SECTION 3

Transport policies neglect pedestrians and cyclists
Governments need to make walking and cycling safe

Rapid economic development in many low- and middle-income countries has led to increased motorization. Since 2007, there has been a 15% worldwide increase in the number of motorized vehicles. Globally, there are now more than 1.6 billion registered vehicles – 47% of which are in high-income countries, 52% in middle-income countries and 1% in low-income countries (see page 5). Middle-income countries are motorizing most rapidly and now have more than half of the world’s registered vehicles, compared with 39% just three years ago. With increases in motorization, governments must balance their desire for increasing mobility with ensuring the safety of road users inside – as well as outside – motorized vehicles.

The increasing number of motorized vehicles makes roads more dangerous for those road users who use alternative modes of transport – notably those who walk, cycle and use motorcycles. In planning road construction projects, there has been insufficient attention given to preventing the negative effects of motorization from falling most heavily on these road users most at risk. For example, new multi-lane roads are often built to cut through communities without provision of safe routes and crossings for pedestrians, slowing traffic speeds, or dedicated lanes for cyclists (45).

In a number of countries, there is a growing policy interest in encouraging a better balance between private motorized transport and non-motorized transport. While such policies may be national, they are usually implemented at the subnational or municipal level. For example, some countries have national transport policies that aim to reduce traffic volume in urban areas by promoting walking and cycling, which mitigates congestion and thus improves mobility (see Box 8).

Policies to encourage walking and cycling need additional criteria to ensure the safety of these road users. Encouraging children to walk to school without providing pavements or safe places to cross the road, or reducing the speed of traffic, could in fact lead to increased injuries. Promoting city cycling to reduce congestion cannot be encouraged if cyclists repeatedly find that their lanes cut across oncoming traffic. Measures to separate walkers and cyclists from other road users in conjunction with speed management interventions are particularly important if such policies are to be successful.

There has been some progress in implementing national or subnational policies to promote walking and cycling, with 68 countries having such policies (compared to 57 in 2008). However, only 79 countries have policies to protect vulnerable road users by physically separating them from high-speed road users. As a result, many countries attempting to encourage walking and cycling as viable alternatives to motorized transport do not have infrastructure policies in place to ensure that walking and cycling are safe, and could potentially increase risks for road traffic injuries (see Figure 21).

Infrastructure measures separating road users are also important to protect motorcyclists and are thus highly relevant to many low- and middle-income countries with high proportions of deaths among these road users. For example, a third of road traffic deaths in the Western Pacific Region occur among motorcycle users, yet only 36% of this region’s Member States have policies in place to protect motorcyclists by separating them from high-speed traffic.

Countries that can effectively reduce private motorized vehicle use, increase the appeal of walking and cycling and make associated infrastructure improvements to protect pedestrians and cyclists can reduce the risk of road traffic injuries. Additional co-benefits can also result from such policies, including reduced air pollution and greenhouse gas emissions, reductions in traffic congestion, and beneficial health outcomes associated with increased physical activity from walking and cycling.

1 Such measures include pedestrian lanes that have a protective barrier beside them, and lanes for cyclists, but may also include separate lanes that keep motorcycles away from high-speed traffic. As such they can impact all three types of vulnerable road user.
BOX 8. NEW YORK CITY: PEDESTRIAN SAFETY

New York City has made huge strides in reducing traffic fatalities, with its streets among the safest in the world. In 2009, 258 people lost their lives in road traffic collisions – a record low. Despite this impressive progress, pedestrians still account for 92% of all traffic fatalities. In August 2010, the New York City Department of Transportation published results of a pedestrian safety study which included data from over 7000 severe and fatal pedestrian injury collisions over eight years. One or more of the following factors were found to contribute to pedestrian-involved collisions:

- Driver inattention (36%)
- Drivers failing to yield to a pedestrian (27%)
- Pedestrians crossing against the signal (20%)
- Speed (21%)
- Intoxicated drivers (8%)

To address this issue, the Mayor and Commissioner of Transportation called for a more aggressive safety approach which includes an ambitious target to reduce annual traffic fatalities by 50% by 2030. This would save approximately 1800 lives over two decades.

The action plan focuses on a combination of highly targeted engineering, enforcement and public information and education measures. For example, the plan would install pedestrian countdown signals at 15,000 intersections citywide, implement 75 additional 20 mph (32 km/h) school speed zones and implement Neighborhood Slow Zones in several city communities where the speed limit will be reduced to 20 mph (32 km/h). Public information campaigns and enforcement to target speeding along major traffic corridors and failure-to-yield prone intersections are also included in the plan.

Safer roads reduce crash likelihood and severity

Road infrastructure projects are generally associated with increasing the mobility of motorized vehicles. However, ensuring implementation of a number of safety measures when road infrastructure projects are designed – and facilitating their implementation during construction with earmarked funding – can produce important safety gains for all road users. This is particularly true when road design, construction and maintenance are underpinned by a Safe System approach, i.e. where allowances are made that can help compensate for human error, and roads and roadsides are built in such a way that their physical characteristics minimize potential harmful consequences to all (40). This could include incorporating speed management measures in road infrastructure projects, such as traffic calming intended to limit the impact of a crash.

Road engineering and design can also influence the risk of crash involvement and the severity of crashes that do occur. The design of new road construction projects should be checked to ensure that implementation will meet safety standards and to see if further design changes could prevent crashes. Already, 140 countries (77%) carry out some type of road safety audit on new road infrastructure projects. Existing road infrastructure should also be assessed for safety at regular intervals, with a focus on roads with the highest crash risk. An essential element of the road safety audit process is that it should be carried out separately by an independent authority (i.e. separate from the road designer or construction company), so that there is no conflict of interest. Most countries (78%) carry out inspections on existing infrastructure projects (either on all or parts of their networks), but only half of these have assessments carried out by agencies independent from the bodies involved in the construction.

More needs to be done by governments to make their road infrastructures safer. Only 63 countries meet all three criteria specified here – that is, they carry out road safety inspections on all new road infrastructure projects as well as on existing road infrastructure projects, and they ensure that assessments are conducted by independent assessors.

Best practice road safety audits include an assessment of safety for all road users, including pedestrians, cyclists and motorcyclists. Crash risks for all vulnerable road users (pedestrians, cyclists and motorcyclists) should be reflected in road safety audit and assessment results. For example, the International Road Assessment Programme (iRAP) safety assessments use their road inspection data to provide star ratings for roads, with five-star roads indicating the highest performance and lowest risk for injury.\(^1\) Star ratings are provided for vehicle occupants, motorcyclists, pedestrians

\(^1\) [http://www.irap.net/about-irap-2/star-ratings](http://www.irap.net/about-irap-2/star-ratings)
and cyclists, while countries’ roads are assessed for the percentage that meet certain star ratings for each type of road user. Data from low- and middle-income countries included in these assessments show that about half the roads assessed in these countries are rated in the highest risk categories (i.e. one or two stars), largely attributable to the fact that 84% of the roads assessed where pedestrians are present have no footpaths.

Public transport can make mobility safer and reduce congestion

Safe public transport systems are increasingly viewed as important to improving mobility safety, particularly in urban areas with increasing traffic congestion. In many high-income cities, there has been strong political emphasis on decreasing individual car use through investments in public transport systems (see Box 9). Investing in safe public transport is also seen as a mechanism to encourage increased physical activity and thus promote health. However, a critical issue associated with promoting such measures is the need to ensure that these modes of transport are safe.

Over 100 countries have national or subnational policies to invest in public transport (see Figure 21), although the safety of public transport systems was not evaluated. Public transport is considerably safer than private car travel in most high-income countries, but in many low- and middle-income countries with rapidly developing economies, growth in unregulated and unsafe public transport has led to increases in road traffic injuries among public transport users. Governments must ensure that public transport systems are safe, accessible and affordable. In this way reductions in congestion and improvements in mobility can be achieved concurrently with improvements in safety. Such a comprehensive approach is illustrated in a case study on Ahmedabad, India (see Box 9).

Figure 21
Proportion of countries with policies to encourage non-motorized modes of transport, by WHO region

Action is needed to make vehicles safer for non-car road users

Vehicle safety standards are one means of protecting those outside the vehicle. However, until recently, most emphasis in vehicle safety has been on protecting those within the vehicle (see Box 10). Since the late 1970s, crash engineers have known that, in addition to reducing vehicle speeds, changing the shape and stiffness of vehicle fronts would significantly reduce the severity of injuries sustained by pedestrians, cyclists and motorcyclists when hit by a vehicle.

Now there is a global standard for pedestrian safety, as well as innovative technologies such as bonnet airbags and crash avoidance systems (e.g. autonomous emergency braking) that offer the prospect of improved safety for vulnerable road users.
BOX 9. AHMEDABAD: BUSES REDUCE USE OF PRIVATE MOTORIZED VEHICLES AND ASSURE SAFER, CLEANER JOURNEYS

In 2001, 28% of India’s people lived in cities, but this is expected to rise to 40% by 2040. The immense scale of this urban demographic shift means that Indian cities will expand 200–400% in land area over the next two decades (46), with a concurrent increase in road traffic fatalities and traffic-related air pollution.

Approximately 175 road traffic fatalities occur each year on the city’s roads. But Ahmedabad is projected to grow from 5.4 million people in 2001 to 13.2 million in 2041. If the city expands into a low-density sprawl and private motor vehicles remain the main means of transport, road traffic fatalities are predicted to escalate to approximately 5000 per year, while pollution levels are expected to rise alongside this. However, if high-quality public transport is implemented and becomes a key mode of transport, a denser city may result, with additional benefits in terms of road safety and cleaner air levels. Considerably fewer road traffic fatalities would be expected in this “sustainable transport” scenario. This, in turn, is expected to lead to more walking and cycling, as shops and recreational facilities are located closer together. As a result, the need for motorized trips and the risk of road traffic crashes will be reduced.

Ahmedabad’s Bus Rapid Transit (BRT) system was opened in 2008, and currently covers 61 kilometres of network, carrying 140,000 passengers a day. A 16 km extension finalized in December 2012, and construction of a further 24 km, are expected to push the number of passengers to 400,000 a day. Since BRT’s opening, transport modes have shifted away from private vehicles to the BRT system, while the project has also achieved its objective of providing a safe mode of transport, with more than a 50% decrease in road traffic fatalities in the BRT corridor (46).
BOX 10. IMPROVING VEHICLE SAFETY STANDARDS

Making vehicles safer is an important component of efforts to reduce road traffic injuries, and over the past few decades there has been good progress in doing this. Measures to improve vehicle crashworthiness such as seat-belts, crumple zones and air bags have dramatically increased levels of occupant protection. The seat-belt alone is estimated to have saved millions of lives since its invention. Now technologies are being applied that can help prevent crashes in the first place. The anti-skid system electronic stability control, for example, is now increasingly required as a mandatory safety feature for new passenger cars and light duty vehicles. Measures intended to reduce the risk and severity of pedestrian impact are also becoming important in vehicle design as a way of protecting vulnerable road users.

At the international level, a range of minimum standards for vehicle construction are available through the UN Forum for Harmonization of Vehicle Regulations. Among the most important are standards for seat-belts and seat-belt anchorages, front and side impact resistance, electronic stability control and pedestrian protection. Governments must now work with vehicle manufacturers to ensure that increasing proportions of their vehicle fleets meet these standards to ensure a uniform and acceptable level of safety across the globe.

Furthermore, independent assessments of the safety performance of different models of cars – and dissemination of this information to consumers – have encouraged car manufacturers to produce cars that are much safer than those required by law. In many high-income countries, new car assessment programmes (NCAPs) have created a “market for safety” that has greatly improved vehicle safety levels. However, improving the safety level of fleets in low- and middle-income countries, many of which are experiencing dramatic economic expansion, remains a major challenge. Governments should insist that vehicles sold in their country are subjected to independent consumer crash testing through an appropriate new car assessment programme.

Source: UN Forum for Harmonization of Vehicle Standards (UNECE WP29) ECE regulations 14, 16, 34 and 95 and Global Technical Regulations 8 and 9.
BOX 11. REGIONAL/GLOBAL PROGRAMMES TO MOVE MANUFACTURERS TOWARDS SAFER VEHICLES: LATIN NCAP

Since 2010, the Latin New Car Assessment Programme (NCAP) has tested many of the best-selling cars in South America. The results show that the region’s most popular models are 20 years behind the safety advances of Europe and North America and would fail to pass the UN’s minimum crash test standards. The front impact tests carried out at 64 km/h reveal that poor structural integrity and the absence of airbags continues to put the lives of Latin American motorists at risk.

Latin NCAP has tested models both with and without airbags, and comparisons show that cars fitted with airbags offer significantly reduced risk of serious injury and death. In Latin America, where UN regulatory standards are currently not enforced, airbags have been offered only as an optional feature rather than as standard safety requirement, although they will be mandatory in both Argentina and Brazil from 2014.

Fitting airbags, although very important, is not enough. Latin NCAP’s results also revealed structural weaknesses in many cars tested. Body shell integrity is critical to protect passengers from being injured even if vehicles are fitted with airbags. Car manufacturers have developed “crumple zone” systems that protect car occupants in a survival space as other parts of the vehicle absorb the energy loads unleashed in a crash. The Latin NCAP tests reveal a number of models with body shells that fail to remain stable, which would be less likely in vehicles that meet the UN frontal impact test standard.

The latest Latin NCAP results released in November 2012 showed encouraging progress, with an increase in models achieving “four star” ratings, some manufacturers making airbags standard ahead of regulatory requirements, and improved performance in child restraint systems. These positive developments demonstrate that NCAPs can be an effective catalyst for improved levels of vehicle safety.

Source: www.latinnicap.com