

active monitoring (regular assessment of disease status) drank more fruit/vegetable juice than men who had received surgery ( $p=0.004$ ).

**Conclusion** Diagnosis of localised PC prompted around one third of men to adopt healthier diets and eat more 'prostate-healthy' foods. Dietary choices were influenced by treatment received, with more interest in dietary factors for survivorship in men undergoing active monitoring than those undergoing radical treatment. PC survivors are motivated to improve their diet and are able to access and act on healthy eating advice. Diagnosis of PC may serve as a "teachable moment", thereby providing opportunities for clinicians to provide targeted advice that could be beneficial to general (and prostate-specific) health and to support survivorship.

**PS06 FINDING THE MISSING UNITS: IDENTIFYING UNDER-REPORTING OF ALCOHOL CONSUMPTION IN ENGLAND**

doi:10.1136/jech-2012-201753.106

S Boniface. *Epidemiology and Public Health, UCL, London, UK*

**Background** Alcohol sales coverage (reported consumption as a percentage of total sales) is typically 40–60%. This study explores how accidental under-estimation of alcohol in drinks poured at home might contribute to low sales coverage.

**Methods** 283 drinking adults (16+) completed a face-to-face survey comprising a questionnaire and pouring task on 12 occasions at six sites in and near London in summer 2011. Actual and perceived number of units poured in a 'usual glass' of wines and spirits is explored by demographic and social factors.

**Results** There were 283 participants (54% women) who completed the questionnaire and pouring task. The 283 participants poured a total of 465 glasses of wine and spirits. 52% wine estimates and 42% spirit estimates were within 0.5 units of their actual value. More participants over-estimated the amount of alcohol they had poured than under-estimated. Multinomial logistic regression found significant risk factors for under-estimating wine were increasing volume of wine poured (RRR 1.02 95% CI 1.01–1.02,  $P<0.0001$ ), belonging to a non-white ethnicity (RRR 3.88, 1.65–9.16,  $P=0.002$ ), and being unemployed or retired (RRR 4.30, 1.08–17.07,  $P=0.038$ ). Only the volume of spirits poured was a significant predictor of under-estimating spirits (RRR 1.04, 1.01–1.06,  $P=0.003$ ). For both wines and spirits, not having a degree was significantly associated with an increased risk of over-estimating the amount of alcohol poured.

**Conclusion** As participants were more likely to over-estimate than under-estimate, this survey is not able to explain low sales coverage as a product of accidental under-estimation of the amount of alcohol poured drinks drunk at home. A future qualitative study will explore how recall accuracy may contribute to low sales coverage.

**PS07 TRENDS IN BLOOD PRESSURE IN ENGLAND: GOOD TREATMENT OR GOOD LUCK?**

doi:10.1136/jech-2012-201753.106

SJ DeWilde, IM Carey, SM Shah, T Harris, AR Rudnicka, PH Whincup, DG Cook. *PHSE, St George's, University of London, London, UK*

**Background** For 30 years, adult blood pressure (BP) has declined in many developed countries. This is likely to have contributed to declining cardiovascular disease mortality. However, the reasons for this, particularly the impact of increased antihypertensive treatment, have been little studied. Diagnostic criteria have changed, meaning that more patients are treated at lower levels of BP than previously; and treatment intensity is greater. Accounting for the effects of treatment on BP trends is complex and open to misinterpretation.

**Methods** Using the Health Survey for England we examined BP measures and treatment in white subjects aged 18+ years over two

periods, 1994–2002 and 2003–2009. To examine trends independent of anti-hypertensive treatment, untreated BP was estimated from the recorded BP on treatment. To do this, a model was derived using published data on the effect of anti-hypertensives used singly and in combination at differing pre-treatment BP levels. BP untreated with statins was similarly estimated.

**Results** Among an average 9,147 subjects per year, mean systolic BP (SBP) in men declined by 0.55 mmHg annually (95% CI 0.46 to 0.64) between 1995–2002; 0.34 mmHg annually (95% CI 0.21 to 0.46) between 2003–2009. Similar trends occurred in women. The decline was greater in older groups, but present in young, largely untreated groups, although the trend was greatly reduced in young men by 2009. Trends in estimated SBP adjusting for the influence of treatment, where present, exhibited only slightly lower declines; for men: 0.47 mmHg annually (95% CI 0.37 to 0.57) between 1995–2002; 0.27 mmHg annually (95% CI 0.13 to 0.41) between 2003–2009. Statin therapy had little additional effect. Diastolic blood pressure showed similar but weaker trends.

**Conclusion** For 15 years, BP declined in English adults. The overall decline in SBP of nearly 5 mmHg over the study period is likely to be of clinical significance in reducing CVD events. For an individual aged 40–49 a 5 mmHg reduction in SBP, as seen here, would be expected to reduce the risk of stroke by 23% and of IHD by 16%. It is therefore of concern that, in recent years, the decline has essentially ceased in the youngest age groups, particularly in younger men. The effect of treatment was modest; less than 25% of the male SBP decline is attributable to it. Other explanations for this fall, occurring whilst obesity has increased, need further exploration, but reduced salt intake is a likely candidate.

**PS08 IS THERE A PROTECTIVE EFFECT OF HIGH MINERAL CONTENT IN DRINKING WATER ON CORONARY HEART DISEASE MORTALITY? A CROSS-SECTIONAL ECOLOGICAL STUDY OF A LARGE POPULATION IN CENTRAL ENGLAND**

doi:10.1136/jech-2012-201753.107

GM Rudge, MA Mohammed. *School of Health and Population Sciences, University of Birmingham, Birmingham, UK*

**Background** It has been hypothesised that dissolved minerals in water, particularly calcium carbonate and magnesium carbonate, are protective against heart disease. Animal studies suggest biologically plausible mechanisms for this and statistically significant effects have been presented from several large ecological studies.

**Setting** The West Midlands Government Office Region in central England, has a large and diverse population which has great variation in water hardness over a relatively small area. Our units of analysis were West Midlands neighbourhoods (lower level super output areas) falling in areas supplied by two water companies. We obtained exposure estimates from water industry measurements taken in 2007.

**Methods** Using geographical information system software, digitised supply water supply maps were mapped to our neighbourhood geography. Having established the distribution of water hardness through neighbourhoods, we mapped tertiles of hardness and identified neighbourhoods inside them. To these we linked emergency myocardial infarction (MI) admissions for 45–74 year-old residents for a three year period, adjusting for the age distribution of the neighbourhoods, ethnic mix and socio-economic deprivation. We used a negative binomial model to determine the degree of association between water hardness and MI admission counts, adjusting for the other variables.

**Results** We were able to accurately determine the mineral content of water supplied to 2,925 neighbourhoods with a total population of over 4.5 million. Contrary to other studies, we found just a small but non-significant negative correlation between hardness and MI admissions were seen in men, with an incidence rate ratio (IRR) of 0.97, per tertile, (0.92 – 1.03,  $p=0.37$ ) and a small, non-significant positive one seen in women, IRR=1.02, (0.93 – 1.12,  $p=2$ ).