Results In 2013, there were 134,546 hospitalizations with at least one diagnosis coded as S06, 8,292 additional hospitalizations coded as OR, and 6,821 hospitalizations coded as SR, representing a total of 149,659 hospitalizations. The fact of adding to the selection of S06 codes hospitalizations with OR codes or hospitalizations with OR and SR codes results in an increasing number of hospitalizations: 6.2% and 11.2% respectively.

Conclusions The analysis of hospitalizations for TBI should not be limited to S06 codes because they produce too many false negatives. The analysis of false positives and negatives associated with the addition of OR or OR + SR codes requires the use of a gold standard to conclude on the best selection and estimate hospital morbidity due to TBI.

| 682 | NOVEL USE OF ELECTRONIC HEALTH RECORDS TO ADVANCE RESEARCH AND MANAGEMENT OF PAEDIATRIC CONCUSSIONS |

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Background While our understanding of concussion as an important public health issue among children has grown, broad description of paediatric concussions is limited to high school sports or those treated in an emergency department (ED). Further, non-specialist providers report inadequate training and infrastructure to systematically diagnose and manage these patients. To address these gaps, CHOP and CDC have initiated a novel collaborative effort to examine whether electronic health records (EHRs) can expand traumatic brain injury (TBI) surveillance and research–with a focus on concussion–and to assess whether EHR-based initiatives can improve TBI management.

Methods All patients, age 0–17 years, with at least one clinical encounter with an ICD-9-CM diagnosis of concussion in the CHOP EHR system (7/2010–6/2014) were selected and their initial concussion-related encounter identified.

Results 14,054 patients were included (average age: 12.1 years). Initial analyses indicate that: 50% of patients had their first encounter within primary care and 27% within specialty care; half of all concussions among 5–11 year olds were sports/recreation-related; and introduction of a concussion clinical support tool substantially improved documentation of concussion-specific assessment in the EHR (2% before vs. 70% after implementation in July 2012).

Conclusions This collaborative program leverages the strength of a linked EHR system throughout a large healthcare network (>1 million annual visits) to provide a comprehensive system-wide assessment of paediatric concussion across the developmental age spectrum beyond the ED setting. This is the first such US assessment that included a diverse demographic and socioeconomic sample. This work highlights the potential of EHRs to guide clinical management and facilitate research that can lead to improved concussion prevention and diagnosis.

| 683 | CONCUSSION EDUCATION AND THE THEORY OF PLANNED BEHAVIOUR |

Lindsay Sullivan, Michal Molcho. *Department of Health Promotion, School of Health Sciences, NUI Galway, Galway, Ireland*

Background Sports-related concussion among youth has been identified as a public health problem. As a result, an abundance of concussion education programmes for youth athletes have been developed. Although some of these programmes have resulted in an increase in concussion knowledge, these programmes have failed to increase athletes' concussion reporting behaviours. Accordingly, research suggests a need for theory-driven concussion interventions that go beyond those that aim at increasing concussion knowledge alone. This study will apply the theory of planned behaviour (TPB) to the development and evaluation of a targeted concussion education programme for athletes aged 13 to 18 years old. The primary aim of this study is to assess the immediate and short-term impact of the programme on intention to report concussion and concussion reporting behaviours; and to explore, the process of implementation and the relationship between this process and the programme's outcomes.

Methods This study will employ a cluster randomised control trial, with data collection at baseline (T0), immediately post-intervention (T1), and three-months after programme implementation (T2). The sample will be comprised of county-level Gaelic Athletic Association (GAA) clubs throughout the Republic of Ireland and will include teams with athletes aged 13 to 18 years old. Using a range of structured questionnaires and qualitative measures, data will be captured on athletes' (i) attitudes towards concussion and concussion reporting, (ii) subjective norms, (iii) perceived behavioural control, (iv) intention to report concussion, (v) concussion reporting behaviour and (vi) programme fidelity.

Results Preliminary results from the evaluation and issues with programme implementation will be presented. Quantitative data will be analysed with SPSS Version 22. Thematic analysis will be used to analyse qualitative data.

Conclusions Findings from this evaluation will be used to assess the efficacy of the TPB in programme development and evaluation and will support the knowledge and practice of primary and secondary concussion prevention. Results from the process evaluation will assist in helping understand the context within which the programme was implemented and how these characteristics may affect the quality of implementation.

| 684 | COACH COMMUNICATION ABOUT CONCUSSION SAFETY AND THEIR PERCEIVED ABILITY TO ASSESS AND MANAGE CONCUSSION |

Lindsay Sullivan, Michal Molcho. *Department of Health Promotion, School of Health Sciences, NUI Galway, Galway, Ireland*

Background Annually, it is estimated that 3.8 million sports- and recreation-related concussions are sustained in the USA alone, with a particularly high incidence among adolescents. At youth sporting events, however, medical professionals are rarely

present. Accordingly, coaches play a crucial role in recognising the signs and symptoms of concussion, and ensuring that players with a suspected concussion are managed correctly. Coaches have also been found to play a central role in reinforcing or undermining a sport culture in which athletes report injuries, including concussion. The aim of this study was to assess perceived ability to assess and manage concussion; and to explore, coaches' communication practices about concussion safety with their players.

Methods Using a self-report questionnaire data were captured on coaches' communication practices about concussion safety and perceived ability to assess and manage concussion among their athletes. Data was collected electronically from June-September 2015. Results were analysed using SPSS Version 22.

Results The final sample consisted of 106 coaches (59 male, 37 female) from the island of Ireland. Results showed that a majority of coaches did not feel equipped to promote concussion education among their athletes (76.5%), determine if a player has sustained a concussion (69.7%) or to help an athlete who obtained a suspected concussion during training or a match (62.6%). Additionally, before the season, a majority of coaches did not talk to their athletes about concussion safety and the importance of concussion reporting.

Conclusions Findings from this study suggest that interventions should encourage communication about concussion safety with athletes and should provide coaches with communication skills and strategies about how to do this. Additionally, coach targeted interventions should focus on instructing coaches on how to recognise and manage a suspected concussion in one of their athletes.

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685 UNDERSTANDING MENTAL HEALTH SYMPTOMS SUFFERED BY TRAUMATIC BRAIN INJURY PATIENTS IN MOSHI, TANZANIA

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Background Traumatic Brain Injury (TBI) is the most common cause of injury death and disability globally. While TBI increases mental health burden, there is no current literature in low and middle-income countries (LMIC) about these patients. This project evaluated the pre-injury mental health of TBI at the Kilimanjaro Christian Medical Centre (KCMC) in Moshi, Tanzania.

Methods Surveys were conducted of TBI patients between May September 2015. Participants were >18 years old and responded at discharge the questionnaires: PHQ-9, Kessler, CES-D, and AUDIT. Data were descriptively represented and questionnaires classified according to the cut-offs: PHQ-9 >4, CES >15, Kessler >20, and AUDIT >7. Frequences, means with standard deviations (sd) were reported and a spearman correlation was used to evaluate associations.

Results Of all 77 TBI patients, most are male (84%) with mean age of 35 (sd 13) and married (61%). Patients were mainly farmers, skilled or unskilled workers or work in business. While a small percentage of patients have signs of depression (2.6% to 9.1%) and anxiety (4.2%) prior to their injury, a significant proportion have harmful or hazardous drinking behaviour (42.9%). A moderate correlation was observed between depression and anxiety symptoms (R = 0.44 and R = 0.51). A small and not significant association was found between hazardous or harmful

drinking and depression (R = −0.02 and R = −0.09) or anxiety (R = 0.02) amongst this population.

Conclusions This is the first report of pre-injury mental health of TBI patients in Tanzania. Although significant proportions of patients did not show large mental health systems hazard or harmful alcohol use was concerningly high. However, association patterns demonstrated that patients with harmful or hazardous drinking are not the same with depression and anxiety score. This is an important preliminary finding to understand the baseline mental health status of our TBI patients in a low income setting.

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686 **STUDY OF PREDICTORS OF PROGNOSIS OF MILD HEAD INJURY**

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Background The mild head injury is a mild traumatic pathology in most cases and the role of emergencies often comes down to an early lesion assessment, analgesic treatment and practice of a brain scan. The follow up is assured by the neurology departments and no feedback is communicated to emergencies and thus no relationship between the original picture and the prognosis can be established. The aim of our study is to evaluate the prognosis of mild head injury after one month based on initial data.

Methods Descriptive prospective study of the clinical and evolutionary characteristics of mTBI isolated over a three months period (October-December 2009).

Results We collected 200 cases of mTBI. The average age of patients was 38.9 years with a sex ratio of 1.78. The initial loss of consciousness was reported in 95 patients (47.5%) and was predictive of the presence of intracranial lesions (p = 0.02). Follow up has been done in 84.5% of cases. CT scan was performed in 50.5% and allowed to reveal traumatic defects in 16.8% of cases. The existence of an epistaxis, agitation or periorbital hematoma was correlated with the existence of traumatic injuries to the scanner (p < 0.05). 169 patients were evaluated at one month by the Glasgow Outcome Scale (GOS). 50% of patients kept variable somatic complaints (headache, irritability, insomnia ...). GCS, agitation, CCEP, CT score, initial loss of consciousness, Masters score and the ISS score are prognostic indicators.

Conclusions The initial loss of consciousness, the initial GCS, evaluating the severity of the accident and the patient's condition are predictors of the existence of intracranial lesions indicating brain scan. These factors with brain damage, Masters Score and ISS are prognostic factors which are correlated with the appearance of post concussion syndrome. Early psychological treatment is necessary.

Child and Adolescent Safety

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687 **ASSAULT RELATED MUSCULOSKELETAL INJURIES IN ADOLESCENTS AT ER**

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