

An evaluation of a national rail suicide prevention programme

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SUMMARY

This paper describes the rationale for the introduction of a GB national rail suicide prevention programme, which was introduced in 2010 with the aim of reducing the number of suicides on the rail network by 20%. The programme has three key streams of work; prevention activities (designed to reduce the level of suicide), post-vention activities (actions to reduce the impact of suicide) and activities to support partnership working between the key organisations involved in suicide prevention and each of these will be described in detail.

This paper will describe the challenges of, and approaches to, the evaluation of such a complex (multiple activities and multiple agencies) and evolving programme. The paper will also present the emerging findings of the evaluation in terms of improvements in partnership working, the impact on the numbers rail suicides and post incident management.

INTRODUCTION

Over the past ten years, there has been an average of 217 suicides per year on the railway. As Figure 1 shows on average 39% take place at stations whilst 11% occur at level crossings. The category *other locations* mostly comprises suicides on the running line, but also includes a small proportion (less than 2%) occurring at other railway locations, eg bridges. Around 80% of recorded suicide attempts have a fatal outcome. Of those that do not, more than half result in major injuries, many of which will be severe and life-affecting.

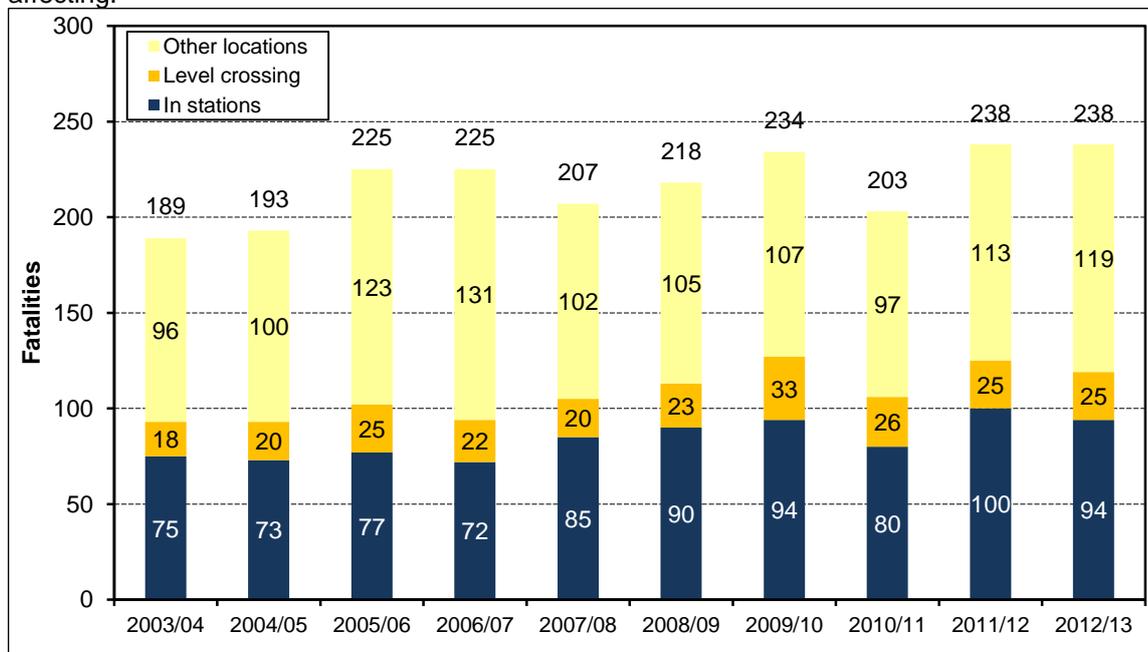


Figure 1: Suicides and suspected suicides by location

Suicides on the railway represent by far the largest proportion of railway-related fatalities, but they represent a relatively small percentage of suicides on a national level. National suicide figures are not available as recently as railway figures and are published on a calendar year basis. Figure 2 below shows the latest available calendar year comparisons.

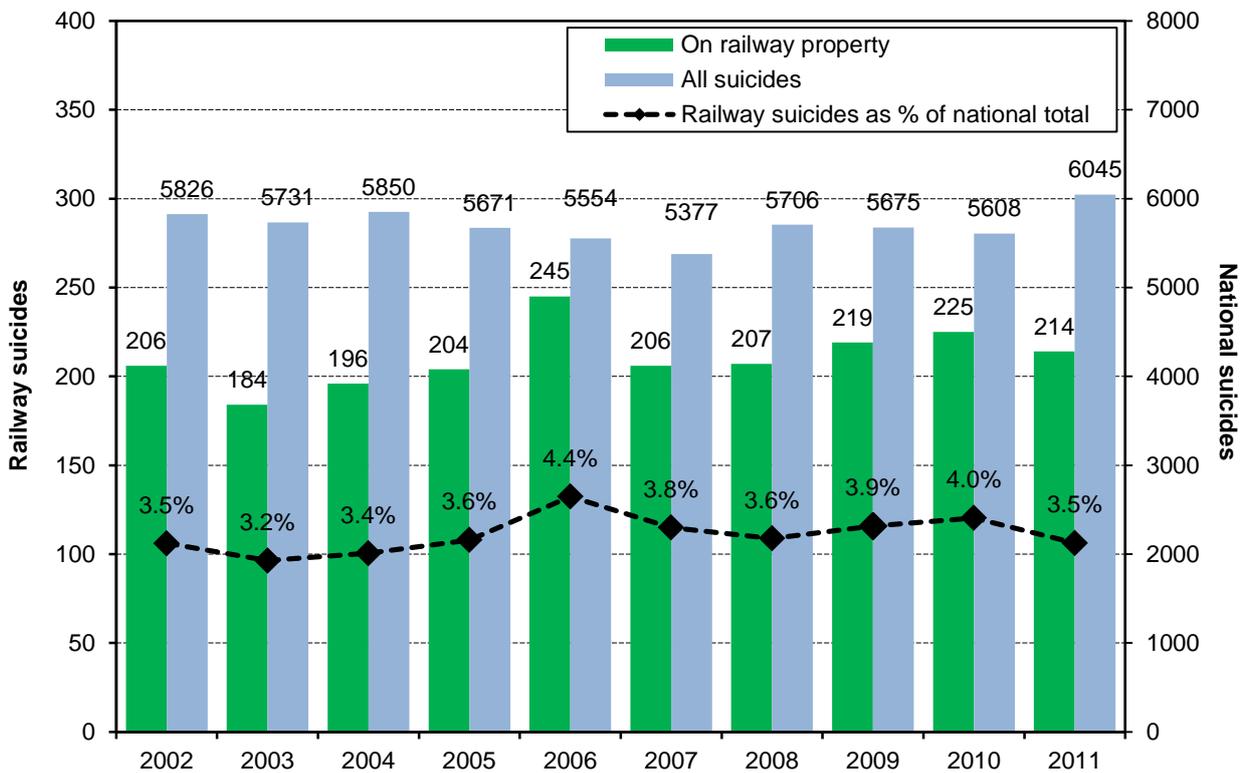


Figure 2: Railway Suicide trends in the wider setting

The number of national suicides has been variable around a ten-year average of 5,704; the figure for 2011 is the highest recorded of the analysis, by a notable margin. The proportion of the national total occurring on railway property has been 3.7% over the presented period. Age and gender demographics of railway suicides vary somewhat from national suicides. Compared with the national profile, a greater proportion of railway suicides are male; this is particularly the case in the 15-44 years age group.

GB NATIONAL SUICIDE PREVENTION PROGRAMME

In 2010, Network Rail entered into a £5 million, five year partnership with Samaritans to reduce suicide on the railways. Prior to the partnership there had been no national strategy in place to reduce railway suicide. The partnership involves the roll out of a programme of prevention and post incident support initiatives to reduce the impact of suicide. These include multi-agency partnership working at national and local level, bespoke training of railway industry staff, a national public awareness campaign (Figure 3), a volunteer call out service providing emotional support to people in distress at railway locations, post-incident support provided by local Samaritans branches and work to encourage responsible media reporting of suicides.

The two targets established at the outset of the programme were for a reduction of rail suicide (by 20%) and for 10,000 rail staff to receive training (although the type of training or proportion of staff to be trained was not set). Targets have been now been set for the number of courses to be delivered annually, the number of participants and for the distribution of British Transport Police (BTP) witness cards and station awareness cards.



Figure 3: Posters from the public awareness campaign

As mentioned earlier a number of suicides occur at level crossings and signage has been placed at these sites to encourage vulnerable members of the public to call Samaritans (see Figure 4).



Figure 4: Signage at a level crossing

Table 1 below summarises the programme activities and details the level at which they are being developed and delivered.

	AT NATIONAL LEVEL	AT A LOCAL LEVEL
Partnership working	<ul style="list-style-type: none"> National suicide prevention steering and working groups Development of guidance and policies Appointment of programme support teams and leads in key organisations (Samaritans, Network Rail, TOCs) Collation and dissemination of data centrally (by Network Rail, Samaritans, RSSB, Association of Train Operating Companies (ATOC)) 	<ul style="list-style-type: none"> Local engagement/ development of local suicide prevention plans Station audits Third party engagement and outreach activities
Prevention activities	<ul style="list-style-type: none"> Design and delivery of public awareness campaigns and information materials for stations and rail staff Design and delivery of Managing Suicide Contacts and ESOB (emotional support outside branch) training (for local Samaritan branches) Coordination of the ESOB service 	<ul style="list-style-type: none"> Priority location identification Recruitment of station staff to Managing Suicide Contacts training Public awareness (poster) campaign, Samaritans metal signs and distribution of information for station and NR staff Physical mitigation measures Call out of Samaritans on identification of a vulnerable person.
Post-vention activities	<ul style="list-style-type: none"> Development and delivery of Trauma Support Training for management & unions Development of Driver Fatality Guidance Development of guidance to prevent copycat suicides (Media guidance, Memorials policy) 	<ul style="list-style-type: none"> Recruitment to Trauma Support Training Post-incident visits to stations by Samaritans to support staff and public who have witnessed or been involved in fatal and non-fatal incidents

Table 1: Summary of programme activities

EVALUATION CHALLENGES

Undertaking an evaluation of a programme of this nature is challenging for a number of reasons. As Table 1 shows the programme is very complex and operates at both national and local levels, includes a large number of different interventions that have multiple organisations involved in their delivery, is constantly evolving as more is learned, and partners are themselves changing their practice through their involvement.

Although a number of evaluation activities were undertaken during the first year of the programme, the detailed evaluation activity reported in this paper did not commence until the second year of the programme, meaning that it was too late to undertake any robust before and after measures, apart from in areas for which data is available from the years prior to the programme (such as data on suicides and delays caused by suicide).

An evaluation of this kind needs to consider ‘counterfactuals’. The programme is embedded within a wider environment within which a range of activities are taking place which may impact on the outcomes of the programme such as other activities to restrict access to the track or those by the British Transport Police (BTP) to speed up response to incidents. It is also important to consider the impact of the social context in which the programme exists, and the impact at macro and micro level of societal changes such as the recession.

The evaluation of complex interventions is always challenging because it can be difficult to establish clear cause and effect relationships between the interventions and their outcomes/impacts (attribution). One approach that is increasingly being used in these circumstances is a ‘Theory of Change’ evaluation framework, which seeks to map the pathways between different elements of the programme and their intended outcomes. Figure 5 shows an example theory of change map.

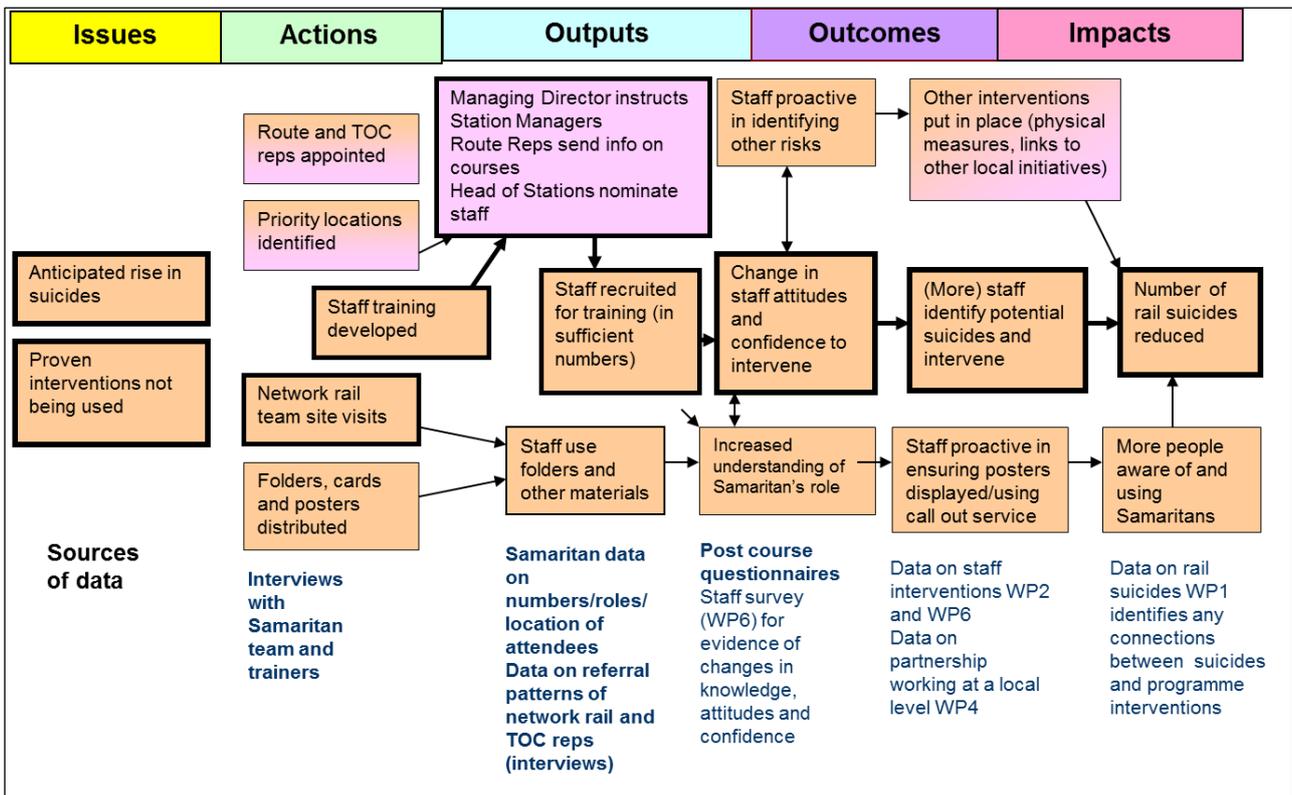


Figure 5: Example Theory of Change Map for Managing Suicide Contact Training

The theory of change maps developed were used to both identify the different sources of data that can be used to establish ‘progress’ towards the intended outcomes and impacts, and as a framework for bringing the different sources of data together in the final analysis. Complex evaluations using theory of change maps involve the triangulation of different sources of data involving a mix of both qualitative and quantitative data.

The evaluation of the Network Rail/Samaritans programme is addressing the following overarching questions:

- To what extent have programme activities, and activities enabled or supported by the programme, led to a reduction in loss of life from suicide on the railways?

- What evidence is there that the programme has reduced disruption to services and distress, or lowered the cost resulting from suicides, to the railway industry?
- Has the programme contributed to improved partnership and inter-agency collaboration in the prevention and mitigation of the impact of suicide, across the rail industry (nationally and locally)?
- What is the evidence that individual elements of the programme have been effective in themselves, and contributed towards the overarching objectives of the programme?
- To what extent has the programme supported the implementation and promotion of best practice in prevention and mitigation of the impact of suicide across the rail industry?
- What has been learned that can support future strategy?

To support these overarching evaluation questions a number of work packages involving data collection and analysis are being undertaken. Table 2 below provides detail on the main data collection activities.

Work package	Work packages	Main activities
WP1 & 2	<ul style="list-style-type: none"> • Prevention – has there been a reduction in suicide numbers? • Postvention – has there been a reduction in disruption and distress? 	<ul style="list-style-type: none"> • Statistical analysis of suicide data and performance data. • Collation of information on where programme interventions have taken place and their impact. • Collection of counterfactual data - Information on other interventions initiated outside to reduce disruption caused by suicide, impact of societal elements.
WP3 & 4	<ul style="list-style-type: none"> • National partnership working • Local partnership working 	<ul style="list-style-type: none"> • Analysis of documentation from national steering group • Partner survey aimed at gathering views of the success of the partnership and any barriers to its roll out, changes to company's policies or activities as a result of the programme and individuals attitudes to suicides. • Eight Station site case studies - interviews with all relevant parties
WP5	Case studies of specific programme sub activities	Data from other work packages on implementation and whether the sub activity has reached the intended audience, the impact it has had on those involved and whether the wider programme has supported the roll out of the particular intervention.
WP6	Staff attitudes, and experience	Questionnaires to collect of data from front line staff on their knowledge of involvement in the programme, attitudes to suicide, likelihood to intervene, and personal experiences with suicidal contacts.
WP7	Overview/collation of findings	Overview of other work packages, collate overall picture, highlight areas of best practice for future strategy development and dissemination

Table 2: Summary of evaluation activities

EARLY RESULTS

At the time of preparing this paper analysis of the data from all of the work packages was still ongoing. Some of the final high level results will be presented at the IRSC conference. However some early findings [1] have been included in this paper although care must be taken in using these and they should be seen as indicative.

Programme coverage

At the time of writing data was available up to March 2013 in relation to the implementation of programme activities at a local level. These are shown in Table 3

ACTIVITY	Y1 2010/11	Y2 2011/12	Y3 2012/13
Number of priority locations identified	175	237	254
Number of priority locations with at least one poster displayed ¹	105	191	152
Number of priority locations that can offer Emotional Support Outside Branch (ESOB)	63	159	251
Number of times ESOB was activated	0	1	7
Number of station awareness cards distributed	3600	95,000	89,500
Number of BTP witness cards distributed	7,550	6,100	5,950
Number of Managing Suicide Contacts (MSC) courses delivered	91	130	159
Number of staff trained - MSC	940	1315	1211
Number of staff trained Trauma Support Training (TST)	NA	187	631
Number of reported staff interventions ²	10	25	22
Number of times post incident support offered		172	253
Number of times post incident support accepted		78	42

Table 3: Delivery of programme activities

While many of the programme activities have been put in place in priority locations considerable variations in delivery remain. The evaluation found that the key factor influencing variation in delivery of the programme in different parts of the country is the number of organisations involved and the different levels of engagement both between organisations and, in some cases within these organisations at a station or individual level. Interviews with key stakeholders suggested that the reason for this variation was due to the extent to which key representatives in the organisations involved have the time, ability, seniority and commitment to be proactive in supporting local delivery. In many cases this role was tacked on as a relatively minor part of another role and not given the time needed to fulfil requirements of the role. The extent to which suicide is, or is not perceived to be a priority issue on a particular route or for a particular Train Operating Company also has a bearing. Respondents to the Partnership Survey were asked whether they felt that they had sufficient time to devote to their role in suicide prevention and/or reducing staff distress and service disruption, only 52% felt that they did, further reinforcing this finding.

Preventing Rail Suicide

The number of rail suicides (as shown in Figure 1) shows no sustained reduction since the programme commenced. An overall comparison of the three years prior and three years since the launch of the programme in 2010 shows there has been an average increase of 7 events per year. This increase does

¹ The collection of data on the display of posters depends on local branches attending stations and sending in reports to the Samaritan central project team. So the display of posters can change from week to week.

² There is a known issue of under reporting of interventions and a programme has been introduced to encourage staff to report any interventions they make.

not however represent a statistically significant increase over this period. These figures need to be seen in the context of the fact that the programme has not yet been fully implemented across the country.

As Figure 2 shows there is some evidence that rail suicides account for a higher proportion of national suicides than a decade ago although there has been no significant change in recent years and over the period during which the programme has been implemented. National suicide figures have also been impacted by the fact coroners are now more frequently using narrative verdicts where there is uncertainty over the person's intent which may account for variations recorded at a national level. A guidance note was issued to coroners in 2011 [2] to ensure they provide enough detail in narrative verdicts. This allowed coders at the Office of National Statistics (ONS) to have more information when coding which may potentially have increased events coded to intentional self-harm. For railway suicides however, in most cases there is enough evidence to support the coding of suicide; the Ovenstone criteria³ is used to categorise cases for which there is no definitive coroner's verdict. Further work to understand how rail suicides have been coded compared to ONS coded suicides is on going.

Further analysis looked at those stations considered priority in 2010 and compared them with the 2012 list. 175 stations were chosen in 2010, including all Network Rail managed stations. The selection was not based on set criteria, but reflected a number of factors, including a history of suicide attempts. In 2012 a risk based approach was used to calculate the priority station list, taking into account the suicide history, delay minutes and hazard rating based on station layout and through traffic at the station – the list now included 254 locations.

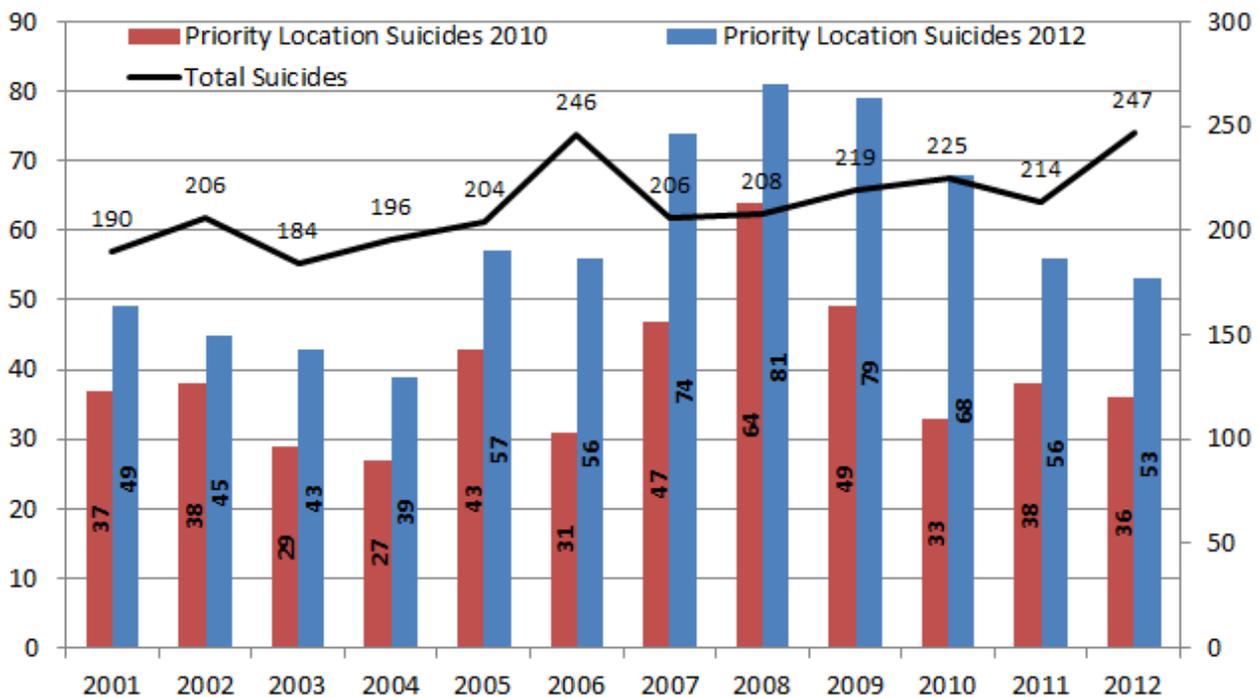


Figure 6: Railway suicides at priority locations in 2010 and 2012

Figure 6 shows the number of suicides at stations designated as priority stations in 2010 and 2012. The analysis of priority locations showed that three years before the programme commenced in 2010 the number of suicides at priority locations averaged around 78 per year. The three years since the programme there have been on average 59 at priority locations, which is closer to the long term average at those locations.

This result may be interpreted as evidence that the designation of these stations as priority locations and the resultant programme activities has led to a reduction in suicides. However, without detailed information about when and what interventions were taken at each of these stations it is difficult to ascertain concrete support to this theory. An alternative hypothesis may be that this reduction is nothing more than a reversion to the mean, in other words the drop in suicides at priority locations after they were designated could simply be the result of an unusual 'spike' in suicides at these sites which then led to this designation. It is impossible to know definitively whether without this designation (and the resultant programme activities) whether the numbers of suicides would have continued to rise (or remain stable) at these stations.

³ The Ovenstone criteria are used in difficult cases to look at other factors such as mental history, previous attempts and their intent or behaviour. The criteria are also used before a verdict is returned.

A survey of frontline staff was undertaken with the aim of comparing self-reported knowledge, attitudes and behaviour towards suicide. When asking respondents about the actions they would take on encountering a potentially suicidal person, those respondents who had received the MSC training were statistically more likely to say they would exhibit more appropriate actions (approaching the person and introducing themselves, asking the individual's name, how they were, encouraging them to talk about their problems, listening, showing empathy, encourage further discussion in a safe place, provision of Samaritans details, offering to organise for Samaritans to contact the individual and requesting an ESOB) than those who had not received the training. The same group were also statistically less likely to exhibit inappropriate behaviours than those who had not received the training. Many qualitative examples of interventions were given by survey respondents which suggests that staff are making interventions on a regular basis. Analysis is ongoing to identify whether training has had an impact on the self-reported interventions.

Reducing the impact of rail suicide

It is widely acknowledged that railway suicide is very disruptive and costly. In GB railways there are three significant parties that bear the costs associated with suicide, these are Network Rail, British Transport Police and the train operating companies affected by the incident.

Network Rail incurs a relatively small cost in responding to suicide incidents, but bears a significant cost in compensating train operators for associated delays and cancellations. Total delay and cancellation costs for completed suicides (i.e. excluding suicide attempts that were prevented or resulted in non-fatal injuries) in recent years were:

2009/10 £19.9 million

2010/11 £11 million

2011/12 £20.7 million

The train operators incur a number of costs, which were identified and estimated by means of a workshop. The greatest cost is the impact of suicide on rail staff and in particular drivers. Train cleaning and repair costs and the compensation paid to passengers for the disruption they encountered are also significant. Annual TOC costs were estimated to be approximately £12 million per year.

It has not been possible to ascertain BTP costs in detail, but these are estimated to be between £5 and £12 million per year.

There has been no obvious downward trend in the delay and cancellation costs that arise from suicides. As none of the programme activities were specifically targeted at reducing delay this finding is directly related to the fact that there is currently no evidence of a reduction in suicides on the railway.

There is some evidence that response times to suicides are improving. This requires BTP, Network Rail and the train operators to work together to resume the train service as quickly as possible. Response times between 2009 and 2012 show that the average time for the train service to resume following a suicide has reduced from 2 hours 44 minutes to 1 hour 59 minutes. Further analysis will be undertaken to assess whether this represents a significant reduction.

The main area in which the programme may influence the disruption caused by suicide (in addition to reducing suicide) is in the activities designed to reduce staff trauma. The Training aimed at managers and supervisors of staff who may be exposed to vulnerable individuals trying to take their lives has not yet been established long enough for the changes to be fully assessed.

There is evidence that the MSC training is preventing suicides and therefore providing cost savings. Not all the target staff has received this training and the data on the impact of this training is limited, more systematic information is likely to be available once this becomes part of the regular reporting process.

The role of partnership working in suicide prevention

Establishment of the National Suicide Prevention Steering Group (NSPSG) and Working Group (NSPWG) has provided the opportunity for different organisations to meet, discuss and work collaboratively to deliver the programme together.

A survey was distributed to those individuals involved directly in implementing the programme at a national level (NSPSG and NSPWG), those with a supporting function (BTP) and those that facilitate implementation by virtue of their role, such as Train Operating Company (TOC) managing directors. 87% of respondents felt that the programme had improved partnership working and 77% and 72% felt that programme activities had reduced staff distress and service disruption following a suicide respectively.

Responses to the partnership survey suggested that respondents felt that relevant organisations are working well together to prevent suicides and reduce service disruption following an incident. However, only 37% of

respondents felt that identified good practice was being effectively implemented on a national basis suggesting that communication between the steering group, working group and other partners at a local level could be improved to ensure industry strategy and activities are effectively rolled out. Qualitative responses suggested that there was a need for a coherent communications strategy to support strategy identified at the national level and delivery of the programme at the local level. On a positive note those respondents working at the local level felt that local groups were an effective means of achieving partnership working and that priority location identification was a useful way of targeting programme activities.

Respondents were also asked about which organisations they felt could have the most influence on suicide reduction and the perceived efforts of different organisations in this aim. Over 75% felt that Network Rail, Samaritans and BTP can influence the occurrence of suicides significantly, and 67% felt that the National Health Service had a key part to play. All of the representatives from (TOCs) recognised their role in influencing the occurrence of suicides, however over 40% felt that their potential influence was less than the previously mentioned organisations. When asked about the current efforts in suicide prevention the majority of respondents felt that the level of effort made by Samaritans and BTP were about right however that the Train Operators, Network Rail, Trades Unions and the National Health service needed to do more.

CONCLUSION

Evaluation of a programme of this nature is challenging. Reliance on simple indices such as the change in number of suicides – particularly when they are so low in number - isn't sufficient and a more sophisticated approach that seeks to identify the relationship between the interventions and the full range of expected outcomes/impacts is required.

Early analysis of the programmes coverage has shown that there are wide variations in the level of implementation across the country.

There is no evidence, as yet, that the programme has led to a reduction in the number of railway suicides on a network wide level. This may be due to the fact that the programme has indeed had no impact, or that assessing its impact simply on number of suicides alone is not subtle enough (particularly on such a small number of events), that any impact is delayed as the programme activities gain momentum and coverage or that the programme has led to the numbers of suicides on the railway to remain stable while there is an apparent increase nationally.

Reflecting these rail suicide figures, there is no evidence, to date, of any downward trend in delays or cancellations resulting from rail suicides, although there has been some improvement in response times to these events.

There is also strong evidence that the MSC training has led to attendees to better understand how to approach vulnerable individuals they have identified and indeed encouraged staff to intervene to prevent suicides on a number of occasions. Given the large costs associated with suicides, the prevention of a small number of suicides per year would be sufficient for the scheme to be cost beneficial.

There is considerable qualitative evidence to suggest that the programme has promoted closer collaboration between different organisations seeking to address rail suicide.

REFERENCES

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- [2] Office for National Statistics, Suicides in the United Kingdom 2011, http://www.ons.gov.uk/ons/dcp171778_295718.pdf