

Executive Summary

“Death on wheels” evokes a bleak image, but an appropriate one for countries in the World Bank’s Europe and Central Asia (ECA) Region.¹ A combination of weak road safety management capacity, deteriorated roads, unsafe vehicles, poor driver behavior, and patchy enforcement of road safety laws, alongside exponential growth in the number of vehicles, have contributed to road traffic injuries and fatalities multiplying at a rapid pace.

This report provides an overview of the challenges and opportunities in addressing road safety in the ECA Region. It presents information on the size, characteristics, and causes of the problem; presents evidence on the effectiveness of measures that countries world-wide have adopted to improve road safety; briefly describes current international road safety policy; and discusses a range of strategies and actions that could be undertaken by the World Bank in coordination and partnership with the World Health Organization (WHO), multilateral development banks, other international agencies and donors, as well as with private and civil society institutions.

A primary audience of this report is internal—particularly managers and staff of the World Bank working in the transport, health, education, and governance sectors, *to raise awareness about the multisectoral nature of the road safety challenge and of effective options to address it. It proposes ways that the World Bank might engage more to support ECA countries in tackling this issue, working in partnership with other international agencies and donors. The secondary audience is external*—policymakers, senior analysts, program managers, and their advisers in the governments of ECA countries, private sector officials, and civil society and international organizations working in this field. The goal is to support discussion on appropriate choices and instruments for advancing the road safety agenda as a top development priority over the short and medium term.

To begin to address the problem of road traffic injuries and fatalities, country authorities, the World Bank, and international partners need to (Saghir 2009):

- Recognize that the scale of the public health crisis from death on wheels in low- and middle-income countries (LMIC) is unacceptable.
- Commit to implementing road safety measures that are: (a) sustainable, which requires proper sequencing and a long-term commitment; (b) integrated, which requires multisectoral and multidisciplinary engagement; and (c) inclusive, which takes into account country development objectives and recognizes that the poor and those thrust into poverty by road crashes have rights that deserve protection.
- Prioritize safe, clean, and affordable transport for development.
- Accelerate knowledge transfer and scale-up road safety engagement and investments.
- Understand that the World Bank, in partnership with other other institutions, could play an important role in supporting governments to raise the political importance of road safety as a development priority and in designing and implementing programs and projects over the medium term to achieve road safety targets. This in turn will help raise the importance of road safety in country and regional assistance agendas of other international agencies and among the donor community.

¹ Countries of the Former Soviet Union, the Baltics, the Balkans, Eastern and Central Europe, and Turkey.

The Nature of the Problem

Most passenger and goods traffic uses roads (for example, close to 80 percent and 50 percent, respectively, in the European Union). Rising incomes in many developing countries have led to more motor vehicles and greater traffic volumes, but road safety management capacity, road infrastructure and enforcement of traffic safety regulations have not kept pace. As a result, road traffic injuries (RTIs) have become a major public health challenge in many low- and middle-income countries (LMICs), including in ECA. About 90 percent of the 1.3 million deaths and 50 million injuries from road traffic crashes worldwide each year occur in LMICs, although these countries have only 48 percent of the world's registered vehicles (WHO 2009a). Increasing motorization and urbanization in LMICs could double this toll by 2030. The difference between low- or middle-income countries and high-income countries—where many road deaths still occur—is stunning.

The ECA countries have experienced rapid growth in the number of passenger cars on the roads over the last two decades. In the Commonwealth of Independent States (CIS) there was a 120 percent increase in passenger cars per 1,000 persons from 64 in 1990 to 141 in 2003 (UNECE and WHO EURO 2009). Similar trends are observed in countries in South-Eastern Europe: an increase from 18 passenger cars per 1,000 persons in 1994 to 48 in 2002 in Albania, and from 143 to 276 in Croatia. However, there are still far fewer cars in most ECA countries than the typical range of 400 to 600 in Western Europe (UNECE and WHO EURO, 2009). Increased reliance on private cars for transport in ECA is reflected in the smaller increase in the number of buses (Eurostat 2007). Vehicles in many ECA countries, particularly in the CIS, tend to be old and have substandard safety features. Cross-border trade in cars considered too unsafe, old, or polluting for Western European countries exacerbates this problem. Length of roads (in 1,000 km.) and highways (in km.) has also increased since the 1990s, by 18 percent and 157 percent in the CIS, 21 percent and 75 percent in EU-10 countries², and 46 percent and 144 in South-Eastern Europe, respectively. In spite of significant investments in road infrastructure since the 1990s, in some CIS countries the road infrastructure suffers from poor maintenance and under-investment. The population in the CIS travels 800 km per capita by car, as compared to more than 12,000 km per capita in Western Europe.

While road traffic fatalities have declined steadily in Western Europe, to below 6 fatalities per 100,000 in the Netherlands, Sweden, Switzerland, Norway, and the United Kingdom (2006), deaths from RTIs have increased in most ECA countries in spite of the smaller car fleet and relatively low number of km travelled per capita by car. RTI deaths in ECA in 2007 showed increases ranging from 8 percent to 39 percent. In 2007, there were an estimated 80,000 reported traffic deaths in ECA countries, where RTIs are already among the top 10 causes of death. Besides deaths, the societal toll of RTIs in ECA is also reflected in more than 800,000 nonfatal injuries that occurred in 2007,

RTIs negatively affect economically productive age groups: 55 percent of road traffic deaths in ECA countries are among people aged 15–44, mostly among those aged 15–29; more than 80 percent of these deaths are men. Alcohol misuse is linked to increases in traffic fatalities and differences in death rates between males and females. Children and the elderly are also vulnerable on the roads, especially as pedestrians, and are seven to nine times more likely to be killed in a road crash than car occupants.

The proportion of deaths among different road users varies from country to country, reflecting differences in exposure and safety. The majority of road traffic fatalities in ECA occur among motorized four-wheeler occupants. However, pedestrian fatalities are also very high in several ECA countries,

² The 10 countries which joined the EU in 2004: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

accounting for 40 percent or more of total road fatalities in Albania, Belarus, Kyrgyzstan, Tajikistan, and Ukraine.

Risk Factors

The main risk factors for RTIs are:

- Road design features, including those that expose vulnerable road users when mixing with traffic (for example, due to lack of crossings or walkways).
- Lack of effective regulation and enforcement of required vehicle condition, driver’s education and training, and risky behaviors.
- Driver behavior: speeding; recklessness; drinking and driving; not using seatbelts, helmets, and other protective equipment; and using mobile phones, especially texting.

Economic Cost of RTIs

The RTI epidemic has negative effects on individuals, societies, and health budgets. Worldwide, the cost of road deaths and injuries is estimated at about 1 percent of Gross National Product in low-income countries, 1.5 percent in middle-income countries, and 2 percent in high-income countries. The total costs to governments exceed US\$500 billion annually. In ECA, the highest costs are in the large economies with sizeable populations: Russia (US\$34 billion per year), Turkey (US\$14 billion), Poland (US\$10 billion), and Ukraine (US\$5 billion). In addition to death and disability from road crashes, hazardous road conditions restrict citizens’ mobility and opportunities to lead healthy, active lives, aggravating the risk of developing non-communicable conditions such as cardiovascular diseases and diabetes and contributing to increased obesity rates.

How to Tackle this Problem?

An effective road safety strategy requires a multisectoral, “safe system” approach. It needs a lead agency to coordinate contributions by the many government departments across which road safety responsibilities tend to be diffused: transport, interior, police, health, and education, among others. The goal is to prevent the occurrence of injury, minimize the severity of injury when traffic injuries occur, and reduce the severity of injury in the aftermath.

Road safety must be integrated into the design of transport plans and programs and considered in broader public policy discussions that influence people’s transport options and decisions. When road safety becomes an integral part of transport policy, the benefits of reducing noise and air pollutants, controlling alcohol abuse, and promoting walking and cycling become apparent. For example, maintaining lower speeds reduces the costs of injuries and also the costs from air pollution, greenhouse gas emissions, noise, and fear-based barriers among would-be pedestrians and cyclists.

ECA Efforts to Prevent Road Transport Injuries

Many ECA countries have structures and processes in place to address RTIs, including institutional frameworks where lead agencies coordinate the national response, funding in national budgets, and national road safety strategies with measurable targets. National laws set speed limits, regulate driving under the influence of alcohol, and mandate the use of safety equipment. In addition, many ECA countries require formal audits of major road construction projects and regular audits of existing roads — many follow the EU Directive mandating audits for all investments in core road networks—and have policies promoting public transportation, walking, and cycling. Formal, publicly available pre-hospital care systems for post-crash medical care are in place, albeit with varied quality.

In spite of progress observed in ECA countries, additional and scaled-up efforts and resources are needed to remedy the significantly worse road safety performance (including in countries that are now part of the EU) than their counterparts in Western Europe.

Experience from high income countries (HICs) and other middle-income countries shows that improving road safety requires a consistent, 20-to-30-year effort to develop and implement comprehensive, integrated safe system programs, under the coordination of a well structured and funded, technically and operational competent, lead agency. Business planning processes and performance monitoring systems must be developed and strengthened to support a long-term strategy, and the first phase of a strategy should foster consensus among stakeholders and public sector agencies on a long-term action plan based on demonstrably successful interventions. A financing plan for implementing the strategy should be specified. Support should be provided to develop a program of road user education, traffic safety enforcement and emergency preparedness along a first set of demonstration corridors. Certainly efforts to reduce corruption, lack of transparency, and lack of credibility and public trust of road police should improve.

The excessively large numbers of deaths and injuries in ECA countries are evidence of the need for international support for implementing a safe systems road safety approach over the short and medium term.

Scaling up implementation of the recommendations of the 2004 World Report on Road Safety: what needs to be done in ECA?

The findings of this landmark report (Peden and others 2004) led to six over-arching recommendations that set out the strategic initiatives necessary to improve country road safety performance:

- Identify a lead agency in government to guide the national road safety effort.
- Assess the problem, policies and institutional settings relating to road traffic injury, and the capacity for road traffic injury prevention in each country.
- Prepare a national road safety strategy and plan of action.
- Allocate financial and human resources to address the problem.
- Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences, and evaluate the impact of these actions.
- Support the development of national capacity and international cooperation.

Implementing these recommendations at country level requires building capacity, to create the resources and tools necessary to implement target initiatives on a scale capable of reducing road deaths and injuries significantly and sustainably. It also requires an integrated framework that treats the recommendations of the World Report as a totality, and ensures that institutional strengthening initiatives are properly sequenced and adjusted to the absorptive and learning capacity of the country concerned (Bliss and Breen, 2009).

A systematic response is needed. Managing for improved road safety results at country level must address three inter-related elements of the road safety management system: institutional management functions, interventions, and results; with prime importance being placed on institutional management functions and more specifically the role of the lead agency. *Interventions alone will not suffice.*

Building institutional management functions requires:

- *Strengthening institutions and governance capacity for RTI prevention*, including lead agency capacity, targeting evidence-based training of senior policymakers, executive managers in the various relevant sectors, and ministry focal points and practitioners, especially in transport, justice, traffic police, and health. Creating space for civil society and private sector participation has the potential to galvanize political support on the basis of well-articulated social demands from communities that bear the burden of RTIs.
- *Improving nationwide traffic injury surveillance systems* to better map the causes, risks, extent, and consequences of injuries; to pinpoint risks for more effective action; and to evaluate the effectiveness of those actions.
- *National road safety reviews are a sound basis for formulating policies and plans*. These reviews help identify main risk groups and exposures to determine priorities, set realistic targets, allocate budgets, specify implementation responsibility, and ensure rigorous evaluation.

A focus on results requires:

- *Integrating road safety in all phases of planning, design, and operation of road infrastructure*. At the planning stage, before project approval, strategic comparative analysis of substantial changes and new construction need to be conducted to examine the network's safety performance. Road safety audits and safety impact analyses complement these assessments focusing on the design characteristics of a road infrastructure project. In addition, reviews of high road traffic crash concentration sections need to be undertaken to help target investments to road sections with the highest crash concentrations and/or the highest crash reduction potential.
- *Reducing speed limits, particularly in urban areas*, and strengthening these efforts with road design, enforcement, publicity, speed cameras and appropriate penalties, to generate immediate safety benefits.
- *Reducing drinking and driving*. Given the relative importance of alcohol abuse in some ECA countries, broad alcohol-control policies, fiscal measures, and interventions are required to support the long-term sustainability of road safety efforts. Blood alcohol limits need to be aligned with international practice and priority given to systematic general deterrence-based police enforcement with severe penalties.
- *Increasing seatbelt use* through enforcement and publicity campaigns, revising specifications (at least for new cars), promoting vehicle seatbelt reminder systems, and undertaking periodic surveys to monitor front and rear seatbelt usage rates.
- *Reducing young driver risk* through graduated licensing schemes and extended training programs.
- *Improving emergency medical systems* as part of broader health system modernization efforts to reduce fatalities and mitigate injuries.
- *Integration of road safety and transport policy*. Recent research indicates that improving transportation options (for example, better walking and cycling conditions, and improved ride sharing and public transport services) can reduce car collision frequency.
- *Designing demonstration projects*. Well-designed demonstration projects can support the process of catching up with best practice in road safety performance and are an essential part of building

capacity. They can provide useful benchmarks for rolling out a modern road safety program to the rest of the country with support from donors and international finance organizations.

The World Bank's Role

To advance the road safety agenda, the World Bank co-founded the Global Road Safety Facility in 2006 with other partners. The Facility works with international partners to provide funding and technical assistance to scale-up LMIC capacity to implement cost-effective road safety programs.

Road safety is routinely a key component in World Bank road infrastructure projects. For example, recently approved projects in Bosnia and Herzegovina, Bulgaria, Georgia, Poland, and Ukraine include pilot measures (and monitoring), such as road safety reviews, strengthening capacity of national road safety authorities, improving safety features of road infrastructure, tightening enforcement, and public campaigns for safer driving. In Vietnam, a World Bank-supported project dedicated to road safety and complementing related initiatives supported by other international agencies is enabling the government to achieve good results (for example, unprecedented enforcement of a new law mandating motorcycle helmet use is contributing to reducing road traffic fatalities). This example of a multisectoral approach includes institution- and capacity strengthening, physical road improvements, user education, and monitoring and evaluation. The new road projects in Georgia are trying to emulate this approach and apply it to specific road corridors. World Bank projects in Russia and other countries have engaged the health sector to reorganize and strengthen emergency medical services to improve care for RTI victims.

The World Bank, working with international partners, could support ECA countries in their effort to reduce road crash fatalities during 2010–16 by exploring options to support the identification, selection, design, and implementation of actions most likely to prevent road crashes and improve road crash emergency and rehabilitation services. Some ECA countries, as members of the EU, have the opportunity to deal with the RTI challenge through that membership. And, since non-EU ECA countries may not have the same opportunity, the support that could be provided by the World Bank would follow a tailored approach.

As seen in ongoing U.S.-supported efforts under the Recovery and Reinvestment Act of 2009, programs being funded by governments in different countries to reactivate economic growth and employment offer a “*window of opportunity*” to scale-up and improve road safety in ECA. This implies that investment directed to roads and highways should incorporate safety features and be coupled with support for implementing existing road safety plans.

On the basis of priorities set by ECA countries and taking into account the individual circumstances of each country, the World Bank could provide an assistance program that advocates greater investment in certain road safety initiatives, taking into account evidence-based, cost-effective approaches and international best practices, evidence from modeling exercises, extrapolation of the impact of different interventions for improving road safety, and available economic evidence.

Following the recently-issued World Bank guidelines for implementing the recommendations of the 2004 World Report (Bliss and Breen 2009), programs could concentrate on the following areas:

Capacity review. The conduct of a safety management capacity review is a vital first step in the process of a country tailoring the World Report recommendations to its unique circumstances. The review can help a country determine its readiness to commit to the productive and sustainable steps necessary to improve road safety outcomes. It also identifies related institutional responsibilities and accountabilities and provides a platform to reach an official consensus on country capacity weaknesses and how best to overcome them.

Role of lead agency. The World Report highlights the fundamental role of the lead agency in ensuring the effective and efficient functioning of the road safety management system. Responsible and accountable road safety leadership at country, state, provincial and city levels is vital to success. In the absence of such leadership with a sustained focus on results, improvements, for example, in program coordination, decentralization and promotion will often be elusive and unsustainable. Likewise, action plans prepared without a designated agency mandated to lead their implementation and a realistic and sustainable funding base are likely to remain paper plans and make no positive impact.

Staged investment. Countries wishing to improve their road safety performance must be well organized to achieve improved results in a systematic way. Institutional management functions must take the highest priority as the foundation on which road safety management systems are built: they produce the interventions that achieve the desired results. In practice, institutional strengthening must be staged. During the formative stages, emphasis must be put on improving the focus on results and related inter-agency coordination. As these institutional management functions become more effective, the remaining management functions are in turn strengthened.

Learning by doing. Sustained long-term investment is the key to improving country road safety results. This requires a staged process of investments that address revealed capacity weaknesses, first building core capacity to achieve initial targeted safety outcomes, then scaling up investment to accelerate capacity strengthening and achieve improved results across the national road network. Building upon the findings of the country capacity review, investment must be grounded in learning by doing, backed with sufficient targeted investment to overcome the barriers presented by weak institutional capacity.

One way to operationalize this approach would be to support the design and implementation of *safe system demonstration projects* that aim to anchor country capacity building efforts in systematic, measurable and accountable investment programs that simultaneously build management capacity while rapidly achieving safety improvements in targeted high-risk corridors and areas.

Demonstration projects could be located in distinct geographic areas where road safety issues vary in nature: (a) in a densely populated urban area within a major city, for example, Baku, Kiev, Moscow, St. Petersburg, and Tbilisi; and (b) along a high-speed and highly trafficked highway, for example, Moscow-St. Petersburg, or any other with a high rate of road crashes. Particular attention could be devoted to exploring links and synergies with transport policy options to mitigate the effects of climate change through reduced greenhouse gas emissions – this would garner additional support for policies to reduce speeding and a modal shift toward safer, cleaner transport modes. In addition, this is an important area for synergy with other health policies and programs, and with other international agencies and donors.

The objective of the *demonstration projects* would be to: (a) field-test a road safety improvement strategy that implements a combination of preventive safety engineering measures and legal and regulatory measures to reduce urban speed limits to 50 km/h; and (b) encourage local authorities to impose 30 km/h limits in highly populated areas and to strictly enforce key safety behaviors concerning speed, seatbelts, and alcohol, supported by high-intensity public education campaigns and strengthened emergency medical care services.

Combined with the development of lead agency capacity that would operate a continuous, detailed monitoring and evaluation system, the demonstration projects would generate benchmark performance measures. This would allow successful interventions to be extended to the rest of the country within a reasonable time frame, for example, five years. In some countries, this effort would also require a clearer distinction of what is possible at local, regional, and national levels and their respective responsibilities and related policy options and interventions, particularly since the World Bank is starting to work at the sub national level.

Why Now?

The time to support concerted efforts to make roads safer in ECA has arrived. Growing urbanization, poor road conditions, accelerating growth in the number of vehicles, patchy efforts to legislate and enforce road safety measures, and increases in the rate of road injuries and fatalities, present a real threat. Investing in effective interventions under a safe systems approach as suggested in this report would reduce premature mortality and disability, which contribute significantly to the demographic decline in countries such as the Russian Federation and Ukraine. It would also support human capital accumulation, a key factor for sustainable economic growth in ECA and elsewhere.

Call to Action

This report provides evidence that road traffic safety has tremendous implications for health, social welfare, and economic well-being in ECA countries. Road traffic injuries are a major cause of death and disability, in particular afflicting children, adolescents, working-age men, and the elderly. The report argues that accumulated evidence from country experiences worldwide reveals promising measures that would strengthen institutions, laws and regulations, policies, enforcement mechanisms, and health service delivery systems to reverse deteriorating road safety conditions, save lives, and prevent injuries in the ECA countries.

The proposed road safety effort is fully consistent with and supports the World Bank's transport strategy of "*Safe, Clean and Affordable Transport for Development*" (World Bank 2008a), and the new World Bank guidelines for implementing the recommendations of the 2004 World Report (Bliss and Breen 2009c). It also supports the health improvement and poverty alleviation objectives outlined in the "*Healthy Development*" strategy for health, nutrition and population results (World Bank 2007a). These efforts are also consistent with the new strategic directions guiding the World Bank's overall work, particularly those of fostering regional and global public goods that transcend national boundaries and of cooperating with other agencies having special expertise (Zoellick 2008).