poor mental health when data can be linked to them, even if their personal details are only used to help them access care. This may be particularly relevant because individuals who have a mental health problem are more likely to experience barriers to care and hold stigmatising beliefs. If that is the case, then mental health screening programmes where personal details are required may not be effective in detecting those most in need of care. We aimed to compare mental health symptom reporting when using an anonymous versus identifiable questionnaire among UK military personnel on deployment in Iraq (early 2009).

**Methods** This was a survey among UK military personnel using two questionnaires, one anonymous (n=315) and one identifiable (n=296). Questionnaires were distributed by alternative allocation. The questionnaire included the 12-item General Health Questionnaire (measuring symptoms of common mental disorder, CMD), the Post-Traumatic Stress Disorder (PTSD) Checklist Civilian Version (measuring probable PTSD) and 11 stigma statements relating to barriers of care and perceived social stigma.

**Results** Of 612 personnel approached to take part, 99.8% completed the survey. The overall prevalence of probable PTSD was 3.3% and 20.5% for symptoms of CMD. No significant difference in the reporting of symptoms of CMD was found (18.1% identifiable vs. 22.9% anonymous, P=0.150). Personnel were more likely to report borderline and probable PTSD when completing questionnaires anonymously (borderline PTSD: 2.4% identifiable vs. 5.8% anonymous; probable PTSD: 1.7% identifiable vs. 4.8% anonymous, P=0.022). Of the 11 barriers to care and perceived social stigma statements considered, those completing the anonymous questionnaire were more likely to endorse: "leaders discourage the use of mental health services" (9.3% vs. 4.6%, P=0.029), "it would be too embarrassing" (41.6% vs. 32.5%, P=0.023) and "I would be seen as weak" (46.6% vs. 34.2%, P=0.003).

**Conclusion** We found a significant effect on the reporting of PTSD and certain stigmatising beliefs (but not CMD) when using an anonymous compared to identifiable questionnaire. Our findings have implications for the current post-deployment screening policy used in the US militaryin which identifiable data are collected. These results suggest that researchers need to weigh up the balance between full anonymisation against the use of non-anonymised but confidential survey methods, which permit future follow up.

### OP92 THE IMPACT OF MILITARY DEPLOYMENT, COMBAT EXPERIENCES AND POST-DEPLOYMENT MENTAL HEALTH PROBLEMS ON VIOLENT BEHAVIOUR AMONG UK MILITARY PERSONNEL

doi:10.1136/jech-2012-201753.092

[1,2]D MacManus, [1]K Dean, [2]M Jones, [2]R Rona, [2]L Hull, [2]N Greenberg, [1]T Fahy, [2]S Wessely, [2]N Fear. *[1]Forensic and Neurodevelopmental Sciences, King's College London, London, UK; [2]King's Centre for Military Health Research, King's College London, London, UK*

**Background** There is considerable media, political and public interest on both sides of the Atlantic in an alleged rise in violence among military personnel returned from conflicts in Iraq and Afghanistan. This study explores violence among a large sample of UK military personnel, a proportion of whom had been deployed to Iraq/Afghanistan. The aims were to estimate the prevalence of self-reported violence, examine the impact of deployment and combat experiences on subsequent violence and the association with post-deployment mental health problems and alcohol misuse.

**Methods** This study formed part of a questionnaire-based cohort study established to explore the impact of deployment on mental health among UK military personnel. The sample was randomly selected from all military personnel serving in the UK Armed Forces between 2003 and 2007. A total of 9986 participants from all Services were included, some had been deployed and some had been trained but not deployed. Special Forces were excluded. Data, collected by questionnaire, included information on deployment experiences, socio-demographic and military characteristics, pre-enlistment antisocial behaviour, and post-deployment health outcomes. The main violence outcomes were self –report measures of interpersonal violence.

**Results** 6.2% of the sample reported interpersonal violence in the last month. Deployment showed a stronger association with subsequent violence among reservists (OR=2.98 (1.50–5.93),P=0.002) than among regulars (OR=1.26 (0.96–1.67),P=0.098) when compared to their non-deployed counterparts. Performing a combat role whilst deployed was associated with a significantly increased likelihood of violence among regulars (OR=1.90 (1.38–2.75), P<0.001) and the risk of violence increased with the number of traumatic events experienced (P<0.001)). Violence on homecoming was also associated with mental health problems such as PTSD (OR=4.8 (3.2–7.2) P<0.001) and alcohol misuse (OR=3.1 (2.5–3.9) P<0.001).

**Conclusion** Military deployment, in particular combat exposure, increased the risk of subsequent violence among military personnel and the risk of violence increased with increasing number of traumatic events experienced on deployment. Valuable information on risk factors for violence among military personnel is provided, especially regarding increased risk among deployed reservists and among personnel who report post-deployment mental health problems and alcohol misuse.

## HSR: Evaluation of Health Care Interventions

### OP93 ORLISTAT AND THE RISK OF ACUTE LIVER INJURY: A SELF-CONTROLLED CASE-SERIES STUDY IN UNITED KINGDOM GENERAL PRACTICE RESEARCH DATABASE

doi:10.1136/jech-2012-201753.093

J Langham, L Smeeth, R Brauer, K Bhaskaran, I Douglas. *Non Communicable Disease Epidemiology, LSHTM, London, UK*

**Background** In 2009, based on spontaneous reports of serious liver injury the US Food and Drug Administration announced Orlistat may be linked to an increased risk of hepatic events. However, no causal association has been established. The aim of this study was to investigate the association between Orlistat and the incidence of acute liver injury.

**Methods** This was a self-controlled case-series design using the United Kingdom General Practice Research Database (GPRD) and linked Hospital Episode statistics (HES). People were eligible if they had an incident occurrence of idiopathic acute liver injury with a diagnoses recorded (in GPRD or HES) and were exposed to Orlistat at any time in the observation period. If there was evidence of a known cause for liver disease, such as alcoholism, patients were excluded. Observation time for each patient was divided into strata determined by Orlistat exposure status (30 day strata) and current age. Within-person rate ratios (with 95% confidence intervals) for liver injury were estimated using conditional Poisson regression (Stata 12), comparing exposed with unexposed periods.

**Results** In the GPRD, between 1999 and 2010, 94,695 people had received at least one prescription for Orlistat, of whom 1,741 had an eligible diagnosis recorded. Of these, 408 people fulfilled eligibility criteria for a definite event (including abnormal liver function test results and a referral). We found a higher incidence of events in the first 30 days of exposure, (compared to unexposed) RR 2.27 (95% CI 1.12 to 4.59) and in the 90 day pre-exposure period RR 1.96 (95% CI 1.35 to 2.85). There was no difference in the incidence of events between 90 days prior and 0–90 days post prescribing, RR 0.78 (95% CI 0.42 to 1.42).

**Conclusion** This is the first study we are aware of to explore the risk of incident liver injury associated with Orlistat. We found an

increased risk of liver events in the 90 days immediately prior to and post first Orlistat prescription, but no difference in risk between the pre and initial exposure periods. This suggests that Orlistat may be initiated during a period of time when adverse liver events are more likely due to poor underlying health, but does not suggest the risk increases with initiation of Orlistat.

## OP94 EVIDENCE FOR THE EFFECTIVENESS OFOPIATE SUBSTITUTION TREATMENT IN RELATION TO HIV TRANSMISSION IN PEOPLE WHO INJECT DRUGS: A SYSTEMATIC REVIEW AND META-ANALYSIS

doi:10.1136/jech-2012-201753.094

[1]GJ MacArthur, [2]S Minozzi, [1,3]N Martin, [1,3]P Vickerman, [4]J Bruneau, [2]M Davoli, [1]M Hickman. *[1]School of Social and Community Medicine, University of Bristol, Bristol, UK; [2]Department of Epidemiology, Lazio Regional Health Service, Rome, Italy; [3]Centre for Research on Drugs and Health Behaviour, LSHTM, London, UK; [4]Research Center, Centre Hospitalier de l'Université de Montréal, Montreal, Canada*

**Background** Injecting drug use is a major risk factor for the acquisition and transmission of HIV among people who inject drugs (PWID), and between PWID and the wider community. Worldwide there are an estimated 15.9 million PWID of whom 3 million may be HIV-positive. Methadone and buprenorphine (opiate substitution treatments, OST) reduce heroin use, injecting risk behaviour, and drug related mortality and are included in the World Health Organization list of essential medicines. A small number of individual cohort studies and a Cochrane narrative systematic review suggest that OST may reduce HIV incidence, but no pooled quantitative synthesis has been carried out. We have undertaken a systematic review and meta-analysis of published and unpublished studies to quantify the effect of OST on HIV transmission.
**Methods** Medline, EMBASE and PsychINFO were searched to October 2011 to identify studies that examined the effectiveness of OST in relation to HIV transmission. Authors of prospective studies that assessed HIV incidence in PWID were contacted to obtain unpublished data.
**Results** Fifteen studies conducted in seven countries were relevant for inclusion. Data from ten of the studies were pooled, two of which were unpublished. Analysis included over 22,000 person-years of follow-up and 738 incident HIV infections. Preliminary random effects meta-analysis demonstrates that OST reduces risk of HIV transmission among PWID by 49% (RR 0.51, 95% CI 0.37–0.71; p<0.001) although there was significant heterogeneity between studies ($I^2$ 59.5%, $\chi^2$ 22.2, p=0.008). Study-level covariates including publication year, gender, median age, and ethnicity of participants did not significantly influence the impact of OST in meta-regression analyses. However, sub-group analysis demonstrated that whilst continuous OST significantly reduced risk of HIV infection, the effectiveness of interrupted or detoxification treatment was less clear (RR 1.26, 95% CI 0.77–2.07; p=0.360).
**Conclusion** These preliminary data provide further evidence that OST can reduce the risk of HIV infection among PWID and for the first time quantify the effect. Ensuring sufficient coverage of OST as part of a package of harm reduction interventions is critical to reduce the burden of HIV among PWID and to prevent onward transmission between PWID and to the wider community.

## OP95 RISK FACTORS FOR FIRST VENOUS THROMBOEMBOLISM IN AND AROUND PREGNANCY: A POPULATION BASED COHORT STUDY FROM THE UNITED KINGDOM

doi:10.1136/jech-2012-201753.095

[1]A Abdul Sultan, [1]LJ Tata, [1]J West, [1]L Fiaschi, [1]KM Fleming, [2]C Nelson-Piercy. *[1]Division of Epidemiology and Public Health, University of Nottingham, Nottingham, UK; [2]Women's Health Academic Center, Guy's & St Thomas' Foundation Trust, St Thomas' Hospital, London, UK*

**Background** Venous thromboembolism (VTE) remains one of the leading causes of maternal mortality in high income countries. A lack of robust data on women's risk factors for antepartum and postpartum VTE limit potential prevention. There is a need for estimates of absolute risks at population level according to recognised risk factors.
**Methods** Using a large primary care database, we analysed 376,154 pregnancies ending in live births or stillbirths from women 15–44 years of age between 1995 and 2009. We assessed the impact of risk factors on the absolute and relative incidence of VTE for antepartum and postpartum periods using Poisson regression.
**Results** Postpartum, the strongest risk factor was stillbirth (Absolute VTE Rate=2,444/100,000 person-years) followed by varicose veins, BMI >30kg/m2, obstetric haemorrhage, preterm delivery, medical co-morbidities (either SLE, IBD, nephrotic syndrome or cancer) and caesarean section (AR=637/100,000 person-years or higher). BMI >30kg/m2 conferred a substantial increase in postpartum risk (AR=926/100,000 person-years) but only a modest increase antepartum (AR=109/100,000 person-years). Women age>35 years, current smokers, and those with acute systemic infections had small relative increases in antepartum and postpartum VTE to those without such risk factors.
**Conclusion** Antepartum VTE varies modestly by recognised risk factors, yet women with stillbirths, preterm births, obstetric haemorrhage, caesarean section delivery, co-morbidities or BMI >30kg/m2 are most likely to benefit from thromboprophylaxis postnatally. For example, we estimate that up to 17 to 159 annual VTEs could be avoided annually if all women with stillbirth, preterm birth or caesarean section in the UK received appropriate thromboprophylaxis.

## OP96 SURVEY OF USE AND APPLICATION OF TEST ACCURACY MEASURES FOR DECISION MAKING IN PRIMARY CARE

doi:10.1136/jech-2012-201753.096

[1]CF Davenport, [2]CJ Hyde. *[1]Public Health, Epidemiology and Biostatistics, University of Birmingham, Birmingham, UK; [2]Penninsula Technology Assessment Group, University of Exeter, Exeter, UK*

**Background** Increase in test use over recent decades has occurred despite disappointing results from test accuracy evaluations. Difficulties with understanding and application of test accuracy information are purported to be important contributors to this observed evidence 'gap'. Empirical research to date is based on the premise that formal probability revision is a necessary pre-requisite for informed diagnostic decison making and is characterised by self selected samples with recent experience or expertise in test evaluation. The survey aims were to describe how clinicians apply existing test accuracy metrics for diagnostic decision making.
**Methods** An incentivised, electronic survey was used. Informed application of test accuracy information was evaluated by asking respondents to indicate their management decision following presentation of nine different representations of the same test accuracy information to a common hypothetical scenario. Quantitative and qualitative synthesis was employed based on closed and open responses to management decisions.
**Results** A total of 204 General Practitioners (response rate 95%) did not appear to be self-selected on the basis of academic position, involvement in policy or experience in test evaluation. Sensitivity and specificity, the annotated 2x2 diagnostic table and predictive values were reported to be familiar metrics by the most respondents. Likelihood ratios the DOR and AUC were familiar to less than 1/3 of respondents. Application of test accuracy metrics resulted in marked variation in responses to both positive and negative test results although greater inconsistency and management uncertainty was observed following presentation of a negative test result. Formal probability revision was not a feature of the diagnostic decision making process. Test errors