P5.005 INVESTIGATION OF NEW APPROACH TOWARDS ROAD ENFORCEMENT SYSTEM IN POLAND

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Context Poland is covered by the automatic traffic enforcement system. Since road safety improvement progress in Poland is slow, it was decided to expand this system.

Process In 2019, a methodology was developed to optimize the selection process of recording devices locations, including enforcing the exceeding of speed limits and entering the intersections at red light. By using more technologically advanced recording devices, road network covered by automatic enforcement system has been expanded.

Analysis The available data regarding locations of accidents and collisions was collected. Data was verified and superimposed on country map, broken down into accidents' types. Data on accidents included their severity due to exceeding the speed limit, not maintaining a safe distance between vehicles, non-compliance with traffic lights etc. Spatial and multifactorial analyses were carried out as well. The maps were divided into areas and the degree of risk for each area was assessed. Each area was evaluated with regard to different weights, assigned according to events' severity and type. Methods for determining the intensity of traffic incidents and algorithms for creating ranking lists were developed. Based on that, specific areas were selected for further analyses.

Outcomes Based on the carried out analyses, locations for new recording devices were selected, ranking list of locations and risk maps were developed for all road types.

Learning Outcomes The new approach to the process of locations' selection of the recording devices is easy to implement and will contribute to the optimization of this process and, consequently, to road safety improvement.

P5.006 ROAD SAFETY INFORMATION AND KNOWLEDGE MANAGEMENT MODEL

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Context Every year there are over 35,000 road accidents in Poland, in which over 3000 people are killed and more than 40,000 are injured. Road accidents constitute a very heavy financial burden, they cost the state over PLN 33 billion a year (more than the state's expenditure on health care, education and higher education together), which accounts for almost 3% of GDP.

Process The interdisciplinary theoretical basis for the model was formulated. The review of good practices in the development of information systems concerning road safety to identify effective solutions was carried out.

Analysis Numerous analyses were carried out, including an analysis of the main road safety problems in Poland and around the world. It covered the issues related to the need for: scientific research on road safety, collection and arrangement of road safety data, coordination of activities concerning road safety, as well as monitoring of undertaken activities and dissemination of knowledge and good practices in road safety.

Outcomes Road safety information and knowledge management model can provide effective support to good decision making when designing and implementing road safety policies.

Learning Outcomes This model allows to collect, store, process, analyse, and make data, information, and knowledge available in the area of road safety. It constitutes a solid, reliable, and credible source of information for policy makers when developing road safety policies and strategies. This tool can be constantly improved, and data collection can be systematically expanded.

P5.007 ROAD SAFETY ACTIVE EDUCATION METHODS IN THE OPINION OF YOUNG ROAD USERS

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Background Contemporary educational needs require searching for and using more effective and attractive solutions to reach young road users, an example of which is active education AE.

Process Traditional learning methods are based on teacher as a source of knowledge. In AE teacher is the coordinator of students' work, activates them and acts as an advisor or observer. We have conducted projects and studies using road safety AE (e.g. workshops, demonstrations, problem solving) addressed to youth: Young Explorer University/YEU, Road Safety Education Centre/RSEC, European Road Safety Tunes/ERST, Knights for Road Safety/KROS. During classes youth is motivated to act by being encouraged, inspired, enabled to participate, which contribute to a sense of success, joy of effort, showing abilities, gaining recognition, and enabling to reflect on own and others' behaviour.

Analysis Our educational goal is among others to create among students a sense of independence and responsibility for themselves and others. The results of qualitative and quantitative studies show that such classes, in the opinion of youth are more attractive and effective than traditional, e.g. overall grade of class: very good and good: YEU (89%), RSEC (81%), ERST (89%).

Outcomes AE will not cure all road safety problems of youth. However it is important to effectively transfer knowledge, teach skills and attitudes, but also to make the classes more attractive for students.

Learning Outcomes Pedagogy is a dynamic discipline with various methods as AE. It requires teachers to constantly adapt to new needs and expectations as well as to undergo professional development.

P5.008 SAFETY ASPECTS OF E-BIKES

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Background E-bikes have become a popular means of transport in everyday and leisure traffic, especially for older people. Figures show a rapid increase in the number of e-bikes on the market: In 2018 more than 150.000 e-bikes were sold

in Austria, which means a total market share of 33% of all bikes sold (2016: 22%).

E-bikes are above all a good alternative for motor vehicles in city traffic.

The KFV (Austrian Road Safety Board) is currently dealing with questions about the safety of e-bikes.

Methods In our studies the following methods were applied:

1. analysis of existing accident data on e-bikes (statistical data, media analysis)
2. on-site observations (e.g. helmet wearing quota for cyclists, collection of speed differences of selected bike types, ...)
3. questionnaire survey among 101 e-bike users concerning the comfort and safety of different bike types
4. survey on the subjective safety of e-bike users and e-bike non-users

Results Results showed among others that...

1. ... in 2018 1.025 injured and 17 killed e-bike cyclists showed up in statistics
2. ... helmet wearing rate of e-bike cyclists was 44% (compared to 25% of conventional bikes)
3. ... the average speed of pedelecs was 21.4 km/h (compared to 18 km/h of conventional bikes)
4. ... pedelec drivers feel safer and more comfortable than conventional cyclists

Conclusion Based on the results, tips for safe driving with e-bikes were drawn up and measures and recommendations for action to increase the safety of e-bike users were derived.

P5.009 PREDICTORS OF PSYCHOLOGICAL AND FUNCTIONAL OUTCOME FOLLOWING TRAFFIC INJURIES: A SCOPING REVIEW

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Background Each year tens of millions of individuals are injured or disabled as a result of Road Traffic Crashes (RTCs). In addition to immediate death, there is an increased risk of subsequent death, ongoing physical disability, psychological issues, and reduced overall health related quality of life following RTCs. This study aims to identify the factors reported in the literature that are associated with adult trauma patients' morbidity following an RTC.

Methods A scoping literature review was conducted. Peer-reviewed articles were retrieved from MEDLINE/PubMed, EMBASE, and CINAHL.

Results This literature review identified six categories of variables being used in studies that explored predictors and factors associated with physical and psychological morbidity following RTCs. Five of the categories represented independent variables; (i.) injury characteristics and hospital predictive factors; (ii.) demographic factors; (iii.) family and social support; (iv.) compensation system process and fault in the RTC (v.); and pre-injury health status (vi.). The sixth category was used to represent the range of (vi.) psychological and functional outcomes.

Conclusion These findings highlight the multiple and diverse contributors that influence person outcomes following an

RTC. These factors are intrinsic and extrinsic and commence from the time of injury as well as highlighting the importance for ongoing support after acute care discharge to enable a quick return to optimal wellbeing.

Learning Outcomes Research examining RTC outcomes must integrate information about the crash response and health care system whilst simultaneously measuring other factors to appropriately quantify the relative contribution of each variable to psychological and functional outcomes.

P5.010 RED LIGHT RUNNING RATE IN THE KUMASI METROPOLIS OF GHANA

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In Ghana, approximately 12% of all road traffic fatalities occur at junctions and the cause of these crashes, as assigned by the traffic police, include signal violation. Red light running place the violator and other road users at risk of road traffic crash. The main aim of the research work was to undertake baseline study to establish the current level of red light running through a direct observation survey and determine the risk factors associated with traffic light violation in the Kumasi Metropolis of Ghana. An uninterrupted road side observational survey was conducted at ten (10) signalized intersections using pro-forma checklist. A binary logit model was employed to determine the risk factors associated with traffic light violations. Overall, drivers were observed running red in 35% of all the red phases observed. From the model, factors which influence red light running include the age and gender of the driver, presence of a passenger in the vehicle, vehicle type, junction type, cycle length of the signal and queue length. There is a need for public awareness campaigns on the dangers of red light running. The education on red light violation must be accompanied by sustained enforcement of the traffic law by the traffic police to help reduce the violation of red light. Deployment of automatic red light cameras will also go a long way in ensuring enforcement at all times.

P5.011 EVALUATION OF INTERVENTIONS TO PROMOTE CHILD RESTRAINT USE AMONG KINDERGARTENERS IN CHINA

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Objectives To evaluate the effectiveness of parent-based child restraint system (CRS) intervention so as to promote the parents' knowledge, attitude, and use of CRS.

Methods We conducted a randomized trial with cluster sampling in 8 selected kindergarteners in Shantou and Chaozhou, China (4 from each city). Parents were randomly assigned to receive 1 of the 4 conditions: education intervention, behavioral education intervention, biomechanical visualization intervention, or control.

Results Six months after the intervention, multivariate logistic regression models showed that child gender of boy, parents'