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Accidental Trauma and the Vacationer

I Mackay

World travellers are more likely to suffer a traumatic incident than an infectious disease, (excluding diarrhoea), a fact not always appreciated by health advisors, or the public. Most travellers believe that infectious disease is the most likely hazard to health while travelling abroad. In terms of chronic morbidity, trauma is a more likely occurrence.[1]

Road traffic accidents are one of the leading causes of mortality in travellers. Greater awareness of this particular hazard might ensure that more of the travelling public take sensible safety precautions in their journeys abroad. Overwhelmed by the impact of new cultures, unaware that safety regulations and legislation may fall far short of those at home, and carried away by holiday euphoria or over-indulgence in alcohol, or drugs, many people fail to practise simple measures of personal safety when overseas. Accidents cause more than20% of all deaths among overseas travellers.28% of these are due to road traffic accidents (RTA) and many more people are injured. Compared to the UK, the chance of vehicle accident doubles in near Europe and triples in Greece and Portugal.[2]

While conventional measures to protect against disease are important, more emphasis ought to be put on the traumatic dangers to health by travel health clinics and health promotion staff, when advising the traveller. Advice on accident prevention tends to be neglected, yet it has the potential for reducing morbidity and mortality. Victims of accidental trauma often require expensive evacuation to return them home and then they place a heavy burden on health service resources People should be encouraged to maintain the same and ideally, more rigorous safety measures abroad, as in the home environment. in a review of pathologies requiring medical evacuation, road traffic accidents (RTAs) were the most common cause.[3] In 1369 consecutive medical problems advised by foreign travellers, 30.9% were due to trau-ma of varying severity and only 1.7% involved tropi-cal or exotic infections. The main presenting features were predominantly falls, sports injuries and RTAs. and a survey of medically-assisted repatriated trav-ellers found that in 40.5% of cases the pathology was due to trauma.[4]

In launching the Campaign of Action for Road Safety, 2011,the UN commission reported that road related trauma is the biggest killer of young people world wide.[5] The RAC Foundation found that teenagers and males in particular, are most at risk with 42 deaths per million of the general population per annum. Young males have an even higher rate of 127 per million.[6]

Accidents are a major source of avoidable disability and death for UK travellers, especially in those under 30 years of age. Risk is diminished by safetymeasures such as safety belts, motor cycle helmets, annual vehicle roadworthiness tests, and improved vehicle safety design and inflation bags. Many of these preventive measures do not exist in countries frequented by tourists and businessmen. A third of British traffic also travels on motorways which are safer than non-segregated traffic routes.

There is a considerably greater risk of RTA in many regions abroad, especially those that are economically undeveloped with poor quality and heavily congested roadways Developing countries often have no motor-ways or separated traffic lanes and have 20 times more traffic accidents per mile than in the developed world.. Death rates for motor vehicle crashes per 10000 vehicles are 2-3 for many West European countries and the USA, 28 for Mexico and 54 for Guatemala.[7]

Increased trauma risk for travellers is due to:

- Inadequate, or unenforced legislation
- Unpoliced road and vehicle regulations
- Unfamiliar, hazardous environments

- Absent or poor health and safety regulations
- Narrow, truck-congested routes
- Poorly maintained, poorly engineered roads
- Poorly maintained roads
- Proliferation of bicycles, animals and pedestrians
- Unmarked, unlit, unmade roads
- Ancient vehicles without safety devices and routine checks for road worthiness
- Unlicensed, untested drivers and those under influence of alcohol/drugs
- Hired vehicles'[8]

Traffic accidents in foreign countries are an impor-tant cause of death for Peace Corps volunteers and American Missionaries.[9] Dutch workers in developing countries have a mortality rate double the population living in Holland, with traffic accidents a principal cause When adjustment is made for number of registered vehicles the RTA fatality rate in developing countries is much higher than in developed countries. A greater proportion of pedestrians is involved in these countries compared with the developed world, where the greater proportion of injuries deaths occur to vehicle occupants. Drivers are often young, inexperienced males, with a cavalier attitude to their vulnerability.

Many underdeveloped countries are undergoing very rapid industrialisation and motorisation goes with it. Where motors, cycles animals pedestrians intermix, there is traffic chaos and injury, In China and Asia motor vehicle registrations are growing at a phenomenal rate. The number of road deaths in China and India is over 50,000 per year per country with road trauma a major cause of fatality. Tourists in deluxe coaches are not insulated from traffic frenzy commonplace in Beijing, Delhi, Cairo, Istanbul, Lima and many of the world's capitals or on rural byways where camel and donkey traffic may reign supreme. These cities attract the vacationer intent on seeing the world. Coach drivers can be unskilled, overworked, on drugs or under the influence of drink..

Case Histories

1. A tour group was driven in a coach along the narrow, truck-congested road between Istanbul and the Mediterranean by a driver who had been driving constantly for 10 hours by the time he picked the passengers up. He was high on hashish and insisted on driving with his feet on the steering wheel, until forcibly removed from his seat by terrified passengers.
2. A tourist coach driver in Nicaragua had been quietly imbibing alcohol over the lunch break. His performance on the road in the afternoon was erratic and accompanied by frenzied bursts of singing and waving his hands in the air. He failed to negotiate a turning and the bus smashed into a bridge, injuring some of the passengers.
3. An fear provoking journey occurred in Bhutan, which is still creating its first roads and has few cars and very young drivers. The latter vie with one another in death defying journeys along precipitous narrow roads. One tour group driver endeavoured to emulate fellow drivers who had squeezed past an Indian army munitions convoy. He underestimated the gap between a truck full of ammunition and nearly blew up his vehicle as it scraped the length of the truck. Sparks flew into the air as metal smashed on metal, until he hit a large boulder and came to an abrupt stop. Passengers' remonstrations to the tour organiser, conditioned to reckless driving, only brought an amused, uncaring, response.

Many travellers have a cavalier attitude to their vulnerability regarding road travel while overseas, which is unrealistic in terms of risk, and all the more remarkable in terms of admitted travel fears to another transport mode-air travel. Perceived risk may not be the same as actual risk.In a large survey few people stated that they had worries about road travel while abroad. Twenty per cent, admitted to considerable anxieties experienced about flying.[10] Yet flying is a remarkably safe form of transport with only one accident reported per half million flights. According to Trevarthen being killed in an RTA is 1000 times more likely than in a flying accident.

Compared with being in an air-travel accident, the traveller is:

- Four times more likely to have a chance accident
- Eight times more likely to suffer mishap while out walking

- Eight times more likely to be involved in a boating incident
- Ten times more likely to have an accident at work[11]

High risk Groups
Children using bicycles, **young adults** hiring motor-cycles, mopeds, scooters and bicycles have high acci-dent rates and **the elderly** are also at particular risk. Older drivers find it more difficult to judge speed, intentions and directions of other road users and are more likely to have problems with a change of environment. About 21% of all car drivers killed on the road in UK are over 60 years of age.[8] The risk of fatality or serious injury increases with older age.[9] Young adults are more likely to drive under the influence of drink while abroad, are less likely to wear helmets on bicycles or motor bicycles while overseas and often fail to check the roadworthiness of hired vehicles. Smaller children unaccustomed to different road rules and at play are also more likely to become casualties in unfamiliar surroundings. Those who become involved in sports activities while abroad are at high risk. In many parts of the developing world client safety is ill considered by watersport, climbing, bungee jumping, paragliding and quad biking agencies. Safety precautions are absent, not considered, or ignored.

A new form of individual vacationer transport, the personal Segway machine, is a dangerous platform for the unsteady, the elderly and those with poor balance.[12] The Segway PT is a two-wheeled, self-balancing transportation machine. Computers and motors in the base of the device keep the Segway PT upright. A user commands the Segway to go forward by shifting weight forward on the platform, and backward by shifting weight backward. These are an attractive mode of transport for older travellers with a reluctance to walk very far. They can do 12 miles per hour and are appearing in many holiday resorts over-seas, without sufficient attention being paid to pedestrian safety. Injuries and deaths can be a price to be pay for innovation.[13]

Emergency aid response
If an RTA involves the individual abroad, they may be fortunate enough to be treated promptly by doctors or paramedics and be whisked to an emergency unit with intensive care back-up. Even in developed parts of Europe and North America however, good trauma care systems may be some distance away however Geography and location can present obstacles to the speediness and quality of care rendered to the injured.[8] In many parts of the world, emergency medical aid is far from immediate. A European was badly injured in a RTA in the hinterland of Jamaica. Transport to a distant clinic with emergency facilities was only possible after an unwilling passing taxi driver was paid detour across the island.

Travel health insurance cover is only partly protective. It is only as good as the proximity of facilities, their quality and that of their staff. In many parts of the world hospitals can be distant and lacking in equipment, medication and trained staff. Blood for transfusion may not be available or, if stored, may be suspect in terms of HIV infection. Reusable needles and giving-sets are at a premium and a badly injured RTA victim is in no position to oversee the quality of care, sterility of equipment and blood products.

Recommendations
- Travel clinic personnel should advise on the risks of and from, trauma while people are abroad.
- Provision of simple advice and instructional leaflets may save lives and morbidity.
- Gap year students, teenagers and young male and elderly travellers should be specifically targeted

Health Professional Advice should cover
- Identification of risk,
- Risk assessment,
- Evacuation
- Proximity of emergency facilities,
- Quality of care,
- Repatriation
- Travel health insurance protection

Recommendations for travellers

- Hire roadworthy vehicles
- Hire vehicles with safety features such as seatbelts and child seat restraints and check efficacy
- Wear helmets on scooters , motor bikes and Skegways
- Avoid of driving on unlit, unmade roads after dark in developing countries
- Consider hazards related to blood transfusions while overseas
- Remember paucity of proximal casualty facilities in many areas.
- Consider that holiday locations lack first aid equipment and trained d staff to deal with RTAs

- Keep in mind dangers of driving when suffering from jet lag and under the influence of alcohol
- Personally check equipment to be used in sporting activities away from home

Summary
Travel affected trauma brings mortality, morbidity and returning travellers who can be a burden on health resources. The travel industry and travel clinic personnel should ensure that tourists and business-men are aware of traumatic risk and encourage world travellers to be proactive in pursuance of personal safety. Exhortations to travel safely may save more lives than prevention of infection while people are abroad. Educational effort by travel health profession-al working in travel clinics and with the travelling public can help to address the distorted individual awareness of risk and vulnerability. High-risk groups should be targeted for special advice about RTA possibility while abroad.

Ian Mackay is a former GP. and repatriation physician, with a special interest in risk assessment.

References:

1 McIntosh I Travel and Trauma. Travel Medicine International 1997 Vol 15.1.
2 Office Nat Stats. Internat. Passenger survey. 2007/8 London.
3 Boutineau C. Pathologies in medical evacuationIntternat. 1994.Soc. Trav Med. 3rd. Internat Trav Conf. report.
4 Fairhurst R.J Accidents and travellers *J. Trav. Med* 1994 12.161.
5 Campaign of Action for Road safety. Report 2011 United Nations Commision. Geneva.
6 Trends in Modal Shift: An analysis of the British Social Attitudes Survey.2007 RAC Foundation London.
7 Petridou Epidemiology of road accidents during pleasure travelling. 1997Accid. Anal.Prev. 687-93.
8 McIntosh I Chap 3Travel and Health in the Elderly 2011 Brit Trav. Health Assoc.
9 Frame J. Lange R Mortality trends in American Missionaries. 1992 Amer. *J. trop. Med.* 42 686-90.
10 McIntosh I. Travel illness and the family practitioner, 1998 *J. Trav. Med.* 1(4) 192-7
11 McIntosh I Elderly travellers and fitness to travel. In Travel Medicine and migrant Health 2000 Ed Lockie C Churchill Livingstone. London.
12 Schwartz, J "On the Pavement, a New Contender". 2003. *New York Times.* 2003-01-23).
Status report American Council of Blind http://www.acb.org/pedestrian/segway020806.html