

This paper reported trends in mortality, incidence and prevalence of coronary heart disease (CHD), stroke, heart attack, angina and heart failure over the past 50 years.

**Methods** Mortality data were provided by the UK national statistics agencies. For morbidity data we reviewed the peer-reviewed and grey literature for comparable estimates from different time points over the last 50 years.

**Results** Around half of the UK population died from CVD in the 1960s; by 2009 this had dropped to a third. CHD mortality rates have remained 30%–40% higher in Scotland than in England since 1961. Incidence rates for heart attack have decreased since the 1960s, while survival has improved; prevalence in those over 75 has increased by around 40% since the mid-1990s. Over the past 20 years heart failure incidence decreased by over a third in Scotland. Between 1970 and 1991, prevalence of angina nearly tripled for men over 75 and has continued to rise.

**Conclusion** Mortality from CVD has declined over the past 50 years, but striking geographic inequalities have remained. Incidence of two major CVD conditions have declined, but continuing increases in prevalence and an ageing population mean that the burden of CVD is still a major issue for the UK.

#### P1-94 THE EPIDEMIOLOGY AND COSTS OF ANKLE INJURIES: A REVIEW OF THE LITERATURE

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**Introduction** Ankle sprains are one of the most common injuries presenting to emergency departments, representing 3% to 5% of all visits in the UK, and 10% of all injury-related visits in the USA. Ankle injuries have significant physical and economic consequences for the affected individuals.

**Objectives** To describe the epidemiology of ankle sprains and fractures among the general population; and to determine the direct and indirect costs related to the diagnosis and treatment of ankle injuries.

**Methods** A comprehensive literature review of Ovid MEDLINE, EMBASE, Cochrane DSR, ACP Journal Club, AMED, Ovid Healthstar, and CINAHL was conducted for English-language studies on ankle sprains and fractures published from 1980 to 2010.

**Results** The search identified 2394 studies of which 47 were selected for analysis. A majority of the studies were published in the last decade. The incidence of ankle sprains was 2 to 7 per 1000 person-years, while the incidence of ankle fractures was 1 per 1000 person-years. The costs of emergency ankle sprain management ranged from 126.13 to 2356.21 per patient (2009 CAD), depending on sprain severity. The management costs were higher for ankle fractures: 1692.82 to 15 802.26 (2009 CAD) per patient. The economic evaluations were conducted from the societal or healthcare system perspective.

**Conclusions** Information on the epidemiology of ankle sprains and fractures may help plan for health policy and the provision of health services. Moreover, the cost data may inform future studies undertaking economic evaluations of the diagnosis and treatment of ankle injuries.

#### P1-95 IS CURRENT POLICY FOR ANAEMIA PREVENTION IN BEDOUIN TODDLERS IN THE NEGEV APPROPRIATE?

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**Introduction** Iron deficiency anaemia still affects a quarter of the world's population increasing risk of infectious disease morbidity, impaired growth and mental development. According to current policy children undergo screening for iron deficiency anaemia at age 9–12M.

**Methods Prospective Study** The study population included Moslem Bedouin 2.5–3-Y-old children that followed from 6M in Well Baby Clinic. All parents of participants were interviewed during enrolment and monthly meetings. The blood samples were taken from children at enrolment and during last follow-up visit. Anaemia (Hb<11 g/dl) and Iron Deficiency Index (at least 2 of 6 abnormal indicators, including Haemoglobin, Haematocrit, Mean Corpuscular Volume, Red blood cell distribution Width, serum ferritin, and transferrin saturation) were defined.

**Results** The study population included 180 infants. The mother's young age was found as a risk factor for mild anaemia. Male sex was associated with a higher rate of moderate anaemia compared with female sex (76.2% and 52.8%, respectively,  $p=0.043$ ). Children with anaemia had lower average of dietary iron consumption than children with normal levels of Hb ( $p=0.009$ ). Iron deficiency anaemia at age 6M was a significant and independent risk factor for toddlers' anaemia (OR=3.47,  $p<0.001$ ) controlling for the mother's age, child gender and consumption of dietary iron.

**Conclusion** The most significant factor for anaemia among this population is iron deficiency anaemia at the age of 6M. Prevention, early detection (at age 6M) and appropriate treatment of anaemia in the first year of life are critical to prevent anaemia and its consequences later life.

#### P1-96 PRIMARY BONE CANCER IN 0–49 YEAR OLDS IN GREAT BRITAIN, 1980–2005 AND FLUORIDE IN DRINKING WATER: A CASE OF INEQUALITIES?

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**Introduction** Primary bone cancers (PBC) occur most often in young people. Osteosarcoma and Ewing sarcoma family of bone tumours (ESFT) are most commonly diagnosed in children but aetiology remains unclear. Fluoride has been proposed as a potential causal agent for PBC. The study investigated whether incidence of PBC was linked with fluoride in drinking water.

**Method** Incidence data on cases aged <50 years diagnosed during 1980–2005 were obtained from all ten regional cancer registries in Great Britain (GB). These data were combined with small-area population census, digital boundary and fluoride monitoring data. Negative binomial regression was used to examine the relationship between incidence rates and census small-area fluoride levels. These models were fitted to small-area census data aggregated into three age bands and by gender with the logarithm of the 'at risk' population as an offset.

**Results** There were 2566 osteosarcoma cases aged 0–49 years: 817 aged 0–14; 1315 aged 15–29 and 434 aged 30–49 years. For ESFT there were 1650 cases aged 0–49 years: 659 aged 0–14; 800 aged 15–29 and 191 aged 30–49 years. After adjustment for age and gender, no statistically significant association was found between osteosarcoma or ESFT and fluoride: RR for one part per million increase in fluoride level =0.993; 95% CI 0.843 to 1.171 and 0.860; 95% CI 0.696 to 1.064 respectively.

**Conclusions** This is the first study to analyse putative associations between PBC and fluoride in drinking water across GB at small-area level. No statistically significant relationships were found.

**P1-97** **DEMOGRAPHIC ANALYSIS OF OSTEOSARCOMA AND EWING SARCOMA FAMILY OF TUMOURS IN 0–49 YEAR OLDS IN GREAT BRITAIN, 1980–2005: A SMALL-AREA APPROACH**

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**Introduction** Primary bone cancers (PBC) occur most often in young people. Osteosarcoma and Ewing sarcoma family of bone tumours (ESFT) are the most common sub-groups but aetiology remains unclear. Some childhood cancer rates are known to vary with socio-economic status. Therefore, this study examined geographical patterning in osteosarcoma and ESFT incidence, diagnosed in 0–49 year olds in Great Britain (GB) during 1980–2005. The analysis focussed on putative associations with area characteristics including deprivation and population density (PD).

**Methods** Data were obtained from all regional cancer registries in GB. Negative binomial regression was used to examine the relationship between incidence rates with PD and Townsend deprivation score (TDS). These models were fitted to small-area census data aggregated by three age bands (0–14, 15–29 and 30–49 years) and gender with the logarithm of the 'at-risk' population as an offset.

**Results** There were 2566 osteosarcoma cases and 1650 ESFT cases. After adjustment for age and gender osteosarcoma incidence demonstrated a negative association with TDS (RR for one unit increase in deprivation level = 0.975; 95% CI 0.963 to 0.986). ESFT incidence showed a negative association with PD (RR for increase of one person/hectare = 0.981; 95% CI 0.972 to 0.989) and non-car ownership (RR for 1% increase of non-car ownership = 0.996; 95% CI 0.993 to 1.000).

**Conclusion** More deprived areas have lower osteosarcoma incidence. Higher ESFT incidence is associated with lower PD and higher car ownership levels. Both factors are rural area characteristics. Further study of environmental exposures or land use is recommended.

**P1-98** **INEQUALITIES IN MEDICINES EXPENDITURE AMONG ADULTS: A POPULATION-BASED STUDY IN SOUTH OF BRAZIL**

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**Introduction** Brazilian families' expenditure with health achieves high proportion of their incomes, especially to purchase medicines. The aim of this study was to investigate the associated factors with the proportion of income spent to purchase medicines in adults from 20 to 59 years of age.

**Methods** A cross sectional population-based study (n=1720) was carried out in Florianópolis, Brazil, 2009. Commitment of 10% or more of family income (C10) with medicines expenditure (yes/no) was considered the outcome. Gender, age, skin colour, schooling, per capita family income, self-reported chronic diseases, hospitalisation in the last year, family health program coverage, and self-rated health were the exploratory variables. Crude and adjusted prevalence ratios (PR) were obtained through Poisson regression analyses.

**Results** The prevalence of the C10 was 12.2% (95% CI 10.4 to 13.9) and it was higher among women (PR 1.59, 95% CI 1.16 to 2.18),

people over 49 years of age (PR 1.95, 95% CI 1.33 to 2.86), and those with a per capita family income lower than US\$242,90 (PR 2.38, 95% CI 1.42 to 4.02). Participants reporting chronic diseases (PR 2.17, 95% CI 1.58 to 2.97), and those who were hospitalised in the last year (PR 1.47, 95% CI 1.02 to 2.12) was more likely to present C10.

**Conclusions** The results suggest remarkable social inequalities in medical expenses in a Brazilian adult population. Social and economic policies to reduce such vulnerability are necessary.

**P1-99** **A POLICY EFFECTIVENESS-FEASIBILITY LOOP FOR EVIDENCE-BASED PUBLIC HEALTH POLICY**

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**Introduction** While public health policy could profoundly effect health status<sup>1</sup>, research informing policy-making and implementation is underutilised.<sup>1–5</sup> A range of evidence types are required to support policy-making, and involving policy makers in generating and evaluating evidence is important. This work aims to develop, implement and evaluate an interactive approach to informing policy for preventing and managing cardiovascular disease (CVD) and diabetes (focusing on four territories with a high disease burden: Palestine, Turkey, Tunisia and Syria).

**Methods and Results** Three main types of research activity are proposed:

1. Epidemiological modelling: three models estimate major risk factor trends including relative contribution to overall reduction in CHD deaths.
2. Situation analysis: three main elements are investigated using mixed methods. Analysis will suggest acceptable and feasible interventions and opportunities and barriers for implementation.
3. Economic modelling: potentially effective and feasible options will be evaluated, including country-specific cost and cost-effectiveness ratios.

A 'policy effectiveness-feasibility loop' model (based on an 'equity effectiveness loop'<sup>7</sup>) is proposed to link evidence types and facilitate its systematic, operational use in policy-formulation. Illustrative findings from using this model in four focus countries will be described. Policy makers are involved throughout, informing the situation analysis and choosing and appraising options for implementation.

**Conclusion** Other non-linear models exist for how research influences policy-making<sup>6</sup>. This work proposes a pragmatic framework to: combine all evidence types (particularly cost effectiveness); involve policy makers; and use evidence to develop policy options (initially for CVD and diabetes prevention). Next steps for evaluation are suggested.

**REFERENCES: AVAILABLE ON REQUEST.**

**P1-100** **I2SARE (INDICATEURS DE SANTÉ DANS LES REGIONS D'EUROPE) EUROPEAN REGIONAL HEALTH PROFILES**

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**Introduction** The I2SARE project has developed health profiles for 263 regions in 26 European member states. Information at regional