The Newsletter of the Road Traffic Injuries Research Network (RTIRN)

April-June 2013

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Message from the RTIRN Board

Dear Colleagues

In this edition of the RTIRN newsletter we have a range of contributions about the different research approaches that can be used to address road traffic injury. These methods range from simple surveys and analysis of crash data (to measure the burden), observational studies, such as case-control studies and cohort studies (to examine risk factors) all the way to experimental designs like randomized trials and interrupted time series studies (to measure program effectiveness). There are, of course, many variations of each type of study design and research method used, and the way in which we use them varies by the study question we are asking and the resources at our disposal. The methods that we use are important however because all are subject to some kind of bias, or error – if we don’t ask the right question, or use the appropriate methods, we can get the wrong answer. It is therefore important to plan ahead, and to design our research to minimize the chance of bias.

In this edition of the newsletter, we have contributions from our partners on a range of different types of research methods across the spectrum of road safety research. We have a range of contributions about measuring crashes, from using spatial analysis in Burkina Faso with GIS techniques in Romania as an introduction to engineering approaches of road safety, to the use of capture-recapture techniques from Iran, and New Zealand. We also have a piece on understanding crash sequencing using police crash reports in Spain, work by Acar on developing safer restraints for women/occupants during pregnancy, and a contribution from Australia on evaluating the effectiveness of road safety treatments. You will also find an article in this edition from Ledesma and Poó of Argentina who write about methodology used to understand road users and their behavior. We also have a piece from China on drunk driving, as well as a summary of the approach for evaluating road safety programs in LMICs used in the RS-10 project. To finish up we have a piece from the UK about tranexamic acid, describing efforts to translate results from the large randomized trials that show the effectiveness of tranexamic acid by reducing the bleeding in trauma patients, and putting it into practice. The authors used freedom of information legislation to examine the use of tranexamic acid in clinical care. Freedom of information requests are increasingly being used for such purposes and are another way in which researchers may collect data.

These contributions highlight both the diverse range of approaches used in road injury research and the immense capabilities of our partners throughout the world. Thank you to all contributors!

Dr. Rebecca Ivers
RTIRN Board Member
Dear friends,

We at the RTIRN would like to thank all our partners that contributed to this April-June newsletter dedicated to “Research Methods and RTI”. We received a total of 13 great contributions for this issue and thus we would like to thank to our RTIRN community that participated on this issue, without your help this great effort would not have been possible.

As we did last year, we are now preparing the “Best contribution award” to acknowledge the effort and time invested from our RTIRN community on our newsletter. From the total 45 contributions received during 2012, a special committee will select 3-5 contributions from which the RTRIN community will vote to select the best contribution for 2012. We cordially invite you to participate in this process. More info inside.

I’m very glad to inform you that on February 26th – 27th the RTIRN organized a two day workshop for the South American region in the city of Curitiba, Brazil. Most of the countries from South America were represented at the workshop. The main objective of the workshop was monitoring and evaluating the activities that countries are carrying out in the context of the Decade of Action for Road Safety. The event was a great opportunity to interact and to create networks among the participants and allow them to share and discuss their own issues with the rest of the attendees. You will find more details inside this newsletter.

Do not forget to visit our online forum. The RTIRN forum is completely free for access and no password is required to participate, go to http://www.rtirn.net/online_forum.asp and participate. Also don’t forget to visit our facebook page (http://www.facebook.com/RTIRN) and follow us on twitter @RTIRN; join us on our effort to make the roads safer.

Talking about facebook and twitter, we are releasing a new section called “Ask the expert”. This new section will be open during and after our webinars and will allowed our community to ask direct questions to our Board Members and guests speakers that are sharing their experience through this initiative. We will begin with Dr. Ken Stevens who kindly agreed to give a webinar on EMS during the month of April. We hope you can take advantage of this platform! In addition, you will now be able to ask contributors to provide more detailed information on the work they are doing in the field. Through a special post in facebook and twitter we will make sure your questions and comments will get to those who kindly contributed to our newsletter or to the Board member that supported on the integration of contributions for the newsletter. For our first time Dr. Rebecca Ivers (RTIRN Board Member) and the rest of the newsletter authors will be available to answer your questions and comments on the topic of Research Methods. Go to our facebook page, look for the post and add your question; for twitter just follow the hastag #asktheexpert. RTIRN will only answer questions published on the post and timeline. Let us know how do you like this section.

Thanks again to all of our partners that contributed on making this issue a very special and memorable one and a very Special thanks to The Johns Hopkins International Injury Research Unit - A WHO Collaborating Center - funded by the Bloomberg Philanthropies on their support on making this newsletter possible. Please remember to send your contributions for the July-September issue on “Surveillance in RTI”; make sure your contribution is sent before/ June 1st.

Enjoy this issue!

Ricardo Pérez-Núñez
RTIRN Secretary, 2010-2013
**Contributions**

**Estimating Road Traffic Deaths in Low and Middle-Income countries using Capture-Recapture Method (Ali, Iran)?**

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To analyze records of Road Traffic Deaths from two injury surveillance systems, to ascertain a true estimation of RT-mortality, we could use a capture-recapture method to arrive at a more accurate estimate of the number of RTD events occurring over a one-year period in low-and middle-income countries like Iran, where data sources are not completed. Records from Iran’s Forensic Medical System and Death Registry System could be compared, if they were completed by using a matching-based approach on various combinations of the following variables: gender, place of event, date of death, victim’s age, name, region of residence, and/or place of residence, etc.

Records from both the FMS and DRS were merged into a single file, using Excel and an estimation of the total number of victims, including missing cases, could be derived using the simplest form of a two-sample capture-recapture model. With using this method the RTD rates and the CI (confidence interval) will calculate using the estimated total number of RTD cases (N) using the following formula:

Estimation of N= \( \frac{(S_1+1) \times (S_2+1)}{(C+1)} \cdot 1 \)

S1 represents the number of records in the DRS and S2 is the number of records of the FMS. The overlap between these samples C represents those common in both sources.

Variance \( \text{N} = \frac{(S_1+1) \times (S_2+1) \times (S_1-C) \times (S_2-C)}{(C+1)^2} \)

95%CI=\( n \pm 1.96 \sqrt{\text{Var}(n)} \)

However, we can obtain an estimated point of the population, N, for specific sub-populations, as well as the capture rate and a 95% confidence interval. To estimate mortality rates per 100,000 of the population, it might be calculated by dividing the number of cases (N) as the numerator and the population of area studied as the denominator.

This simple technique was first applied in the 1940s and become more widespread after the work of Wittes in the 1970s, followed by Stephen in 1996.


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Road traffic crashes represent one of the leading causes of unintentional injuries worldwide. Evidence-based prevention efforts and research are put into action to reduce the burden of RTI. Specifically, injury surveillance and prevention efforts have been improved by using the Geographical Information System (GIS), which proved to be effective in identifying environmental and road-related risk factors of traffic collisions.
The Center for Health Policy and Public Health in Cluj-Napoca, Romania conducted a pilot study to evaluate the characteristics of traffic crashes by geo-coding the traffic police data of the year 2010. ArcGIS version 9.1 was also used to identify the major patterns and occurrences of collisions in the selected areas. A number of 529 (63.6% from a total number of 832 crashes) fatal and non-fatal traffic crashes were mapped and geo-coded to a specific location. The geo-coding match rate for urban areas was 53.8% (N=285) and for extra urban was 46.1% (N=244).

More than half (54.4%) of the total number of geo-coded traffic crashes were identified on the map in areas with no means of traffic signaling, while a total of 38% (N =201) of all traffic crashes occurred in the city of Cluj-Napoca, itself.

Overall, in urban areas, road sections with higher potential of crash occurrences were the pedestrian crossings at 21.4% (N = 61) and intersections with signs and marking at 20.7% (N = 59). When it comes to causes, 40.8% (N=216) of crashes were caused by aggressive driving, including prohibiting priority to pedestrians and other vehicles, irregular overtaking, fail to keep the proper distance between vehicles and driving in the on-coming traffic lane. In the end, more than half of these were located in urban areas.

Seventy-eight (32%) crashes were caused by speeding in extra urban areas and 70 collisions (24.5%) were caused in larger urban areas by j-walking pedestrians. Of the 77 crashes that were caused by drivers who prohibited the pedestrians’ right-a-way, 66 of them were clustered in an urban area. For 137 collisions, a second cause was applicable, 33 being caused by drunk driving especially in extra urban areas at night.

GIS databases and the analysis of geo-coded data have proven to be useful in identifying the characteristics of traffic collisions in designated areas. This study provides evidence-based information of local prevention strategies and policies on the approach needed to reduce the number of traffic collisions and road traffic injuries.

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**Where are the road crashes black spots in Ouagadougou**

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According to the World Health Organization, one of the major causes of death in the world in the next 10 years will be road traffic injuries. The “South”, and in particular African countries, are those most affected by traffic injuries. It is the case of Ouagadougou in Burkina Faso, which is seeing rapid urban development and difficulties within travel and transportation. In addition to heavy traffic, the capital has seen a big increase in road traffic crashes with serious health consequences. These incidents have various causes but they are related to four distinct factors:
• Traffic that includes the co-existence of non-motorized road users, which are slow and vulnerable, as well as motorcycles and vehicles that do not respect safety rules.
• A large variety of “parallel means of transportation”.
• An absence of traffic regulation on roads which are either damaged or in poor condition.
• A lack of respect for the Highway Code, as well as a large number of drivers without a driver’s licence.
• Cars that are old and dilapidated.

The methods used are those of spatial analysis and the study of collisions (E. Bonnet & Lassare (2010). The primary difficulty is the availability of data. Our research in Ouagadougou over the last 6 years has led to the development of relationships with the police department and emergency workers, who collect, archive and provide information of each incident that they respond to. Spatial localization of these collisions are added on a second step by our team.

Fig 1: Road accident black spot in Ouagadougou - December 2011

These results highlight the black spots that are found during collisions, such as particularly busy junctions, (Rond Point des Nations, Avenue Bassawarga, Avenue Kadiogo, etc.), as well as on other secondary roads with less traffic build-up which can be an avoided behaviour by teaching different strategies to the drivers, themselves.

All of these analyses have been collated on maps that not only act as an aid to understand the study of collisions in Ouagadougou, (at the end of 2011) but also to serve as visual aids in discussions with those responsible for safety and emergency services.

A comprehensive exploration of drink driving in China using multiple perspectives

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There is increasing recognition in China that drunk driving is a major contributor to road trauma. My program of research, explores drunk driving knowledge, attitudes and behavior from the varied perspectives of general drivers, convicted drunk drivers and traffic police, within two different locations: Guangzhou, in southern China and Yinchuan, in north western China.
In 2012 I conducted four cross-sectional research studies involving qualitative and quantitative methods in each city. A survey assessed general drivers’ knowledge of, attitudes towards and practices, relating to drinking and driving (about 400 in each city), and the same survey was separately administered to convicted drunk drivers (about 100 in each city). Qualitative research involving a semi-structured interview procedure was undertaken with a small number of traffic police officers in each city to investigate their opinions on drunk driving and enforcement. In following this interview, a quantitative survey of traffic police addressed the same issues in a more structured way (about 50 in each city).

I am confident that these multiple perspectives will provide valuable information on drunk driving and its enforcement within China.

Research Methods Needed for Evaluation of Large-Scale Road Safety Projects in Low- and Middle-income Countries

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While the burden of road traffic injuries in low- and middle-income countries (LMICs) is well documented, evidence generated on the effectiveness of road safety interventions in these countries remains scarce. Additionally, standard methods for research evaluation must be modified to fit LMIC settings. Therefore, researchers at JH-IIRU have developed a scientific approach for evaluating road safety programs in LMICs. This is being used in the Road Safety in 10 Countries Project (RS-10), which is a multi-country road safety project.

This new approach draws on existing health evaluation framework and consists of several elements including:

- Defining the evaluation scope;
- Selecting study sites;
- Maintaining objectivity;
- Developing an impact model;
- Utilizing multiple data sources;
Given the extensive nature of this framework, several methods for data collection need to be utilized. While these methods can be standardized across sites, specific protocols will need to be adapted to suit the local context. Such adaptability is critical when working in a multi-country research setting. These methods include: observational studies; roadside surveys; in-depth interviews and focus group discussions; injury surveillance systems; household surveys; and the systematic analysis of secondary data sources.

Through the use of these varied methodological approaches and a newly developed scientific approach, JH-IIRU aims to improve evaluation methods for road safety interventions in LMICs and also contribute to the global pool of knowledge in this field.

For more information read the full paper at Global Public Health (http://www.tandfonline.com/doi/abs/10.1080/17441692.2013.769613)

**The METRAS method of sequencing events in the framework of Traffic Collision Statistical Research**

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Police crash records are one of the basic, raw materials that are mostly used by Road Safety researchers around the world and are the basis upon which road safety policies and actions are developed and assessed. In this context, the study, evaluation, improvement and optimization of these record systems have represented a priority objective in the national and international road safety programs and policies. After Spain and Catalonia have performed an in-depth analysis of the crash data collection and computerization procedures of the police, we have carried out an innovative proposal of modification and have provided an updated version of these contents by taking into account the requirements of the CARE European database and the different proposals of SafetyNet. This proposal highlights how one of the most innovative contents is the integration of the METRAS method as part of the police collision record protocol. This particular part replaces the current information on the type of collision, which is widely used in the road crash studies and, however, poses important limitations as far as the quality is concerned.

The METRAS method (Measuring and Recording Traffic Accident Sequence) starts from the basis that a crash is a complex process with a dynamic nature. It is a generic structured protocol that allows collecting the sequence of events that happened during the course of an accident and assigning the involved traffic units, as well as identifying the most serious event in a relatively easy, practical and manageable way from the statistical point of view. It makes possible to know the interrelations with the elements that are present before the collision, aiming at exploring both the possible preventive measures and the ones directed towards an appropriate intervention on the road, the vehicle and the person. This method opens other research possibilities from the statistical framework that were, up until now, typical of the in-depth studies, which have important limitations and high costs. A commission of police experts and one of the experts in crash research as well as two empirical evaluations have given a positive evaluation to the method. (Tormo, M.T. (Ongoing Doctoral Thesis)).
Some Engineering Approaches to Traffic Safety Analysis

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Traffic safety is characterized as a multidisciplinary nature, in which different research fields are gathered together with the aim to decrease road crashes and their severities. In each field, different methodologies and approaches are adopted for modeling. This short essay tries to introduce four important approaches currently on going in the context of engineering for studying traffic safety.

Crash Data Analysis: Modeling frequency/severity of collisions in isolated intersections/road segments with regards to roadway attributes, traditionally and most commonly starts with count modeling of crash data reported by traffic police. Different methodologies (from simple Poisson and Negative Binomial to
Zero Inflated/Hurdle Models) have been applied for example, to predict the frequency of road crashes. However, crash under-reporting, being a reactive approach as well as many methodological issues such as over/under dispersion, internal correlations, etc; have been cited by many researchers in this approach.

**Traffic Conflict Techniques:** As proactive methods, conflict techniques have been formed based on field investigation of a sequence of events prior to serious conflicts. Serious conflicts in this approach are distinguished by measures surrogated for crashes and fixed thresholds. However, a big difficulty in conflict techniques is the correlation between the surrogates and crashes.

**Computer Micro-Simulation Modeling:** Using predetermined models that explain road user behaviors within computer packages generate individual movements of different road users in sophisticated transportation systems. This approach allows for evaluating a wide range of changes in traffic/transportation systems (from simple engineering countermeasures to complicated policies) on traffic safety, before they are being taken in the real world. Again, a big difficulty in micro-simulation models is how they are calibrated and validated.

**Driving Simulation:** Providing control over important variables affecting traffic safety, driving simulators are widely used to study psychological and ergonomic effects of vehicle/road dynamics and emerging technologies on driving behavior. Simulators should provide driving situations as far similar to reality as possible; hence a modern approach in this context is using instrumented vehicles to observe drivers’ behaviors in naturalistic settings.

Headlines above give only a brief introduction to a few most common methodologies used in engineering analysis of traffic safety, to motivate interested readers. However, scientific peer reviewed journals annually bear tens of scholar references written about ongoing research in each specific approach.

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**Evaluating the Effectiveness of Road Safety Treatments**

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Evaluations of road safety treatments are of critical importance to ensure programs are delivering effectively and to generate a reliable, knowledge base about the effectiveness of these programs. ARRB Safe Systems team has been involved in the preparation of two important publications in this area. Crash modification factors (CMFs) are the key concept in effectiveness evaluation. CMFs represent the relative change in crash frequency due to the application of a treatment.

*An Introductory Guide for Evaluating Effectiveness of Road Safety Treatments* is an Austroads publication that deals with practical aspects of the planning and conduct of evaluation studies, aimed at practitioners.

The *Introductory Guide* proposes the following steps for designing and conducting an evaluation of crash reduction effectiveness:

1. Consider the purpose of the evaluation
2. Consider factors that may affect evaluation quality
3. Select the appropriate design method
4. Assess the evaluation design
5. Conduct and report evaluation

The better the quality of the evaluation, the more reliable the CMFs are likely to be. Quality, in turn, depends on validity. Four key aspects of validity are discussed, along with how much validity might be compromised and how attention to the study design might be able to avoid this.

The report outlines the different types of study design, and discusses advantages and disadvantages of each. They include:

- Cross-sectional studies
Among the key points in the report are:

- the complexity of decision-making for safety interventions
- our increasing dependency on sound indicators of the effectiveness of interventions
- the fundamental importance of CMFs and the growing demand for them

The need for more training and regular practical use more extensive analyses of the circumstances under which CMFs are achieved to ensure transferability.

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**Research Methods from Traffic Psychology**

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Our research group “Models and Methods in Traffic Psychology” has several lines in research methods, psychometric and data analysis. Some of our works have received support from the RTIRN, through its grants for junior and senior researchers.

Among the instruments we have developed, there is a Spanish version of the MDSI (Multidimensional Driving Style Inventory). The MDSI assesses different dimensions of the driving style (risky, anxious, angry, and inattentive). We found this instrument appropriate to detect risky subjects and groups. Another contribution we have made was the development and validation of the Attention-Related Driving Errors Scale (ARDES). This scale measures individual differences when driving inattentively. We also have developed an ARDES version for motorcyclists (ARDES-M).

Nowadays, we are interested in the development of measurement instruments alternative to self-reports, which allow evaluating driver behaviors and attitudes with lower biased responses. We are working on different versions of the Implicit Association Test (IAT) (Greenwald, McGhee, & Schwartz, 1998) to assess risk perception. For example, we have created one IAT to study attitudes toward helmet use with motorcycle drivers, which preliminary results have shown that the IAT could be a useful tool to assess implicit attitudes toward this safety device.

Finally, we are interested in developing free statistical software. We have actively worked in the development of ViSta “the Visual Statistics System”, a data analysis and visualization software. We believe this program can be very helpful to those who do not have access to commercial software. Our work on ViSta has been made in collaboration with researchers from the INTRAS (Instituto Universitario de Tráfico y Seguridad Vial, Universidad de Valencia).
Completeness of Crash Outcome Data in a Cohort of Cyclists: A Capture Recapture Analysis

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Regular cycling, despite its health and other benefits, is deterred by the perceived risk of injury for many people. However, reliable information on the actual risk of injury over the spectrum of severity is scarce as current statistics rely on a single official database of limited quality. We, therefore, evaluated the completeness and accuracy of crash outcome data collected from multiple sources in the Taupo Bicycle Study.

It is a prospective cohort study designed to examine factors associated with regular cycling and injury risk in New Zealand. We recruited 2,438 adult cyclists from the country’s largest mass cycling event in 2006 and another 190 in 2008. We obtained data regarding medically or police attended bicycle crashes that occurred between date of recruitment and 30 June 2011 through linkage to traditionally used hospital discharge, mortality and police databases as well as a publicly funded national insurance claims database. New Zealand has a ‘no-fault injury compensation scheme’ which provides personal injury coverage for all residents and temporary visitors to the country. As such, the claims database is a major source of information on relatively minor injuries.

This analysis was restricted to the 2590 participants who were resident in New Zealand at recruitment. During a median follow-up of 4.6 years, 855 participants experienced 1,336 crashes of which 755 occurred on public roads and 120 involved a collision with a motor vehicle. We assessed the completeness of the linked data by capture-recapture methods. These methods were originally developed to estimate the size of an animal population, based on proportions of animals that were captured, marked, released and recaptured in two or more random samples. We used log-linear models to estimate missing crashes, taking into account possible associations across the databases. The models estimated that the linked data were 74% complete with negligible differences between on- and off-road crashes. The data was 83% complete for collisions.

Our findings underscore the need to consider and account for potential biases due to outcome misclassification in our subsequent analyses as well as in other similar studies. In our future attempts to capture a complete picture of injuries, it is also necessary to improve the quality of individual data sources and to develop comprehensive record linkage techniques so that all available data sources can be used reliably.

Expecting represents pregnant occupant with a 38-week fetus model. Simulation shows 30 kph frontal crashes when wearing no seatbelt.

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Each year, 131.5 million babies are born in the world. During pregnancy, the female body undergoes many changes. These changes range from small to large but the presence of a fetus, along with the unique geometry of the pregnant woman, makes them a different group of occupants, altogether. It means that potentially 131.5 million pregnant occupants each year travel as passengers or sometimes as drivers in vehicles which are not designed to take into account their differences and vulnerability. The level of exposure of pregnant women who are experiencing an automobile incident is on the increase. It has been shown that motor-vehicle crashes are the leading cause of accidental fetus mortality, worldwide.
Serpil Acar, Professor of Design for Injury Prevention at Loughborough University, UK, is the principal investigator of a series of research projects to improve the safety of pregnant occupants and their unborn child. The research includes the development and implementation of the most advanced computational model of a pregnant woman, named ‘Expecting’ which tackles the complexity of a pregnant woman’s anatomy. This is the only pregnant occupant model in the world which incorporates a 38 week-old fetus and uterus model. ‘Expecting’ has been validated and used in simulations of variety of conditions and crashes. ‘Expecting’ has helped us understand the possible improvements in safety for pregnant occupants and fetuses, develop guidelines and design products based on the research, modeling and simulations.

The success of any human model partly depends on how closely the model represents the original human subject. Anthropometric variances may play a crucial role. For example genetic characteristics of ethnic groups such as being very tall or short may change the injury and fatality conditions, dramatically. Likewise, some people may not have been educated on how to correctly wear a seat belt, so it could save their lives.

Life-saving trauma care for road crash victims: surveillance of tranexamic acid use in the UK.

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In 2010, the CRASH-2 randomized controlled trial (on 20,211 bleeding trauma patients from hospitals in 40 countries) found that the administration of tranexamic acid safely reduces mortality in bleeding trauma patients, by up to one-third when given within three hours of injury.\textsuperscript{1,2} And tranexamic acid is also highly cost-effective worldwide – in low-income, middle-income, and high-income countries – with a cost per life-year gained of $48 in Tanzania, $66 in India, and $64 in the UK.\textsuperscript{3}

Road Peace is the United Kingdom’s national charity for road crash victims. To assess the degree to which the strong evidence on tranexamic acid is being applied in the UK, Road Peace submitted freedom of information requests to 291 UK hospitals. The survey inquired whether hospitals include tranexamic acid administration in their trauma protocols and, for 2011, how many acute trauma patients received blood transfusions along with the number of those patients that were given tranexamic acid. Of the 291 hospitals that sent requests, 209 responded (72%). Of these respondents, 89% reported to include tranexamic acid in their trauma protocols. Most hospitals did not provide data on blood transfusions or tranexamic acid use, reporting instead that examining individual medical records would exceed the Freedom for Information Act 2000 excessive cost barrier (18 working hours or £450). At the 34 hospitals that did provide this data, just 34 (8%) of 451 acute trauma patients that were given blood transfusions in 2011 were also given tranexamic acid.
This survey data suggests that more must be done to increase tranexamic acid use in UK hospitals. Road Peace is optimistic that the rapid policy response on this issue will soon improve tranexamic acid use in the UK. Hospitals should further commit to its use by signing the Trauma Promise at www.traumapromise.org. Reflecting on the survey: freedom of information data illuminated a critical issue with institutional practice and has shaped our tranexamic acid advocacy as we move forward. Road Peace is committed to ensuring that trauma victims benefit from this life-saving treatment, and we will survey 2012 tranexamic acid use in the UK to assess progress on improving this critical element of trauma care.

References:

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**Exploratory spatial analysis for the detection of priority areas in preventing deaths of drivers in Argentina.**

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According to Tobler’s law, everything is related to everything else, but closest things are more related with respect to the most distant. The spatial autocorrelation is a technique that allows spatial exploratory test this law and also enables the identification of clusters of high mortality in epidemiological studies. The level of spatial autocorrelation was measured by Moran’s I Index and was applied at the departmental level in Argentina.

The range of possible values that throws this index is -1 to 1. Positive values indicate a spatial grouping of similar values (maximum concentration), while negative values indicate a grouping of different values (high dispersion). To test the hypothesis of no independence between observations and spatial autocorrelation were conducted permutations that generate random distributions.

The Moran’s I index shows no spatial location of clusters, since it is a measure of overall autocorrelation, so were calculated local versions of Moran's I index, called local indicators of spatial association (LISA, for its acronym in English). These indicators show in the maps areas with high mortality rates and that in turn tend to be surrounded by other areas with high mortality rates, called clusters with values ‘high-high’ (in red on the map).

A spatial autocorrelation analysis conducted for car users in Argentina showed a tendency to form clusters of high mortality (Moran’s I = 0.24, P <0.01). Figure 1 shows the spatial distribution of deaths among car users (rates per 100,000 population) for the period 2001-2010, while Figure 2 shows the distribution of clusters of high mortality (in red) after performing the analysis with Local Indicators of Spatial Association. This exploratory spatial analysis showed that deaths from traffic injuries in car users tended to form clusters of high mortality rates and the central and southern regions are priority areas for prevention and control policies.
Fig 1. Road Traffic injury deaths in car users in Argentina (rate per 100,000 inhabitants).

Figure 2. Local Indicators of Spatial Association for the deaths of car users in Argentina, 2001-2010.
We welcome our new partners to the RTIRN

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<tr>
<th>Country</th>
<th>Names</th>
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<tr>
<td>Argentina:</td>
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<td>West Bank and Gaza:</td>
<td>Jehad Hassan Nassar</td>
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<td>Zimbabwe:</td>
<td>Tinashe Gede</td>
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http://www.biomedcentral.com/1471-2458/13/106


http://www.bmj.com/content/346/bmj.f1140

News and events

RTIRN partners present at the 15th Public Health Research Congress.

On March 6th to 8th the National institute of Public Health (Mexico) hosted the 15th National Congress on Public Health Research with the objective of sharing and discussing with key stakeholders of society, the progress in public health research that will contribute to the identification and understanding of health problems their determinants and challenges to achieve an universal and effective coverage of the health system. The event took place at the National Institute of Public Health located in the city of Cuernavaca, Morelos; Mexico.

The event also provided a platform for young and senior researcher to share their current work on Public Health with the rest of the attendees. Young RTIRN partners MCs. Lourdes Gomez and Daniel Vera shared their work at the event. Lourdes presented her work entitled “Impact of the reform on alcohol consumption and driving in the state of Jalisco, Mexico” and Daniel presented “Passengers traveling on the outside of motor vehicles: a forgotten risk factor” and “Prevalence of mobile phone use while driving in three Mexican cities”.

We congratulate our RTIRN partners for their efforts and work presented at the congress. If you would like to contact both partners, please email them at:

Lourdes Gomez (Mexico)
lourdes.gomez@insp.mx

Daniel Vera (Mexico)
daniel.vera@insp.mx

Congratulations!!!

RTIRN regional workshop “Evaluation of Road Safety Interventions: Key Component of the Global Decade of Action”

With financial support from the Global Road Safety Fund and IIRU, the RTIRN organized a Regional Workshop for the South America region in the city of Curitiba (Brazil) on February 26th and 27th. Using a team of international road safety experts with wide experience in road safety research to provide technical tools and develop capacity in order to enable people to monitor and evaluate the various activities being undertaken for the Decade of Action in South American countries.
The workshop was aimed to review the activities, done by the countries represented at the workshop, for the Decade of Action for Road Safety. Representatives of 9 countries participated in the workshop. Each country shared their experience and their respective plans for the Decade of Action for Road Safety.

For more information on the workshop and access to presentations please go to our website http://www.rtirn.net/index.asp

RTIRN and the Decade of Action

The RTIRN supports the Decade of Action on Road Safety 2011-2020 by displaying the work done by our community for this very important and massive event. So we have developed a special webpage to showcase our partners and their institutions plans to commemorate this special date http://www.rtirn.net/members.asp.

If you or your organization are planning something to commemorate this special date, please share your plans with our community; send them to secretariat@rtirn.net or administrator@rtirn.net

Best Contribution Award!!!!

Because of the great contributions we have received over this year and because of the great participation from all of you on last year’s “Best Contributions Award”, we will award the best contribution of 2012.

We strongly believe that the participation of our network is fundamental and without them we wouldn’t have a newsletter. This past year was a great year for our community and we received great contributions.

Stand by for more information soon!!!!
Save the dates!

SIDAT International Symposium on Alcohol, Drugs and Traffic
Porto Alegre – Brazil: October 7th – 10th 2013; A satellite symposium of the XVIII Brazilian Congress of Toxicology.

If you know about any future event and would like to share it with all RTIRN partners, please send an email to: administrator@rtirn.net

Make the RTIRN newsletter your own!

• Have news of road traffic injuries research in your region?
• Intervention projects?
• Upcoming events or new publications?

Share it with us at the following address: administrator@rtirn.net

Follow RTIRN on Facebook and Twitter

You can follow us on Facebook and Twitter. Now our partners will have a better platform to connect with each other. Look on Facebook: http://facebook.com/RTIRN and on Twitter: @RTIRN. You can also contact us via both pages and discuss any subject and doubt you may have.

Feel free to use both of these new tools that are at your entire disposal.
To become a RTIRN partner

To become a partner of network, please visit our website at www.rtirn.net
For further inquiries, please contact:

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