

Safeguarding children on Welsh roads: the 20 mph policy and the road ahead

Samantha Turner,¹ Theodora Poulidou,¹ Richard Fry ,¹ Ian Walker,² Ben Beck,³ Oliver Thwaites ,¹ Ronan A Lyons ¹

Road traffic injuries (RTIs) are the leading cause of death for children and young adults aged 5–29 years worldwide.¹ In 2023, 59 children aged 0–15 years were fatally injured on UK roads, with a further 2337 seriously injured, equivalent to over a school class of children suffering serious, life-changing disabilities on a weekly basis.² Vehicle speed is a cornerstone of road safety as it directly increases both the risk of a collision and severity of injury. The introduction of the national 20 mph legislation in Wales on 17 September 2023 led to an additional 12 000 km of 20 mph roads (increasing from 2% to 37% of total road length) and represented a crucial shift towards prioritising the needs of vulnerable road users, especially children, over the convenience of faster, more dangerous driving speeds.³ However, the legislation was met with considerable public opposition, and in July 2024, new guidance was issued to enable select roads in Wales to be reverted to 30 mph. While it remains to be seen whether local authorities' fears of liability for future injuries will limit such increases, we believe these decisions must take a holistic view in which all likely impacts on the nation's children are considered.

20 mile per hour zones (which include traffic calming measures) and 20 mph 'sign only' speed limits (no traffic calming measures) have been introduced in countries across the world since the 1980s, chiefly to reduce vehicle speeds and subsequent RTIs but also to reap the wider direct and indirect benefits of slower vehicle speeds on health and well-being (eg, increased opportunities for active travel⁴ and improvements in respiratory diseases from improved air quality⁵). Critically, under similar driving conditions and average reaction times, the total stopping distance at 20 mph is less than the reaction

distance (distance before brake is applied) at 30 mph. In the event of a collision, the risk of severe injury to a pedestrian has been demonstrated to increase from 10% at an impact speed of 17 mph, to 25% at 25 mph, 50% at 33 mph, 75% at 41 mph and 90% at 48 mph.⁶ Children are particularly vulnerable as pedestrians, due to their underdeveloped physical, cognitive and social abilities, which make it more difficult for them to anticipate or react to road safety risks.¹ Further, their smaller stature increases their risk of severe injury and death in the event of a collision, with children living in deprived communities at much higher risk of RTIs.¹

In September 2023, Wales became the second country in the world, after Spain in 2021, to take the next leap in pedestrian safety and incorporate 20 mph into law. The Welsh Government introduced a national statutory 20 mph speed limit on all restricted roads (roads with street lights less than 200 yards apart).³ The main motivation was to reduce vehicle speeds, RTIs and fatalities, which in turn would lead to safer communities, encouraging more people to walk and cycle, helping to improve overall health and well-being.⁷ These aims align with both the UN Convention of the Rights of the Child and The Well-being of Future Generations (Wales) Act 2015, which place a duty on public bodies in Wales, to protect children from harm and ensure children's right to the highest attainable standard of health, now and in future generations. The implementation of the 20 mph legislation in Wales cost approximately £32 million. However, it was estimated in the first year alone that the direct cost savings from reduced road traffic casualties would amount to three times the initial implementation costs (£92 million).⁸ While current evidence points towards 20 mph zones (including traffic calming) being more effective than 20 mph 'sign-only' speed limits,⁹ 20 mph limits have gained traction in recent years due to growing research supporting their efficacy⁴ and their substantially reduced costs which enable them to be implemented over much wider geographical areas. While

20 mph limits can be further enhanced by additional road safety measures (eg, school streets initiative), traffic calming infrastructure and increased enforcement and compliance measures; default 20 mph limits create a cultural shift towards safer driving speeds and offer a proactive, universally applied approach that ensures equity in safety for all road users. It is important, alongside this legislation, that Wales continues to adopt the internationally acknowledged Safe Systems approach, which recognises the need for six key road safety elements to minimise risk: road safety management, safe roads and infrastructure, safe vehicles, safe road users, safe speeds and postcrash care. Further, it is crucial that sustainable transport infrastructure, accessibility and awareness are improved in Wales, to reduce the number of vehicles on roads.

Despite growing evidence on the benefits of 20 mph limits, the 20 mph legislation was met with significant opposition from both the public and politicians in Wales. A petition to repeal the law gathered a record number of signatures.¹⁰ Common concerns included the following: worsening air quality, enforcement challenges and increases in congestion and journey times. Walker *et al* discussed the importance of governments 'rolling the pitch' in the years prior to introducing divisive road policies, that is, building support by emphasising the harms caused by vehicles and focusing discussions around the intended policy benefits.¹¹ For example, in the years before the smoking ban was introduced, formal messaging about the harms of smoking and the importance of protecting vulnerable bystanders ensured the public were ready for the hard policy action. Improved public health messaging could help overcome 'motonomativity' bias (the societal bias which prioritises cars over all other forms of transportation) which often results in policies designed to slow vehicles being perceived as restricting driving choice, rather than increasing choice, safety and health for all road users. In other regions that introduced widespread 20 mph limits, public opinion was shown to shift in favour of 20 mph limits over time, through focused public health messaging.¹²

Transport for Wales, the Welsh Government and highway authorities are working together to assess the impacts of the default 20 mph limit in Wales by monitoring changes on a predefined list of 12 key performance indicators (KPIs),¹³ encompassing the following: speed compliance, journey times, change in

¹Population Data Science, Swansea University Medical School, Swansea University, Swansea, Wales, UK

²School of Psychology, Swansea University, Swansea, Wales, UK

³School of Public Health and Preventive Medicine, Monash University, Melbourne, Victoria, Australia

Correspondence to Professor Ronan A Lyons; r.a.lyons@swansea.ac.uk

pedestrian and cycling injury rates, modal shift from car to walking, changes in CO₂ and NO₂ emissions, and changes in public attitudes. Initial findings have been generally positive, with a 4.3 mph reduction in mean speed, with results for other KPIs yet to be reported (eg, casualty rates and CO₂ emissions, requiring a longer post-implementation evaluation period), or reporting marginal (eg, journey times) or no discernible change (air quality and modal shift).¹⁴ The latest police recorded collision statistics in Wales show the number of casualties on 20 mph and 30 mph roads (combined) in the summer period between July and September 2024 were the lowest in that period since records began in 2014.¹⁵

While the 20 mph monitoring framework will provide an important high-level assessment of this ground-breaking legislation, the KPIs are based on single indicators, derived from isolated datasets which can be vulnerable to missing data, limited confounder adjustment, lack of data validation, difficulties in establishing causation and limited ability to appreciate the wider systemic effects. For example, the KPIs focused on road casualties rely solely on police recorded road traffic collision data captured in the STATS V.19 dataset, a dataset that has long been recognised to suffer from under-reporting issues and changes in injury severity reporting over time.¹⁶ To ensure that the 20 mph legislation in Wales is comprehensively and effectively evaluated and that the longer-term health impacts and potential second-order and third-order effects are fully recognised, it is crucial that population-scale data linkage is harnessed to integrate and analyse key road safety, health, socio-demographic, travel behaviour and environment datasets. Secure data linkage platforms, such as the Secure Anonymised Information Linkage databank,¹⁷ which has previously supported national policy evaluations,¹⁸ could facilitate anonymised, individual-level data linkage of key datasets. These could include the following: police recorded road casualty data; road segment speed data; routinely collected GP and hospital records; self-reported travel behaviour; census data characterising population subgroups; and air pollution and other environment data, such as the natural and built environment surrounding an individual's residence and on their route to school or work. Enabling these crucial linkages within such a privacy-protecting data environment would enable the construction of robust, longitudinal research study designs, such

as difference-in-difference approaches, or cross-cohort comparisons with neighbouring UK countries, to mitigate for simultaneous changes in modal shifts and e-vehicle use.

The Welsh Government has recently introduced a framework to support highway authorities in returning select roads to 30 mph.¹⁹ Some authorities have indicated that large numbers of roads will be returned to 30 mph while others will change few, if any. This opens up the possibility of evaluating the impact of both a decrease and increase in speed limits in these locations with robust control sites.

To conclude, the default 20 mph legislation in Wales is a move in the right direction for child pedestrian safety and represents a crucial shift prioritising the rights of children over motorists. That said, it is not a one-size-fits-all solution. It is crucial Wales adopts a holistic 'Safe Systems' approach to road safety, while simultaneously improving sustainable transport options to help reduce the number of vehicles on Welsh roads. If the benefits of the 20 mph policy prove to be as anticipated by the underlying science, the imminent reversal of this policy on select roads across Wales could potentially jeopardise the future safety and well-being of children in these areas. At this pivotal moment of policy fluidity, it is important that rigorous research into the direct and indirect impacts of the 20 mph legislation is supported to ensure that future road policy decisions in Wales are driven by robust, reliable evidence that protects children now and in the future.

X Richard Fry @richfry and Ben Beck @drbenbeck

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ORCID iDs

Richard Fry <http://orcid.org/0000-0002-7968-6679>

Oliver Thwaites <http://orcid.org/0000-0003-3010-441X>

Ronan A Lyons <http://orcid.org/0000-0001-5225-000X>

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