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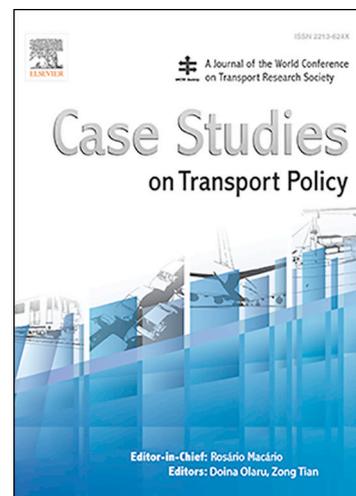
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The processes of transport and public health policy change: 20mph speed limits in Edinburgh and Belfast.

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Abstract

Background: In 2016, large scale 20mph speed limits were implemented in the cities of Edinburgh (Scotland) and Belfast (Northern Ireland). The fact that both cities succeeded in implementing 20mph speed limit interventions is important. They illustrate the *processes* of

transport and public health policy change. This paper describes how 20mph speed limit interventions became a reality in the two cities.

Methods: We adopted a qualitative case study method. Data were collected from available documents and interviews with stakeholders involved in the pre-implementation processes. Documents and interviews were analysed inductively using thematic analysis, and separately for each city.

Results: Five main themes were generated through the analysis: the national policy context of the two cities; political leadership; support for 20mph; opposition; and the key actions involved prior to implementation.

Conclusions: In both cities the process took place over at least a ten year period and was piecemeal. However, the gradualist approach proved successful in gaining support for the schemes and minimising political and public backlash. These examples of policy success in Edinburgh and Belfast provide useful learning for other jurisdictions planning or thinking about similar transport and public health policy changes.

Word count: 5653

Keywords: policy, decision-making, 20mph

1. Introduction

In recent years, there have been approximately 25,000 killed or seriously injured casualties annually on Britain's roads, of which about 1,800 per year were deaths (Department for Transport, 2017a; 2018; 2020). When considering casualties of all severities, over 150,000 people are injured on Britain's roads each year (Department for Transport, 2017a; 2018;

2020). These events are considered to be largely preventable, through the implementation of appropriate transport and public health policies (World Health Organization, 2018).

The past fifty years, in particular, have seen vast improvements in road safety due to changes in legislation and policy, including the introduction of drink driving and seat belt legislation (UK Parliament, 1967; Department for Transport, 2017b; Febres et al., 2020). A more recent initiative to improve road safety, which has been trialled in several parts of the United Kingdom (UK) and continental Europe, is 20mph speed interventions (Cleland et al., 2020). These speed reduction interventions have taken two forms, 'zones' and 'limits' (Cleland et al., 2020; Milton et al., 2021). ~~'Zones' have been more commonly applied and involve the installation of physical infrastructure such as speed bumps or chicanes.~~ 'Limits' involve the installation of 'signs and/or lines'; 'zones' additionally involve the installation of physical infrastructure such as speed bumps or chicanes ~~without any other physical traffic calming infrastructure~~ (Milton et al., 2021).

Public policies and formal institutions tend to have a natural inertia, making them difficult to change and encouraging policy continuity (Pierson, 2000). However, policy change was achieved in the cities of Edinburgh (Scotland, UK) and Belfast (Northern Ireland, UK) in 2016, when large scale 20mph speed limit interventions were implemented. Edinburgh introduced a city-wide 20mph speed limit policy between July 2016 and March 2018. Approximately 50% of streets in Edinburgh were already 20mph; the aim was for this to be increased to 80% of streets, with the remaining 20% of streets – mostly arterial – maintaining a 30 or 40mph limit. Belfast implemented 20mph speed limits on 76 streets in the city centre. This was in the part of the city with the highest levels of pedestrian movement, cycle activity and

bus facilities. The 20mph streets in Belfast were surrounded by a network of 30mph and 40mph streets.

The fact that both cities succeeded in implementing 20mph speed limit interventions is important because they illustrate the *processes* of transport and public health policy change. While the case for fewer collisions and casualties, better air quality, safer streets for pedestrians and cyclists, and more liveable communities, may be well established epidemiologically (Cohen et al., 2014), if authorities are unable to get 20mph speed limit interventions onto the agenda and gain support, implementation will never occur, and the benefits will not follow.

The aim of the research reported here was to explore how 20mph speed limit interventions became a reality in the two cities. Specifically we were interested in understanding the actions and processes involved, and in identifying key characteristics associated with success. Success here is defined as policy change, as opposed to the effects of the intervention itself in terms of collisions and casualties - those data are reported elsewhere (Milton et al., 2021; Nightingale et al., 2021). The specific research questions were:

- What were the actions and processes involved in 20mph speed limits progressing from an idea to a change in policy in Edinburgh and Belfast?
- What were the key factors associated with successful policy change in the two cities?

2. Methods

Due to the exploratory and descriptive nature of the research, a qualitative case study design was deemed appropriate (Punch, 1998). Data were collected from available

documents and interviews with stakeholders involved in the pre-implementation processes, as described below. This research began in September 2017, approximately 14 months after implementation started in Edinburgh and 19 months after implementation in Belfast. Ethical approval for the collection of the interview data was granted from Moray House School of Education ethics committee, University of Edinburgh (ref 762, granted 27 November 2017).

2.1 Document analysis

Our documentary analysis followed the READ approach, [which is recommended for documentary analysis in health policy research](#) (Dalglish et al., 2020). Two of the authors (KM and MK) conducted searches of relevant websites as determined by advice from stakeholders, to identify documents about 20mph speed limit interventions, including UK wide developments as well as national and local activity. We were interested in finding any legislation, policy statements and committee reports that related to the 20mph policy process in each city. Websites included those of the national governments (Scotland and Northern Ireland) and the City of Edinburgh Council. We did not look for local council documents in Belfast as the scheme there was led and managed by the Northern Ireland Government - the Department for Regional Development/ Department for Infrastructure (the Department changed its name in May 2016). Search terms included '20mph' 'speed limits' 'speed restrictions' and 'road safety'. No limit was set on publication date.

Grey literature can be difficult to search and retrieve (Adams et al., 2016) and we found this to be the case, particularly for Belfast. As such, a member of the research team (RFH) worked closely with the Department for Infrastructure in Northern Ireland to determine

what sorts of documents existed and how the research team could gain access. Building good relations was important in subsequently obtaining relevant documentation for Belfast.

In both cities, we located as many documents as we could via the website searches and our interactions with the Department for Infrastructure in Northern Ireland. KM and MK read each document to check its relevance (i.e. the document made reference to 20mph limits or broader road safety issues) and also to identify other potentially relevant documents, which were subsequently added to the list for each city. Again, if those documents cited other potentially useful documents, they were also sought, and this continued until we were unable to identify any further documents.

We compiled a chronological list of the relevant documents for each of the two cities. These lists were shared with a range of stakeholders (members of the study steering committee plus all interviewees in both cities – see below) to confirm their accuracy and comprehensiveness. Any additional documents that were identified by the stakeholders were added to the list and subsequently located.

The final list of documents for each city is shown in Tables 1 and 2. All documents were imported to N-Vivo 12 software (QRS International Pty Ltd, 2018) and analysed using thematic content analysis (Braun and Clarke, 2006). We adopted a semantic focus, coding and reporting on explicitly-stated ideas, concepts and events, rather than considering the implicit ideas that might underpin the written text (Braun, Clarke and Weate, 2016). No themes were proposed *a priori*. Documents relevant to Edinburgh and Belfast were analysed separately, enabling us to piece together the series of events that unfolded in each of the

two cities and the key factors influencing those events. Data were extracted independently by two members of the research team (KM and MK), and the final coding framework for each city was agreed by them through discussion.

Table 1. Edinburgh documents related to 20mph (n=16)

Date (Month, Year)	Title	Author
Nov, 2006	Edinburgh's Local Transport Strategy	City of Edinburgh Council
June, 2009	Scotland's Road Safety Framework to 2020	Scottish Government
March, 2010	Transport 2030 Vision	City of Edinburgh Council
May, 2010	Road Safety Plan for Edinburgh to 2020	City of Edinburgh Council
Sept, 2010	20mph Speed Limit Pilot in South Edinburgh	City of Edinburgh Council
Sept, 2010	Relationship between Speed and Risk of Fatal Injury: Pedestrians and Car Occupants	UK Department for Transport
Nov, 2010	Active Travel Action Plan	City of Edinburgh Council
Feb, 2011	20mph Speed Limit Pilot in South Edinburgh	City of Edinburgh Council
Aug, 2011	South Edinburgh 20mph Limit Pilot – Response to TRO Consultation	City of Edinburgh Council
Nov, 2011	20mph Speed Limit Pilot in South Edinburgh – Variation to Traffic Regulation Order	City of Edinburgh Council
Aug, 2013	South Central Edinburgh 20mph Limit Pilot Evaluation	City of Edinburgh Council
Jan, 2014	Local Transport Strategy 2014-2019	City of Edinburgh Council
Dec, 2014	Good Practice Guide on 20mph Speed Restrictions	Transport Scotland
Jan, 2015	Delivering the Local Transport Strategy 2014-2019: 20mph Speed Limit Roll Out – Proposed Network	City of Edinburgh Council
March, 2015	20 for Edinburgh: 20mph Network Implementation	City of Edinburgh Council
Jan, 2016	Objections to Traffic Regulation Order TRO/15/17 20mph Speed Limit – Various Roads, Edinburgh	City of Edinburgh Council

Table 2. Belfast documents related to 20mph (n=19)

Date (Month, Year)	Title	Author
July, 2002	Northern Ireland Road Safety Strategy 2002-2012	NI Government
July, 2008	20mph speed limit signs at schools	NI Government
Feb, 2010	20mph Part-Time Speed Limits: Report on Pilot Studies	NI Government
April, 2010	Setting Local Speed Limits in Northern Ireland	NI Government
March, 2011	Northern Ireland's Road Safety Strategy to 2020	NI Government
Feb, 2014	An Overview of Key Road Traffic Collisions Statistics in Northern Ireland	Des McKibbin, Research and Information Service. Briefing paper for Northern Ireland Assembly
Feb, 2014	Road Traffic (Speed Limits) Bill	Des McKibbin, Research and Information Service. Briefing paper for Northern Ireland Assembly
April, 2014	Official Report for the Northern Ireland Assembly	Danny Kennedy, Committee for Regional Development, NI Government
June, 2014	Road Safety Engineering Procedures	Transport NI
June, 2014	Road Safety at Schools	Transport NI
Aug, 2014	Proposed 20 mph speed limit in Belfast City Centre	Belfast City Council
Aug, 2014	Table of objections in response to Proposed 20 mph speed limit in Belfast City Centre	Belfast City Council (not publically available)
Feb, 2015	Pilot 20mph Schemes in Belfast City Centre, Merville Garden Village and Ballymena (revision)	Transport NI
Feb, 2015	Meeting to discuss Proposed 20mph Speed Limit in Belfast City Centre	Transport NI (not publically available)
March, 2015	Objections to the Proposed 20mph Speed Limit in Belfast City Centre	Transport NI (not publically available)
Sept, 2015	The Roads (Speed Limit((No. 3) Order (Northern Ireland) 2015	NI Government
Oct, 2015	Minutes from Committee Meeting 14 th October 2015, in respect to a request for additional information on 20mph following the publication of the Roads (Speed Limit((No. 3) Order (Northern Ireland) 2015	NI Government (not publically available)
Nov, 2015	20mph Signed Only Speed Limit Pilot Scheme in Belfast City Centre	NI Government
May, 2016	Northern Ireland Road Safety Strategy to 2020: Annual Statistical Report	NI Government

2.2 Interviews

KT conducted interviews with key stakeholders identified as being closely involved in the pre-implementation political processes related to the 20mph speed limit interventions in each city. We initially interviewed stakeholders that were already known to the research team to be closely involved, and this was supplemented with snowball sampling.

Recruitment took place using email and telephone contact.

Sixteen interviews were conducted across the two cities, eight in Edinburgh and eight in Belfast. The eight interviews in Edinburgh were all one-to-one and consisted of: council officers (n=2), current and previous elected members of the council (n=3), Sustrans (sustainable transport charity) officers (n=2), and a civil servant. The eight Belfast interviews (with a total of 10 participants) consisted of: civil servants (n=6), members of the Police Service of Northern Ireland (n=2), 1 spokesperson for Sustrans and 1 from Translink (the transport authority for Belfast).

A semi-structured interview guide was used. Key themes included: local or national developments that raised the profile of 20mph on the political agenda; whether there were local champions in support of 20mph; the role of lobby groups; opposition to the policy change; and political and public reactions since the decision to implement the large scale 20mph interventions. The interviews lasted, on average, approximately 48 minutes, and were audio recorded. The audio files were transcribed verbatim and uploaded to N-Vivo 12 for analysis. As with the document analysis, the interviews were analysed inductively using thematic analysis and separately for each city (Braun and Clarke, 2006). Data were

independently coded by two members of the research team (KM and MK), and the final coding framework for each city was agreed by them through discussion.

3. Results

In total we identified 16 documents for Edinburgh, published between 2006 and 2016 (Table 1), and 19 document for Belfast, published between 2002 and 2016 (Table 2). These were policy statements, reports of council decisions, and reports of responses to public consultations. This demonstrates a history of at least 10 years of political deliberations on the topic before the interventions became a reality. While the data from the two cities were analysed inductively and separately, five common themes dominated the findings from both places: the national policy context; political leadership; support for 20mph; opposition; and the key actions involved prior to implementation. The findings related to each of these five themes are summarised below. Where direct quotations are included, these come from the interviews rather than the document analysis.

3.1 The national policy context

National policy context was important in both cities. Without favourable national context, it is unlikely the schemes would have reached the starting blocks. Twenty mph speed limits were deliberated in government discussions in both Scotland and Northern Ireland from the early- to mid-2000s, although the focus was primarily on small scale 20mph initiatives, for example around schools.

In both cities the main policy goal was to reduce road traffic collisions and casualties by slowing down traffic, although the policies were also intended to achieve wider objectives. For example, the Scottish Government wanted to create a healthier, greener and safer Scotland, which included encouraging active travel ([Transport Scotland, 2014](#)). In Belfast, significant regeneration was taking place across the city to create a more welcoming environment, particularly for tourists. Whilst there was no apparent existing problem with road safety or collisions in Belfast city centre, it was hoped that 20mph speed limits would contribute to creating a more pleasant environment through lower traffic speed and a reduced volume of cars in the city centre. The government also hoped to increase walking and cycling levels in the city.

Local authorities in Scotland are responsible for determining what transport policies get implemented and in what way, but they are bound to conform to the national framework set by the government. The installation of 20mph 'limits' (without [physical traffic calming measures](#)[infrastructure](#)) as opposed to 'zones' (~~which include the installation of physical infrastructure~~) was outside of the scope of the national framework, although the Scottish government allowed the introduction of this type of scheme in Edinburgh on a trial basis. In Northern Ireland it is the government itself that is responsible for decision making related to almost all aspects of the road network including speed limits, bus lanes, and changes to infrastructure. The local authority plays no role in decision making nor implementation of speed limits, or many other traffic regulation measures in Belfast.

What we see in both cities is a national policy environment in which road traffic speed control was a goal. This aligned with a broader socio-cultural *zeitgeist* in which the primacy

of road traffic was increasingly being questioned by many, with the dangers of pollution from traffic being identified as a threat to health, and widespread discussions taking place on climate change (National Institute of Health and Care Excellence, 2017).

3.2 Political leadership

The appointment of a new Convenor of Edinburgh's Transport and Environment Committee in 2012, marked a period of strong political leadership for 20mph in Edinburgh. There was significant and broad political buy-in across the Scottish National Party (SNP), Labour, Liberal Democrats and the Green Party. The Conservative Party were generally not so enthusiastic but also did not express strong opposition. There was not a clear political divide in terms of support and opposition, but key individuals across parties and other stakeholder groups were in support of the initiative.

"There wasn't widespread party-political support. It was much more about individuals in different political parties, council officers in the active travel and activists within the local community not necessarily aligned with any party, just community council activists and other community groups, schools, parents, boards and stuff like that that were pushing for this." (Elected member)

The community councils in Edinburgh showed active support and were considered to have been crucial in giving the politicians sufficient 'weight' to drive the initiative forward:

"I don't think politically there was the strength of feeling to drive this forward without the active participation, the active support of the community councils.... I

don't think it would have been possible to get it through. In fact, I'm sure it wouldn't have been possible to get it through the committee if there hadn't been active support from the community councils that were affected.... It was the community support for this that made it possible.” (Elected member)

In Belfast there were key politicians who were important in moving 20mph speed limits forward. One had introduced a Private Members Bill, although the bill eventually fell due to the cost of signage required to implement it.

“[The] Private Members' Bill, which was 2012 when ... introduced ... to the Northern Ireland assembly, and that was the Road Traffic Speed Limits Bill and that was to make the 20mph the default speed limit on residential roads across Northern Ireland.” (Sustrans)

“... we had a Stormont minister, who has since left, who was pushing very heavily for 20mph zones, but that was outside schools and other locations...that was his crusade, and I remember he brought us all up to Stormont and was a clear advocate, he had international speakers, but it just hasn't happened.” (Translink)

As with Edinburgh there was not a clear party divide between those who supported 20mph and those who didn't, but rather individuals across all parties who were for and against. In Belfast, all parties were supportive of the intended outcomes – safer streets and more walking and cycling - but there were mixed views on whether 20mph was the best intervention for achieving those outcomes.

"I think, in the main, most politicians and parties would say they were supportive of... They would coin it more as road safety, but whether they were supportive of 20 mph, it was a bit of a mix." (Sustrans)

3.3 Support for 20mph

In Edinburgh, some members of the public were supportive of 20mph, to prevent collisions or because of other concerns about road safety.

"...there was demand from the local residential groups who wanted to bring twenty miles an hour in. So, we would continually be getting letters and deputations etc. to bring it in." (Elected member)

Advocacy groups were important. This started with road safety groups lobbying for 20mph but later other organisations including Sustrans, Living Streets, and Spokes began supporting the initiative.

"I think the most coherent lobby in favour, I would say, was the cycling lobby. Yeah, there was, I mean, Living Streets were also in there in favour, but the strongest and most coherent component was the cycle lobby." (Council officer)

"So Spokes and all the cycling organisations, Living Streets, all the walking organisations [supported it]. There is an organisation 20 is plenty or something... But, cyclists, walkers, they were organised people, community councils, almost all

supported it and did so publically. There were resident associations who supported it.” (Elected member)

Views among the public were mixed in Belfast. Although there was relatively wide support for limits in residential areas and near schools, the city centre intervention, which is of prime interest here, caused mixed reactions.

“I got [it] inserted in the annual government omnibus survey that goes out to 2000 households, I got some questions put in, “in what circumstances would you support a 20mph speed limit?” and it's interrogated to male/female, rural/urban. The headline really was that 49% supported, 51% against. All these campaigners are saying that everyone wants this, but the only evidence we have is that omnibus survey” (Elected member)

3.4 Opposition

In the public consultation in Edinburgh, 36% of respondents opposed or strongly opposed the proposals (The City of Edinburgh Council, 2015). Young men in the age group 16-24 were most likely to oppose the proposals. Common concerns cited in the objections included: increased congestion and pollution; road safety; and increased journey times. There were suggestions that the council was wrong in adopting a blanket approach to 20mph, and suggestions that the funding would be better spent on road maintenance.

The main opposition to 20mph in Edinburgh came from bus operators and taxi drivers, although opposition was also expressed by the local evening newspaper and the Institute of

Advanced Motorists. Bus operators were worried about the impact of 20mph limits on their operations. The council responded to these concerns with assurances that research in other cities had shown that journey times would not significantly increase, and that by easing traffic flow during busy periods, 20mph may actually reduce some journey times. The council agreed to work with the bus operators to ensure that remaining uncertainties regarding impact on the bus network could be satisfied, or that solutions could be developed to mitigate any impact (The City of Edinburgh Council, 2015). According to one of the interviewees, installation of Wi-Fi on their buses allowed the bus companies to see for themselves that the impact of the new limit on their operations would be minimal:

“The thing that changed for Lothian buses was they installed Wi-Fi on the buses after they were consulted on the pilot in South Edinburgh. That gave them the opportunity to monitor in real time how fast the buses were going and where they were on the route. When they modelled that based on real information, they found that the cumulative effect of all buses going through the total area of the pilot area, was 30 seconds, that was the impact on their selves.” (Elected member)

Taxi drivers in Edinburgh proved the hardest group to convince and were described as the *“last man standing in terms of opponents”* (Elected member). Even after implementation of the intervention, taxi drivers felt the speed limit should not apply to them as they drive according to ‘common sense’.

One respondent explained how the objection process worked in Belfast.

“...the process here is that the legislation is processed under the Road Traffic Regulation Order Northern Ireland 1997, which you publish in local newspapers and suitable media, allow 21 days for objections and then when you get the objections, you consider them. Consider them means that you meet with people, you explain to them in more detail why you're doing them and ask if they would consider removing their objections. If they don't withdraw their objections, then what we do is we put forward a proposal to our headquarters... to ask them to consider the objection and to ask them to basically set it aside, and that's what happened in this case. So we're able to do that ourselves, albeit a different part of the organisation.” (Civil Servant)

Those who expressed objections in Belfast had concerns over traffic flow, economic impacts, and conflict with other government commitments to reduce greenhouse gas emissions and to improve air quality. If speed restriction measures were to be put in place, drivers favoured the signs only approach ('limits') to physical traffic calming measures ('zones') due to the 'wear and tear' on cars caused by physical infrastructure. Some objectors felt, however, that signs only would be insufficient and that physical infrastructure was necessary to change behaviour.

In Belfast the main opposition was from the Federation of Small Businesses in the Belfast Chamber of Trade, who were concerned that the scheme would *“slow down businesses”*. This included pizza deliveries being delayed because the city would be *“grinding to a halt”*, but also people being deterred from coming into the city, therefore causing a reduction in footfall for local businesses.

The Police Service of Northern Ireland expressed concerns. Because the intervention would consist of signs only, without traffic calming measures, extra police enforcement would be needed and the police were worried about the additional burden this would place on their workload. Civil servants were of the opinion that enforcing 20mph speed limits should not be a police priority.

“There's a bigger question, really. If police resources are stretched, is that really the best use of police resources? If people aren't being killed or seriously injured because somebody goes five miles over a 20mph speed limit... I think you have to put it into context, and to have police sitting around Belfast City Centre just trying to catch people breaking the speed limit doesn't seem to be great use of their time.” (Civil Servant)

3.5 The key actions involved prior to implementation

Following at least ten years of discussion on the potential for 20mph to address issues of road safety, Edinburgh planned a pilot study of the implementation of 20mph speed restrictions in the south of the city (The City of Edinburgh Council, 2011a). A public consultation was undertaken, and more than half the responses were favourable, so permission to undertake the pilot scheme was granted (The City of Edinburgh Council, 2011b). The choice of South Edinburgh for the pilot was deliberate according to one elected member.

“Right, so the reason that we took the view that we would trial the pilot in south Edinburgh and the part of south Edinburgh we chose, was there was a lot of push

factors or factors around there being a lot of people in the area who had a very positive attitude around walking and cycling and we felt there were significant gains to be made. There's a lot of university students around. There's a lot of schools around as well. It's a popular area in terms of living, bringing up families so there were lots of young families, lots of cyclists, lots of people who walk" (Elected member)

The evidence from the pilot was equivocal. Four locations saw slight increases in average vehicle speeds from 'before' to 'after' the intervention and four locations continued to have average speeds at or above 24mph, however overall there was an average 1.9mph reduction in speed across the pilot locations (The City of Edinburgh Council, 2013). There was an overall increase in the number of vehicles on most (34 from the 48 locations measured) 20mph and 30mph streets from the 'before' to the 'after' period, although in no location was this deemed 'notable' (The City of Edinburgh Council, 2013). The attitudes of residents were deemed favourable, with plaudits for safety for children, more walking, fewer traffic incidents and better facilities for cyclists (The City of Edinburgh Council, 2013). The council concluded, on the basis of the pilot, that the intervention encouraged a slower and safer environment and for journeys to be undertaken by environmentally friendly modes of walking and cycling (The City of Edinburgh Council, 2013).

The pilot scheme in South Edinburgh was important because it was at a scale greater than any of the previous local school and residential schemes in Edinburgh and it might also be viewed as a 'dress rehearsal' for the subsequent city-wide scheme. The view was expressed

that the city-wide scheme was helped along by a fortuitous alignment of interests which were then further supported by the results of the pilot.

“Ran the pilot. Did a before and after survey It certainly showed significant increase in public support for twenty miles an hour. It seemed to show a lot of positive outcomes in terms of people’s attitudes to how they felt about walking and cycling and children walking and cycling in the area. It’s more equivocal in terms of what it says about casualties. But I think it was seen as overall success and a springboard then to go to the city-wide scheme.” (Council officer)

From the councillors’ point of view, the pilot played an important role in gaining positive public attitudes towards 20mph.

“The figures were startling, because the pilot was in Edinburgh south, when we asked people initially, do you support it? Two-thirds said, no. The numbers for cycling, walking, playing outside for kids and all that kind of stuff was quite low. When we asked people after the pilot, do you support it, the figures completely inverted. So, when people were living with it support just skyrocketed and opposition just crumbled. So, it was then about two-thirds support and one-third opposition. The stats on would you let your kid cycle to school? Would you let your kid play outside unattended, were much higher...” (Elected member)

Following the pilot, Scottish government relaxed its guidance on 20mph restrictions such that 20mph ‘zones’ with physical infrastructure were no longer necessary and ‘limits’ using

signs only was an option (Transport Scotland, 2014). This changed the context and meant that city-wide implementation would be more feasible and would cost substantially less. This seems to have been a significant factor in the council's decision to take forward the city-wide scheme.

When the city-wide scheme was implemented there were parts of the city that had already had 20mph limits for a number of years and this was thought to have helped:

"...there were quite large chunks of the city where every single side street was already twenty miles an hour.... So there were chunks of the city where it was kind of pretty much the norm anyway. (Council officer)

There is evidence that population shifts in travel were already underway in Edinburgh and the council tapped into a secular change. According to the 2011 census, in Edinburgh there had been a long-term increase in the mode shares of public transport, cycling and walking to work, and increases in bus and rail travel, and cycling (The City of Edinburgh Council, 2014; Baker et al., 2021).

In Belfast, following many years of discussion and deliberations, a programme of engagements was carried out, involving those with a statutory responsibility for road safety and stakeholders who had an interest in the issue. This involved internal workshops which provided the statutory road safety partners with the opportunity to reflect on those actions that deliver road safety improvements and to identify and debate new and complementary measures (Department of the Environment, 2011). A public consultation was also carried

out and showed strong support for the wider use of 20mph speed limits, particularly those without traffic calming measures.

The government subsequently published the *Northern Ireland Road Safety Strategy to 2020*, which set a commitment to implement pilot schemes for 'signed only' 20mph interventions, and set four targets for reductions in fatalities and serious injuries from road traffic collisions (Department of the Environment, 2011). However it was felt, at least by some, that once the decision was made to trial 20mph limits in the city centre, insufficient strategic thinking and planning was done in the design and development of the intervention.

"It originally came from the Northern Ireland Road Safety Strategy, and it was written by people who maybe weren't at the sharp end and who really didn't have a history of actually implementing these things and, to be honest, I don't think they knew what they were looking for. It was just like someone said 'oh, we'll have a number of 20 mph zones (sic)', I don't think they actually sat down and thought, well, what do I want, what type of pilots... Do I want them in purely residential areas or do I want them in city centre areas or do I want them in..." (Civil Servant)

Decisions about how it should be implemented were largely driven by the available budget.

"It was implemented the way it was because that's the amount of money we had, and part of that was not just because that was the amount of money we had, but also, if you start with a low base and it's successful, then you can roll it out quicker

and more extensively, whereas if you go for a very comprehensive elaborate engineering scheme, they're quite expensive and then you don't know whether you'd have got away with less.... But it was that idea of if you go for the large scheme to start with, you can't scale it back because you don't know how effective it will be, whereas if you start you can judge on the effectiveness.” (Sustrans)

Unlike in Edinburgh where a small-scale pilot was undertaken prior to implementation of the city-wide scheme, in Belfast there was no such preliminary trial. Rather the government implemented the full city-centre scheme but called it a ‘pilot’ to reduce concerns among the public about the wide-scale speed limit change. In reality, there were no intentions to withdraw the scheme in Belfast regardless of the outcomes.

4. Discussion

This paper describes how wide-scale 20mph speed limit interventions came to be introduced in both Edinburgh and Belfast. While the two schemes differed in terms of both the process and the scale of intervention, in the end both achieved what some commentators have called “*one of the cheapest and most effective methods for improving public health*” (Dorling, 2014:46).

A number of features of the process of getting these schemes implemented are noteworthy. Both schemes were gradualist, bureaucratic, not very exciting politically, and not characterised by momentous political fireworks. Both cases are a far cry from the kinds of political rows and controversies that characterise some efforts at public health

improvement (Kelly, 2018) or the daily drama and media attention attached to the COVID-19 pandemic. Both speed interventions were low key in national and local media. There were arguments about both interventions in the two cities, but these did not really engage, or enrage, the public at large.

In both cities, discussions about 20mph started to emerge in the early- to mid- 2000s, however clear decisions to implement, subject to public and stakeholder consultations, did not happen until at least ten years later. In neither city were there major landmark events that caused a radical shift in policy (although in Edinburgh the South Edinburgh Pilot was very important). Rather 'baby steps' were taken to inch closer to the idea and the eventual reality over a sustained period of time, such that what eventually unfolded was seemingly inevitable.

Gaining public support was important in both cities. Implementing small pilot schemes close to schools and in residential areas gave the public an opportunity to experience these schemes on a local level, and to begin to realise the advantages of slower traffic, particularly on road safety, but also on lowering noise pollution and improving liveability. Taking incremental steps appears to have been helpful in preventing public backlash.

Writing in the *Milbank Quarterly*, Sandro Galea, set out the idea of radical incrementalism. His thesis, in the context of renewal after the COVID-19 pandemic, resonates with our data. The idea of large scale 20mph limits was radical, but the approach was incremental, which appears to have been key to success. Galea notes that "vision, without execution, remains

hallucination” (Galea, 2020). His point is that public health is built on firm administrative infrastructures, which facilitate incremental health progress. He says:

“a radical incrementalism in public health, the articulation of a radical vision combined with an incremental approach, stands to best capitalize on the promise in the moment. And that doing so takes courage and boldness on two fronts. It takes courage to say that health should be a motivational force behind how we build our world and as such should be integral to the breadth of sectors that create that world. It also takes boldness to say that, in order to get there, we will need to create the partnerships that take time, to re-think how we teach and learn public health, to make changes one at a time that eventually will see our vision flourish, and that the hard work of execution lies with the small incremental gains that accrue every day in the hard work of transforming complex systems that are not likely to yield quickly. A radical incrementalism in public health stands, to my mind, as a viable, tractable agenda, consistent with our aspirations, and attuned to the realities within which we operate.”

What happened in Edinburgh and Belfast are local examples of radical incrementalism. It took time, around 10 - 15 years, but the vision did become a reality. These successes in policy change in Edinburgh and Belfast provide useful learning for other jurisdictions planning or thinking about similar interventions.

Several strengths and limitations of this research should be noted. In terms of strengths, we consulted with stakeholders in both cities to ensure we had identified a comprehensive list

of policy documents. Through this process we were provided with access to documents which were not publically available, particularly for Belfast. We interviewed a range of stakeholders who had insight into the political decision making processes in each city. Data were extracted independently by two experienced members of the research team, before agreeing the final coding framework for each city, through discussion. The main limitation was that the research was retrospective. We therefore relied on what stakeholders could recall about the process and what was documented in official records, rather than collecting data in real-time.

5. Conclusion

Implementation of large scale 20mph speed limit interventions was achieved in both Edinburgh and Belfast. Both interventions are examples of radical incrementalism to achieve transport and public health policy change. In both cities the process took more than a decade and was piecemeal. However, the gradualist approach proved successful in gaining support for the interventions and minimising political and public opposition. These examples of successful policy change in Edinburgh and Belfast provide useful learning for other jurisdictions planning or thinking about similar transport and public health policy changes.

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Declaraton of interest

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Author contributions

KM and MK conceived the idea. KM and MK conducted the web searches and were assisted by KT, GB, CC and RH to obtain relevant documents. KT conducted the interviews with stakeholders. KM and MK undertook the data analysis and drafted the paper. All authors edited the manuscript for important intellectual content and approved the final version.

Highlights

- In 2016, large scale 20mph speed limit interventions were implemented in Edinburgh and Belfast.
- Using a qualitative case study method, this paper describes how 20mph speed limit interventions became a reality in the two cities.
- Both interventions are examples of radical incrementalism to achieve transport and public health policy change.
- The gradualist approach proved successful in gaining support for the interventions and minimising political and public opposition.

- These successes in policy change provide useful learning for other jurisdictions planning or thinking about similar interventions.

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