving experiences and outcomes for patients in the period following a cancer diagnosis.

Aims

- To gain an appreciation of the current role of the GP / Primary Care Team following a cancer diagnosis across a range of Ca-PRI constituent countries
- To develop an understanding of what works well and what doesn't in post-diagnosis primary care cancer care
- To learn of new innovations / future plans in this area in constituent countries
- To identify potential areas for future collaboration

Titles of talks

1. Introduction: The expanding role of the GP after a diagnosis of cancer

2. Country talks: Developments in the role of the GP after cancer diagnosis in the Ca-PRI constituent countries concerning:

- Guidance between diagnosis and start of treatment (e.g. treatment decision support, mental support)
- Guidance / support during treatment, the role of the GP and primary care support team
- Post-treatment care, the role of the GP and primary care support team in the weeks and months after treatment

Represented countries: The Netherlands, UK, Canada

3. Summary and final discussion

Target audience

- GPs and other primary care workers
- Primary care researchers
- Policy makers

Audience engagement

* Discussions with the audience on what works and what doesn't, guided by interactive questions and challenging statements using the free, internet based Socrative interactive platform (www.socrative.com)

WORKSHOP 6

WHERE SHOULD WE GO WITH RESEARCH ON THE RELATIONSHIP BETWEEN HEALTH SYSTEMS AND PRIMARY CARE PRACTITIONERS' REFERRAL BEHAVIOUR? A WORKSHOP ORGANISED BY THE ÖRENÄS RESEARCH GROUP.

Speakers & Facilitators

Michael Harris and Gordon Taylor, Department for Health, University of Bath, UK

Mercè Marzo-Castillejo, l'Institut d'Investigació en Atenció Primària IDIAP Jordi Gol, Barcelona, Spain

Peter Vedsted, CaP, Research Unit for General Practice, Aarhus University, Denmark

Aims

How a health system is organised is likely to influence on how Primary Care Practitioners (PCPs) act when faced with patients that could have cancer. The Örenäs Research Group (ÖRG) is a collaborative group of researchers from 21 European countries that investigates how primary care system factors influence European cancer survival rates. The ÖRG has recently completed a survey of PCPs in 20 European countries, looking at how these factors affect referral decisions.

This workshop will examine the evidence on PCPs' perceptions of how system factors affect their investigation and referral decision-making, discuss the implications of those findings, and prioritise future research in this field.

Target audience

Primary care researchers and clinicians with an interest in how system factors affect PCP decision-making in patients that could have cancer

Content

Format: short presentations followed by facilitated group discussions.

1. Brief introduction: workshop's purpose and format
2. Presentation: summary of existing research on the relationship between health system factors and PCP decision-making
3. Discussion: How do these factors vary across delegates' countries? How do delegates' own research and clinical experiences fit in with these findings?
4. Presentation: how health system factors are linked with cancer survival
5. Discussion: How could health care organisations use this knowledge to support the timely diagnosis of cancer in their jurisdictions? What is the potential for further comparative work in this research field, across different health systems?
6. Summary and conclusions

WORKSHOP 7

CA-PRI CANCER SURVIVORSHIP GUIDELINE GROUP: SYSTEMATIC REVIEW AND SYNCHRONIZATION OF INTERNATIONAL GUIDELINES FOR POST-TREATMENT CARE

Larissa Nekhlyudov, Harvard Medical School, USA
Catherine Alfano, American Cancer Society, USA
Dana Wollins, American Society of Clinical Oncology, USA
Annette Berendsen, Groningen Medical Center, Netherlands
Jeff Sisler, University of Manitoba, Canada
David Weller, University of Edinburgh, UK
Jon Emery, University of Melbourne, Australia

Background: There is growing international emphasis on providing comprehensive and coordinated care for cancer survivors following completion of active cancer treatment (often termed ‘survivorship’). Guidelines have been developed focusing on cancer surveillance, monitoring and management of late and long-term effects, addressing psychosocial needs, improving lifestyle habits and care coordination. Increasingly such guidelines highlight important roles that primary care providers do and will play in the care of cancer survivors. Since 2010, the International Guideline Harmonization Group (IGHG) for Late Effects of Childhood Cancer has been charged with “establish(ing) a common vision and integrated strategy for the surveillance of late effects in childhood and young adult cancer survivors.” A similar effort is needed to achieve high quality, comprehensive, coordinated and standardized (when possible) care for survivors of adult cancers worldwide. This initiative will extend Ca-PRI’s work on early diagnosis research guidelines (which led to the ‘Aarhus Statement’) to survivorship.

Methods: We will use the IGHG methodology (based on the Appraisal of Guidelines for Research and Evaluation (AGREE) Collaboration and the Standards for Developing Trustworthy Clinical Practice Guidelines of the US Institute of Medicine). Specifically, for each cancer specific guideline (for example, breast cancer), we will focus on harmonizing recommendations for cancer surveillance, monitoring and management of late and long-term effects, addressing psychosocial needs, improving lifestyle habits and care coordination.

Workshop Format: This interactive workshop will launch this international guideline initiative and: (1) present the concept for the international effort; (2) review the current state of cancer survivorship guidelines internationally; (3) review work that has been completed to date in the area of breast cancer (presented at the Ca-PRI meeting in 2016); (4) identify interested Ca-PRI members to represent their country/region in assuring capture (and if needed, translation) of existing guidelines, and (5) seek input from attendees, based on their collective experience in survivorship research.

Conclusions: With the development of these guidelines, we hope to promote international consistency and enhance the implementation of evidence-based guidelines world-wide.

Funding: This launch is supported by the American Society of Clinical Oncology and the American Cancer Society; additional support will be sought for ongoing work.

WORKSHOP 8

EARLY DETECTION AND DIAGNOSIS OF LUNG CANCER: WHAT ARE POTENTIAL AVENUES FOR FUTURE RESEARCH?

Speakers: Dr Katie Robb University of Glasgow; Professor Frank Sullivan University of Toronto; Dr Katriina Whitaker University of Surrey; Dr Julie Walabyeki, Hull York Medical School; Dr Stephen Harrow NHS Greater Glasgow and Clyde

Background: Lung cancer is the most common cause of cancer death worldwide, killing more people than breast and colorectal cancer combined. Survival has seen little improvement since the 1970s relative to other common cancers and the majority of lung cancers are detected at a late stage when prognosis is poor. Early detection and diagnosis of lung cancer is considered pivotal to improving lung cancer survival and primary care has much to contribute.

Aims: The aim of the workshop is to bring together multidisciplinary perspectives on early detection and diagnosis of lung cancer to consider the current landscape and avenues for future research within primary care.

Titles of Talks:

- The potential role of biomarkers in the earlier diagnosis of lung cancer: the Early Cancer Detection Test Lung Cancer Scotland(ECLS) as an exemplar
- Symptom appraisal of potential lung cancer symptoms – the challenge of comorbidities
- Lung cancer symptom awareness, help-seeking and smoking status
- Advances in lung cancer treatment - implications for primary care

Target audience: Researchers in primary cancer care with an interest in lung cancer and multidisciplinary perspectives.

Audience engagement: This will be an interactive session. The audience will be invited to discuss their own relevant research, ask provocative questions, and reflect on the potential avenues for future primary care-led research to improve lung cancer survival.