

Science communication in risk management at a high-incidence location for suicide

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The moral test of government is how that government treats those who are in the dawn of life, the children; those who are in the twilight of life, the elderly; and those who are in the shadows of life; the sick, the needy and the disabled.

Hubert Humphrey (1911–1978)

Abstract

It has been suggested that the role of robust scientific evidence in quality policy development is essential, but can vary on the basis of policy type and setting. These hypotheses and others were explored in a unique local case study dealing with risk management at a high-incidence location for suicide. Specifically, I examined the dynamic factors by which councillors regulated site access for public safety, journalists moderated relevant suicide reporting for public interest, and a science communicator with expertise in psychological medicine advised both groups. Scientific evidence guided public and private negotiations of a problem definition, solution approach, and philosophy of change; and the optimal utility of science in policy was eventually fulfilled in a precautionary suicide prevention approach by councillors and journalists, albeit with different conservative definitions of ‘cost-effective’ risk management. Findings supported an essential but variable role for science in policy – one influenced not only by policy type and setting, but also the management of expectations among decision-makers. Science communicators served as a resource for decision-makers, but ultimately definitions of cost-effective risk management were values-based judgements revealing not all decision-makers’ willingness to reject utilitarianism in the interest of a vulnerable few.

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CAUTION

Because research evidence has linked some media coverage that describes or depicts methods of suicide to an increase in suicide, caution is recommended with any public discussion of the content of this report.

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1. Introduction

1.1 Land history

Lawyers Head is a basaltic sandstone promontory (Binns, 1890) plotted on the Dunedin coast between the suburbs of Tahuna and Tomahawk. The headland is rugged (see Figure 1): unstable cliff edge landings about its perimeter vary in height, and the greatest drop of thirty metres at its face (Tomlinson, 2015) is not sheer, giving way to jutting ledges that crumble further into a thunderous pit of jagged rocks and surging ocean currents (R. Leck, personal communication, May 12, 2015).



Figure 1 Lawyers Head profile from John Wilson Ocean Drive. Safety fence is discernible top-left, and remnants of coastal defence battery can be seen in fortification top-centre. Image courtesy of Kay Cooke.

Despite these hazards, local residents have long regarded Lawyers Head as a geological wonder. Early settlers struggled to access the headland over sand hills and through dense bush (Thomson, 1864), but field naturalists began exploring the area in the 1870s (Murison, 1871): closely examining caves at the base of the headland at low tide, and hiking to its crown for spectacular views of the

city, flanking coastal regions, and the vast South Pacific Ocean beyond (Thomson, 1872). Lawyers Head has since received attention as a military defence post (Cooke, 2002) as well as a major site of human waste disposal for the city (Cyclopedia Company Limited, 1905).

Anderson's Bay Cemetery was being established on the hillside overlooking Lawyers Head by 1863 (Vogel, 1863) and the Ocean Beach links on the sand hills about the headland was also developed during the 1860s (Vogel, 1864). The ninth hole of what is now called the Chisholm Park Golf Links is located immediately adjacent to Lawyers Head, with both bearing down over the sea (Clough, 2016).

In 1908, construction of an ocean outfall at Lawyers Head was completed (Fenwick, 1908). The Dunedin Drainage and Sewerage Board, constituted in 1900, had established a main

intercepting sewer and the Musselburgh Pumping Station to improve city sanitation shortly after the turn of the century. The outfall at the headland represented the final phase of this historic upgrade (Turner, 1999).

Originally, the ocean outfall discharged city sewerage over rocks at the foot of Lawyers Head, which polluted beaches up the coast (Turner, 2016). However, Tomahawk Beach was still advertised as “the safest and best surf-bathing resort close to the city” twenty years after outfall completion (Hutchinson, 1928, p. 11), so initial health risk awareness appeared poor.

Efforts to “revive the swimming pastime” in Dunedin were made in 1910, with the visit of a Royal Life-saving Society of England representative (Hutchinson, 1910, p. 10). A life-saving class of fifty members had been established in Dunedin around this time, which would go on to form the Pacific Surf Bathing Club, and later the St Clair and St Kilda surf life-saving clubs, respectively (Hutchinson, 1912). A pavilion for the St Kilda club was erected at the beach just a couple of kilometres down the coast from Lawyers Head in January 1929. Designers wanted the complex to “not only present a picturesque appearance, but fulfil a valuable utilitarian purpose and thus encourage greater numbers of people to the beach” (Hutchinson, 1929, p. 24).

In 1947, following the Second World War, a newer outfall replaced the original at Lawyers Head. Wastewater treatment commenced in Dunedin in the 1950s with the installation of coarse screens at the Musselburgh Pumping Station. Then, with a tentative site for the Tahuna Wastewater Treatment Plant mapped out just a kilometre from Lawyers Head, communitors (large grinders) were installed there in 1967, thus further improving city wastewater treatment (Buchanan, 1987).

It wasn't until the 1970s that public access to Lawyers Head was significantly enhanced with the completion of a road up to the headland (Sligo, 2015). John Wilson Ocean Drive begins at a major intersection in the beach suburb of St Kilda, forges a direct route up to the dunes, and runs north alongside the coast for a couple of kilometres before a brief ascent to Lawyers Head (see Figure 2).

Named in memory of an “outstanding citizen” who served as chairman of the Ocean Beach Domain Board from 1930 to 1958 (Dunedin Amenities Society, 1958), John Wilson Ocean Drive provided easy access to the beach and to Lawyers Head, whether visitors travelled by foot, bicycle, or motor vehicle. It also provided a shared outdoor area for leisure and exercise, as well as parking spaces for motorists.



Figure 2 John Wilson Ocean Drive stretching from St Kilda intersection to left of shot, up to roundabout at Lawyers Head. Ninth hole of Chisholm Park Golf Course can be seen bottom-right. Image courtesy of Land Air Water Aotearoa.

A memorial tablet for John Wilson was installed at the foot of the drive in 1958 (Moffet, 1958) when the coastal road was in its infancy. A monument for another notable public servant, Sir Leonard Wright, was erected at the opposite end of the drive, atop Lawyers Head, in 1971 (C. Scott, personal communication, June 29, 2016).

Sir Leonard was an Australian tea importer who served as mayor of Dunedin throughout the 1950s (Petersen, 1964). His son, Alistair, described how the monument at Lawyers Head was “a great honour”, especially given that his father, as chairman of the Ocean Beach Domain Board (1960–1967), had shown “a great interest and passion for building a road right up to the lookout at Lawyers Head” (Wright, 2009, p. 18).

Installation of the memorial tablet for Sir Leonard likely coincided with the final development stages of John Wilson Ocean Drive (Sligo, 2015). The monument was erected in the centre of a viewing platform overlooking the ninth hole of Chisholm Park Golf Links and Tomahawk Beach below.

The Tahuna Wastewater Treatment Plant finally opened near Lawyers Head, where communitors had been installed previously, in 1981 (Buchanan, 1987). An inquiry into city drainage was launched a decade later, which served in part to address public concerns about ongoing wastewater discharge into the Otago Harbour (from outfalls at St Leonard’s,

Sawyer's Bay, Macandrew Bay and Grassy Point) and into the Taieri River (from an outfall in Mosgiel) (T. Dodd, personal communication, July 1, 2016). Fortunately, all harbour and river outfalls in Dunedin were disconnected from wastewater drainage lines by the turn of the century (Turner, 2016).

Despite advancements in wastewater treatment and the abolition of wastewater discharge at harbour and river sites since the construction of the original ocean outfall at Lawyers Head, the outfall itself was still widely considered suboptimal (T. Dodd, personal communication, July 1, 2016). The only other ocean outfall for city wastewater disposal is located down the coast in Waldronville. This outfall had undergone a sophisticated extension in 2000 with pleasing beach water quality results thereafter (Turner, 2002).

Prior to the subsequent outfall upgrade nearer Lawyers Head, Ocean Beach Domain (encompassing John Wilson Ocean Drive and the headland) remained an accessway for beachgoers and a driveway for motorists. However, according to numerous court reports in the *Otago Daily Times* around that time, the amenity of John Wilson Ocean Drive had been diminished by crime, e.g., motorists charged with speeding and/or driving under the influence; others charged with arson, wilful damage and/or providing false information. In other words, suicide risk at Lawyers Head – which, as we will see, was paramount – was not the only public safety consideration for councillors governing Ocean Beach Domain.

1.2 Suicide history

Lawyers Head has long had a reputation as a high-incidence location for suicide. Some local residents commonly refer to the headland as “Suicide Point” or “The World’s End” (E. Taylor, personal communication, May 12, 2015). It was difficult, however, to determine precisely when this reputation emerged, how it developed over time, the strength of the reputation now, and if the strong association of the site with suicide was fully justified.

Evidence of suspicious drownings near Lawyers Head could be traced back to January 1877 (Reed, 1877a) and the first news story of a suspected fall from the headland appeared in the *Otago Daily Times* a few months later (Reed, 1877b). The latter involved a middle-aged painter whose remains were found near the rocks beneath Lawyers Head one Saturday morning. It went so far as to share the depositions of four people close to the deceased who each described the last time they saw him, and speculated about his cause of death. While his wife had been adamant “he would never have thought of committing suicide” and one of

his workmates thought he might have just [accidentally] “got on the rocks and could not get off before the tide reached him”, two other workmates insisted they had seen a “great change” in him, one describing him as “absent-minded and dull”. Evidence was however equivocal and the jury returned a verdict of “found drowned” (Reed, 1877b, p. 3).

Any attempt to develop a comprehensive trace of suicide events at Lawyers Head over decades would have been in vain. A suicide-related callout can be designated one of several police job codes (B. Benn, personal communication, May 10, 2015), city inquest records are archived manually, and tabled suicide data for Dunedin exists only as far back as 2001 (R. Murray, personal communication, June 27, 2016). Furthermore, even with clear, accessible records, the accuracy of coroners’ verdicts can be compromised by societal influence (O’Donnell & Farmer, 1995).

Local newspaper articles provided some trace of suicide deaths at Lawyers Head from 1877 to present, but media coverage of suicide events would likely have varied over time (Gorer, 1955), so this trace merely suggested that a public association between the headland and suicide began long ago. More accurate historical figures (and comparable data from other jumping sites in Dunedin) would have been needed to determine when Lawyers Head, in particular, developed an evidence-based reputation as a high-incidence location for suicide – the prominence of this reputation over time would not always have been proportional to suicide-related activity at the headland (Aitken *et al.*, 2006).

Mental illness is very common among the suicidal (Yasamy & Fleischmann, 2012). Police representatives commented that suicide-related callouts to Lawyers Head “often involved the same people a number of times”, many of whom were under the care of mental health services (Skegg & Herbison, 2009, p. 501). Further evidence of a reputation for Lawyers Head as a high-incidence location for suicide was reported by nurses at Dunedin Hospital, who observed psychiatric patients talking about the headland from time to time (K. Skegg, personal communication, June 10, 2016).

When asked to provide a Māori perspective on the reputation of Lawyers Head as a high-incidence location for suicide, a governance representative of Te Rūnanga o Ōtākou (an historical Māori settlement on the Otago Peninsula) said they were unaware of such a reputation and suggested it may have been a “contemporary myth” (D. Matahaere-Atariki, personal communication, May 19, 2015).

Yet, according to inquest records held at Dunedin Central Police Station, nineteen people suicided at Lawyers Head over the past twenty years, with three people dying in a single year on two occasions. Jumping suicides (including suicide deaths from great height in a motor vehicle or by bicycle) accounted for 8.8 per cent of all suicide deaths in Dunedin during that time. Around sixteen people took their own lives in total each year in the city. The most common method of suicide by a significant margin was hanging, followed by gassing and overdose.

Jumping suicides may have accounted for a small percentage of suicides in Dunedin over the past twenty years, but 65 per cent of jumping suicides in Dunedin during that time occurred at Lawyers Head. Alternative jumping sites included Lovers Leap, Waipori Dam, Highgrove, Highgate Bridge, Pudneys Cliff, Māori Head, Tunnel Beach, a building in the central business district, and Second Beach. Therefore, although methods of suicide other than jumping from great height were more common in Dunedin, if a person in the area did intend to suicide by those means, they were more likely to fulfil this intent at Lawyers Head than at comparable sites.

In March 2006, the *Otago Daily Times* published a full-page Lawyers Head feature, “Police respond to more possible suicide attempts”, complete with large photo of a rescue helicopter hovering above the headland after reports of a person disappearing from the cliff edge (Porteous, 2006).

Four years later, an inspector for the Southern District Police stated, “Lawyers Head now has the unenviable reputation of having the highest number of deaths by suicide in one location in New Zealand” (Bryant, 2010, p. 16). Regardless of when this trend emerged, or how it developed over time, the aforementioned publications did not support speculation of the headland’s infamy being ‘mythical’.

1.3 Case history

In August 2006, John Wilson Ocean Drive (JWOD), the road to Lawyers Head, was closed to the public to allow for an upgrade of the ocean outfall that runs beneath it (Turner, 2005). Construction for the twenty-five million dollar upgrade was estimated to take eighteen months (Rudd, 2006). During road closure alternative pedestrian access to Lawyers Head could be sought via the Chisholm Park Golf Links (Bourke, 2009), although this was not publicised.

A senior lecturer in psychological medicine at the University of Otago (hereafter “SL”¹) was familiar with the reputation of Lawyers Head as a high-incidence location for suicide. They learned of Dunedin City Council’s decision to temporarily restrict public access to John Wilson Ocean Drive and saw an opportunity to assess the effect of road closure on suicide-related activity at Lawyers Head (K. Skegg, personal communication, June 10, 2016).

A year and a half later, SL was aware that construction for the outfall upgrade would soon be completed, at which time “the road might be reopened, with the attendant risk that suicides at the site would recommence” (K. Skegg, personal communication, April 16, 2015). The academic wrote a letter to the chairperson of the Community Development Committee at Dunedin City Council, requesting, in light of their preliminary research findings, that councillors consider permanently restricting access to Lawyers Head.

Preliminary research findings revealed that in the five years before road closure there were ten suicide deaths at Lawyers Head (and one non-fatal jump), and in the sixteen months after road closure there were no deaths at the headland (and no suicide deaths at alternative jumping sites). Findings also revealed that police responded to seventy-six individuals of concern at Lawyers Head in the four years before road closure (nineteen call-outs per year), but they responded to only ten individuals of concern at the headland in the sixteen months after road closure (seven call-outs per year). Statistics for individuals of concern at alternative jumping sites in Dunedin were unavailable, but police and the Emergency Psychiatric Service at Dunedin Hospital doubted the occurrence of site substitution in the area (B. Benn, personal communication, May 10, 2015; P. Martin, personal communication, May 20, 2015).

The following week, in late January 2008, SL was invited to table their letter to the chair and present preliminary findings in a public forum hosted by the Community Development Committee. During the public forum, councillors received SL’s oral presentation and a brief summary of preliminary research findings, as well as supplementary evidence supporting a scientific explanation for these findings.

SL first invited councillors to take some responsibility for suicide risk management at Lawyers Head, and then to consider the effectiveness of road closure in suicide risk management at Lawyers Head through the lenses of public profile and accessibility, i.e., the

¹ Senior lecturer requested anonymity. The same courtesy was extended to all case study actors; the name and gender of each concealed throughout.

headland's popularity; and the distance, possible modes of transport, time and conditions (environmental, social and physiological) involved in each route there, e.g., via John Wilson Ocean Drive or the Chisholm Park Golf Course. In doing so, SL assumed the role of primary science communicator.

SL then characterised the most likely journey to Lawyers Head for a vulnerable member of the community, before and after road closure, and attributed the effectiveness of road closure to the almost half-hour walk along John Wilson Ocean Drive to Lawyers Head, especially in an exposed coastal area that is favoured among locals and visitors to the city alike.

Regarding modes of transport to Lawyers Head, Dunedin Taxis confirmed in October 2017 that it did not have a policy restricting drop-offs to the headland. The manager could not recall adopting such a policy after a suicide-related event at Lawyers Head involving Dunedin Taxis, and asserted that half the drivers of their current fleet had not been on staff when that incident took place, so most would be unlikely to even consider a drop-off there suspicious nowadays (S. Green, personal communication, October 10, 2017).

Given the small number of suicide deaths (and related individuals of concern) by jumping in Dunedin, and some unavailable statistics, site substitution by the suicidal during road closure could only be ruled out dubiously, and method substitution could not be ruled out at all. However, SL presented councillors with scientific evidence from the United Kingdom, which suggested restricting one method of suicide does not inevitably lead to a compensating rise in the use of others (Kreitman, 1976) – interpreted in this case to apply for both method and site substitution.

A secondary objective for science communicators in this case was to reduce public harm (B. Benn, personal communication, May 10, 2015). If site or method substitution had occurred while access to Lawyers Head was restricted, alternative suicide deaths (and related matters of concern) may still have resulted in less harm overall.

Suicide-related events at Lawyers Head, compared with some other jumping sites or methods, can be both public and physically traumatic. Many witnesses may attend the scene of a suicide-related event at Lawyers Head, negotiation and rope rescue teams are at risk when responding to call-outs there, and marine search and rescue crews are similarly vulnerable when performing a rescue or body recovery at the foot of the headland.

Most often, however, these body recoveries are performed on shore, either because acts of suicide at Lawyers Head are carried out inconspicuously (after dark or from a concealed location), or because it is deemed too dangerous for marine search and rescue crews to reach bodies on the rocks or in the surf (B. Benn, personal communication, May 10, 2015). Shoreline body recoveries are usually prompted by members of the public who encounter the disfigured remains of suicide victims while visiting the beach. Although emergency services personnel will be quick on the scene to contain and assess the situation, other witnesses may attend the scene prior to their arrival.

Ultimately, many people can become involved in a single suicide-related event at Lawyers Head, some putting themselves at significant physical risk, and all susceptible to varying degrees of psychological trauma. This public harm calculation has yet to even account for the serious negative effects of suicide-related events at Lawyers Head on those closest to the suicidal, but it illustrates how method or site substitution during road closure, although still undoubtedly tragic, may have reduced the overall impact of suicide-related events in Dunedin on the local community.

Although SL emerged as the primary science communicator during a public forum hosted by the Community Development Committee in January 2008, a local senior police officer (PO) became another science communicator for councillors eighteen months later. PO had a wealth of headland-specific land and marine search and rescue experience (Porteous, 2010), worked alongside police negotiators, and devised the first “Lawyers Head action plan” (Lewis, 2006, p. 5). They volunteered as an emergency services representative to chaperone councillors on a site visit to Lawyers Head in June 2009, and answer any questions about relevant evidence supplied by police, e.g., callout statistics before and after road closure, or the characteristics of suicide-related rescues and recoveries there.

The following describes current physical risk management strategies at Lawyers Head. As was the case when this research was undertaken, bollards now exist on JWOD approximately 1.4 kilometres (a twenty-minute walk) from the headland. Bollards are removed Monday to Friday between the hours of 11 am and 3 pm, and remain in place during weekends and public holidays. The speed limit along JWOD is now 30 kilometres per hour and a pair of speed bumps is located along the drive on each side of the bollards.

A wooden fence with wire mesh exists well within the perimeter of the headland (distance from cliff edge varies, but at least five metres at any given point). Fencing is around 1.2

metres tall and two small signs are posted along it warning, "DANGER – CLIFF FACE". The Wright Memorial Lookout has discrete fencing, which appears at least as safe as that about the rest of the headland. However, the ninth hole of the Chisholm Park Golf Course (located in the lookout foreground) is unfenced. Other council plans for Lawyers Head at one time or another throughout the case included new plantings, [prohibitive] physical barriers, and an emergency communication device (Morris & Loughrey, 2010, p. 1).

2. Objectives

Sir Peter Gluckman, chief science advisor to the Prime Minister of New Zealand, stated in a report five years ago, “Good science cannot make policy, but bad science or the absence of science will almost certainly lead to poor-quality decisions” (Gluckman, 2013, p. 24). The role of robust scientific evidence in quality policy development, however, had been suggested to vary on the basis of policy type and setting. Practice policies, such as those formulated in evidence-based medicine, are influenced most by research evidence, whereas service and governance policies regulating resource allocation and organisational structures, respectively, are influenced less by research evidence and more by social and financial objectives (Black, 2001). It had also been suggested that research evidence is more influential in central than local policy – the latter “where policy-making is marked by negotiation and uncertainty” (Black, 2001, p. 277).

This research aimed broadly to examine science in policy. In particular, it sought to ascertain the role and impact of presenting key decision makers with scientific evidence in policy development. The case study, “Science communication in risk management at a high-incidence location for suicide”, was devised to refine this broad research aim and examine, more specifically, the role of scientific evidence in the development of risk management policy by local government and the media, in response to the burgeoning reputation of a nearby headland as a high-incidence location for suicide. Local government representatives were responsible for service policies regulating public access to the headland. Media representatives were concerned with practice policies for the reporting of suicide-related events at the headland, and risk management policy developments in local government.

If the role of robust scientific evidence in quality policy development is essential, but can vary on the basis of policy type and setting, then the utility of science in policy cannot be determined by policy outcome; there being no fixed relationship between policy input

(evidence and communication) and policy output (comprehension and integration). Instead, the utility of science in policy in this case was assessed on the basis of basic advertising principles (Dyer, 1982) by input with respect to output, i.e., how well the primary science communicator (SL) was able to characterise the audience, anticipate audience comprehension and integration, and gather and present scientific evidence (and themselves) accordingly.

One aspect of this strategy for the primary science communicator was risk communication. It had been suggested that the effectiveness of risk communication could be associated with the credibility and trustworthiness of the communicator. Therefore, this investigation sought to determine whether study participants perceived the primary science communicator, who attempted to convey suicide risk at Lawyers Head, as credible and trustworthy; and whether factors influencing these judgements were consistent with those identified by Renn and Levine (1991). These factors include, for example, credibility resulting from perceptions of expertise and transparency, as well as trust developing out of perceived credibility, but also objectivity, fairness, consistency and good will.

Another aspect of this strategy for the primary science communicator was audience characterisation. International psychological and anthropological research had examined attitudes towards science and suicide, and patterns were observed between these attitudes and certain demographic characteristics like gender, ethnicity and religion (Foo, Alwi, Ismail, Ibrahim, & Osman, 2014; Jones, Howe, & Rua, 2000; Miller, Scott, & Okamoto, 2006; Neeleman, Wessely, & Lewis, 1998). Similarly, patterns were observed between attitudes towards suicide, and personal experience with suicide (Leane & Shute, 1998; Overholser, Hemstreet, Spirito, & Vyse, 1989; Renberg & Jacobsson, 2003). Therefore, this investigation also sought to determine whether relevant observations from this case study were consistent with the scientific literature (even if results among a small sample population here were unlikely to be statistically significant).

Local government and media representatives were likely to have encountered alternative sources of relevant scientific information throughout decision-making on risk management at Lawyers Head. For example, councillors and journalists might have searched the Internet, or consulted an expert acquaintance. The previous 'input with respect to output' assessment model could not feasibly have been applied to every one of these alternative sources, because their communication strategies were unknown and would not always have been

targeted. Therefore, the role of science in policy in these instances had to be gauged anecdotally, i.e., based on survey and interview responses or media coverage.

If the optimal utility of scientific evidence in risk management policy development was not realised in this case, a set of recommendations was to be drawn up for the primary science communicator and/or those fulfilling advisory roles in local government and the media, e.g., council staff and newspaper editors. The feasibility of adapting science advisory systems from central government could be floated in response to any unmet local government or media need, too.

Utility measures for science in policy could then be compared for local government and the media to explore the aforementioned hypotheses: would regional media practice policies for the reporting of suicide-related events at Lawyers Head and risk management policy developments in local government, be influenced more by scientific evidence than local government service policies regulating public access to the headland?

In essence, I wanted to answer four very specific questions. First, what scientific evidence were councillors and journalists exposed to? Second, how was that evidence presented to them? Third, how did it ultimately influence their decision-making? And, finally, how could scientific evidence, and its communication, have been more compelling for these distinct groups of influencers within their community?

A similar case study was conducted on risk management at Gap Park in Sydney, another high-incidence location for suicide (Lockley *et al.*, 2014). As well as tracing the development of suicide risk management strategies at the park, the study evaluated their collaborative, multi-faceted approach with statistical analyses. Researchers held discussions with project stakeholders, but revealed little of their thematic analysis in the paper.

In contrast, the present case study on suicide risk management at Lawyers Head was primarily concerned with examining decision-making processes for councillors and journalists. It served to support an essential role for robust scientific evidence in quality policy development, and fulfilment of the optimal utility of that “good science” in policy (an indicator of the most effective science communication in a policy context).

3. Literature review

Councillors, journalists and science communicators were not necessarily exposed to the following bodies of evidence. Some of the papers referenced below were not even published when the case began. However, this literature review served as a knowledge bank from which evidence could be drawn upon as study contributors made mention of it, loosely framing an ‘evidential scope’ for the case.

3.1 Means restriction

Councillors confronted by the burgeoning reputation of a local headland as a high-incidence location for suicide were responsible for service policies regulating public access to the site. A senior lecturer in psychological medicine invited councillors to consider permanently closing the single road to the headland, as an effective way of ‘restricting access to means’.

An ecological model of suicide depicts a socio-cultural environment in which a suicidal intention in a physical environment leads to a suicidal act with either a fatal or non-fatal outcome (Durkheim, 1897). Suicide can therefore be considered “the final step in a series of independent yet interrelated factors and pathways”, where preventing suicidal acts is primarily about controlling a person’s basic physical environment rather than their complex suicidal ideation, i.e., “restricting access to means of suicide” (Bertolote, 1993, p. 3).

Substantial international evidence supported the risks of access to suicide means (Sarchiapone *et al.*, 2011). For example, in the United States (US) where elderly white men were at highest suicide risk, and firearms were the most common suicide method, the presence of a handgun in the home was associated with increased suicide risk (Conwell *et al.*, 2002). Similarly, although pesticide poisoning accounted for just over ten per cent of all suicides in Taiwan, almost half of these occurred in sparsely populated agricultural East and Central Taiwan (Chang *et al.*, 2012).

Global suicide patterns derived from the World Health Organisation mortality database were consistent with the above, with firearm suicide being the most common method in the US where gun control laws were lax, and pesticide poisoning being a major problem in rural Latin American and Asian countries (Ajdacic-Gross *et al.*, 2008). Also among these patterns was the important role of jumping from a height in small, predominantly urban societies

such as Hong Kong, Luxembourg and Malta. However, no distinction was drawn between jumping from the height of a building, bridge or cliff in these locales.

Some evidence also supported the preventive potential of restricting access to suicide means (Sarchiapone *et al.*, 2011). For example, there were marked declines in suicide rates in England and Wales in the 1960s, partly attributable to the detoxification of domestic gas supplies (Gunnell, Middleton, & Frankel, 2000). Similarly, improved diagnosis of depressive illnesses, and the introduction of benzodiazepines (replacing barbiturates) in Australia between 1962 and 1973, resulted in a steady decline in suicide rates from drug overdose, and a smaller fall in rates of suicide by other means (Whitlock, 1975).

Means restriction had been explored abroad at the following high-incidence locations for suicide by jumping: the Gateway Bridge in Brisbane (Cantor & Hill, 1990), Niagara Falls in Ontario (Ross & Lester, 1991), Ellington Bridge in Washington, D.C. (O'Carroll & Silverman, 1994), Jacques Cartier Bridge in Montreal (Prévost, Julien, & Brown, 1996), Westgate Bridge in Melbourne (Goldney, 2000), Beachy Head in Sussex (Isaac & Bennett, 2005), Clifton Suspension Bridge in Bristol (Bennewith, Nowers, & Gunnell, 2007), the Cornell University gorges in Ithaca (Beautrais *et al.*, 2010), Muenster Terrace in Bern (Reisch & Michel, 2011), Golden Gate Bridge in San Francisco (Whitmer & Woods, 2013), and the Gap in Sydney (Lockley *et al.*, 2014). However, only the Beachy Head example dealt with road closure.

The preventive potential of means restriction was consistently tempered by method substitution. Scientific consensus appeared to be that jumping site barriers led to a reduction in the number of suicides where installed, but not necessarily to the overall local suicide rate (Sarchiapone *et al.*, 2011). However, barriers at high-profile jumping sites bore greater preventive potential because they restricted access to what could be uniquely symbolic means of suicide (Gunnell & Nowers, 1997; Rosen, 1975).

Opportunities to lower the suicide rate in New Zealand through means restriction were reported to the Ministry of Health at the turn of the century (Beautrais, 2000). National suicide trends suggested that almost four times as many males died by suicide as females; and male suicide rates were steadily increasing, while female rates were stable. Trends also revealed that four methods accounted for over ninety per cent of all suicides from 1977 to 1996: hanging, vehicle exhaust gas, poisoning, and firearms.

The report, “Restricting Access to Means of Suicide in New Zealand”, concluded that means restriction alone would be unlikely to significantly reduce suicide rates in New Zealand, as materials and opportunities for the two most common suicide methods (hanging and vehicle exhaust gas) were “ubiquitously available”. It nonetheless recommended restricting access to high-incidence locations for suicide (Beautrais, 2000).

During the present research period, means restriction had only been formally studied in New Zealand at two high-incidence locations for suicide by jumping: Grafton Bridge in Auckland (Beautrais, 2001; Beautrais *et al.*, 2009), and Lawyers Head in Dunedin (Skegg & Herbison, 2009). Grafton Bridge studies looked first retrospectively at the impact of steel barrier removal in 1996, and then Perspex canopy installation in 2003. The Lawyers Head study investigated the impact of road closure in 2006. All three studies supported a preventive role for means restriction at high-incidence locations for suicide. Only the latter, however, drew a conclusion about method substitution – there being “no evidence” of it. That said, such an observation was limited to “other jumping sites” rather than all other methods.

Councillors in the present case were primarily invited to consider permanently closing the single road to Lawyers Head. As reviewed earlier, this direct road access to the jumping site was associated with increased suicide-related callouts and deaths there. Evidence supporting the preventive potential of this precise form of means restriction was limited to a local study (Lawyers Head) with what would eventually be a two-year closure period, and a British comparison study (Beachy Head) with only a six-month closure period. However, the larger body of evidence supporting physical barriers at jumping sites could still have been useful for councillors – they began seriously considering safety fence options for Lawyers Head (as a supplementary or alternative form of means restriction) in November 2009.

Proposals for road closure and fencing in the present case were weakened by the possibility of method substitution, i.e., neither risk management strategy absolutely prevented a person suiciding elsewhere, by some other means. However, this review of the scientific literature revealed that method substitution as an unfortunate result of means restriction (e.g., road closure or fencing) was considered justifiable among public health experts if alternatives: a) were less likely to prove fatal (Barber & Miller, 2014); or b) reduced public harm (Bernan, 1990). Risk management strategies pursued on the grounds of the latter could not really be categorised as ‘suicide prevention’ though.

3.2 Suicide in the media

Journalists confronted by the burgeoning reputation of a local headland as a high-incidence location for suicide were concerned with practice policies for the reporting of suicide-related events at the headland, and risk management policy developments in local government. A senior lecturer in psychological medicine invited journalists to consider moderating headland coverage, as a responsible form of suicide reporting or ‘restricting cognitive access to means’ (Daigle, 2005).

The Werther effect describes the increase in suicides after a story of suicide is publicised in the news, due to “the influence of newspaper publicity on suggestible potential suicides” (Phillips, 1974, p. 343) or “an observer copying suicidal behaviour they have seen modelled in the media” (Pirkis, Blood, Beautrais, Burgess, & Skehan, 2006, p. 82). This phenomenon was named after an historical Goethe novel, *The Sorrows of Werther*, in which the hero took his own life. When read widely across Europe, the novel was thought to have led people in many countries to end their own lives as Werther had (Phillips, 1974).

International evidence spanning decades supported a relationship between non-fictional portrayals of suicide in newspapers, books and television, and actual suicides (Pirkis & Blood, 2001). More recent studies espousing this “contagion” effect detailed exposure to suicide movies (Stack, Kral, & Borowski, 2014) and reporting on the death of a celebrity (Fink, Santaella-Tenorio, & Keyes, 2018). However, evidence supporting a relationship between print media coverage of suicide at a specific location, and actual suicides there, was limited to a series of empirical papers about a single Viennese subway (Etzersdorfer & Sonneck, 1992, 1998; Niederkrotenthaler & Sonneck, 2007; Sonneck, Etzersdorfer, & Nagel-Kuess, 1994).

The subway system opened in 1978 and developed a reputation as an “increasingly acceptable” means of suicide (Etzersdorfer & Sonneck, 1998, p. 67). The Austrian Association for Suicide Prevention formed in response to “very dramatic” mass media reporting of the subway suicides (p. 67). It campaigned from mid-1987 for media guidelines on suicide reporting, and the subway suicide rate thereafter decreased by 75 per cent. The same guidelines were later found to have changed “the quality and quantity of media reporting” right across Austria, and reduced suicide deaths there by 81 per year (Niederkrotenthaler & Sonneck, 2007, p. 419).

The preventive potential of moderated suicide reporting was explored with similar sets of media guidelines in Australia, New Zealand, America, Canada, the United Kingdom, Hong Kong, Sri Lanka, and the World Health Organisation (Pirkis *et al.*, 2006). All advised journalists to avoid sensationalising or glamourising suicide, or providing specific detail about the suicide; to recognise the importance of role models, take the opportunity to educate the public, and provide help or support to vulnerable readers or viewers. All but one of nine sets of guidelines considered the aftermath of suicide, but only three acknowledged that journalists, too, were vulnerable.

As would have been relevant for print media coverage of Lawyers Head, all guidelines advised against publishing photos of the suicide location. However, this recommendation was among those for which there was “not yet research evidence” but was nonetheless “common sense” and “consistent with proper professional behaviour” (Pirkis *et al.*, 2006, p. 84).

Despite widespread media guideline development and distribution, there was initially “little evidence” in support of them (Goldsmith, Pellmar, Kleinman, & Bunney, 2002, p. 279). Interviews with a small group of journalists from across the US revealed that not one knew of media guidelines on suicide reporting, although some sympathised with a need for them (Jamieson, 2001). Qualitative research in New Zealand suggested guidelines had been “largely ignored by the news media”, at least in part because senior media representatives “strongly opposed” reporting restrictions (Tully & Elsaka, 2004, p. ii). Similarly, an analysis of suicide content in Hong Kong newspapers suggested guidelines had not resolved the problem of sensational suicide reporting there, particularly regarding suicides involving students (Au, Yip, Chan, & Law, 2004).

Evaluations recommended a more collaborative approach to media guideline development. As such, research was conducted in New Zealand to clarify the media perspective on suicide reporting (Collings & Kemp, 2010). Journalists perceived common ground with health policymakers in the protection of the public good. However, they preferred to let market forces rather than policymakers dictate what was in the public interest.

A chief coroner echoed the calls of some journalists in New Zealand to “gently open things up a bit” and loosen reporting restrictions on suicide (Johnston, 2010, para. 11), but at least one analysis deemed the coroner’s position contradictory: seeking to liberalise traditional media whilst tightening up on social media (Scarth, 2013). An amendment to the Coroners

Act was passed six years later, which allowed journalists to report a death as a “suspected suicide” (NZ Parliament, 2016). However, another more recent analysis of the chief coroner’s controversial statements concluded they had had little influence, i.e., his act had not been “a licence for the press to report more frequently on individual suicide cases” (Collings, Slim, Stanley, & Jenkin, 2018, p. 7).

Journalists in this case were primarily invited to consider moderating Lawyers Head coverage. Evidence supporting the preventive potential of this precise form of cognitive means restriction was limited to one Austrian study from twenty years earlier, and researchers’ “common sense”. Furthermore, as dissension over headland access strengthened, only at a stretch could related news stories be considered ‘suicide reporting’.

3.3 Science communication

A senior lecturer in psychological medicine confronted by the burgeoning reputation of a local headland as a high-incidence location for suicide voluntarily advised councillors and journalists on restricting access to physical and cognitive means of suicide, respectively. In doing so, SL inadvertently assumed the role of primary science communicator. Science communication guaranteed a role for scientific evidence in risk management policy development by councillors and journalists, and influenced the utility of that evidence in decision-making.

The philosophy of science, a field of relevance to the present investigation, explores the foundations, methods and implications of science. The demarcation problem within this discipline is about the distinction between science and non-science. Definitions of science over time have included the terms empirical, logical, infallible, verifiable and falsifiable (Laudan, 1983). The demarcation problem persists, but efforts to solve it have taught the modern-day scientific community lessons about the nature of discovery, and the subjective meaning of different knowledge types.

Growing demand for public understanding of science has been attributed to the knowledge economy and new media (Bauer, 2008). It was considered vital for a society affected more and more by scientific developments and evidence-based policies (Nelkin, 1995). Science communicators were to serve in facilitating engagement between the scientific community and industry, government and the public (Huntington, 2008).

A contemporary definition of science communication describes “the use of appropriate skills, media, activities, and dialogue to produce one or more of the following personal responses to science: awareness, enjoyment, interest, opinion forming, and understanding” (Burns, O’Connor, & Stocklmayer, 2003, p. 191). Best practice in science communication has matured from the post-war deficit model based on mere dissemination of information, where the scientific community perceived the public as hostile and ignorant but persuadable. Even an interactive dialogue model characterised by public engagement and consultation is now being superseded by a participation model where the scientific community and the public shape issues and negotiate meanings together (Trench, 2008).

One author explored models of science communication in a policy context through characters: the pure scientist, the science arbiter, the issue advocate, and the honest broker of policy alternatives (Pielke, 2007). Characters varied by their ability or willingness to share information, translate information, explore options, and weigh in on options. The honest broker was endorsed for “expanding the scope of choice” (p. 152) through an objective and thorough investigation of all options. However, as with comparisons of the science communication models above, it became apparent to the researcher that context could limit the feasibility or appropriateness of taking certain approaches.

Strong science communication in education was characterised by a narrative rather than paradigmatic structure (Negrete & Lartigue, 2010), and in advocacy by messages “tailored to the needs and predispositions of particular audiences; in some cases to directly challenge fundamental misconceptions, in others to resonate with strong held values” (Leiserowitz, 2006, p. 64). Both recommendations jarred with some of the models or characters above, which again suggested that context could limit the feasibility or appropriateness of taking certain approaches.

After five years as chief science advisor to the Prime Minister of New Zealand, Sir Peter Gluckman offered his take on “the art of science advice to government” (2014, p. 163). His guidelines included protecting the independence of advice, reporting to the top, expecting to inform rather than make policy, demonstrating science privilege in policy input, recognising science limitations, acting as a broker rather than an advocate, engaging the scientific and policy communities, and building trust.

Science communication includes a diverse array of sub-disciplines, from policy advice to advocacy and activism. Even within each sub-discipline, best practice in science

communication varies by desired outcome. No one pursuit is nobler than another, with full disclosure. Dishonest knowledge brokers threaten democracy, but Gluckman himself described “nudging attitudes” within the policy community (2014, p. 165); and in an age of “knowledge marketing” where no two honest brokers can be the same, Bauer rightly called on a “critical public” (2008, p. 9), i.e., for members of the public to hold their elected officials (and, indirectly, their officials’ advisors) to account on the evidence base with which they devise policy.

In the Lawyers Head case, inadvertent science communicators from local public health and emergency services voluntarily advised councillors and journalists on restricting access to physical and cognitive means of suicide, respectively. They played ‘science arbiters’ (Pielke, 2007, p. 16), prompting [paid] ‘honest brokers’ (p. 17) in local government and industry to assess their options. Science communication was a discipline in its infancy when the case unfolded, locally at least. Therefore, people advising councillors, journalists or members of the public on scientific matters during this time were unlikely to have engaged with the relevant literature.

4. Methods

4.1 Sampling

Informal meetings to generate background information on dissension over Lawyers Head access were the product of snowball sampling (see Biernacki & Waldorf, 1981). People referenced in council documents or media coverage were consulted and invited to make referrals on the basis of perceived case knowledge. Possible biases stemming from snowball sampling were deemed tolerable given the informal nature of these meetings, all of which were held in just the preliminary stages of the case study.

A selective, purposive sampling method (or “judgement sampling”) was then used to determine the sample population for this case study (Bernard, 1998, p. 187). Eligible study participants met strict criteria, thus potentially fulfilling a greater research purpose. This sampling method was imperative to examine science communication in a very specific context, but could not be considered an effective representative sampling method (Kruskal & Mosteller, 2006).

Prospective study participants served on the Community Development Committee of Dunedin City Council from 2007 to 2010. A Dunedin City Council customer service representative identified these people. Contact details for policy makers who remained on council were obtained from the Dunedin City Council website; those for former councillors were found in the local directory, online sources, or the Dunedin District Electoral Roll held at Dunedin City Library. Contact was established with eligible study participants via telephone or email.

4.2 Data collection

4.2.1 Background

Eligible study participants were invited to meet informally with the researcher, reflect on their experiences, and discuss the proposed research project further. Informal meetings were also held with some members of council staff, representatives of the Dunedin School of Medicine, *Otago Daily Times*, Southern District Police, Dunedin Marine Search and Rescue, Southern District Health Board, the Emergency Psychiatric Service at Dunedin Hospital, and Tahuna Wastewater Treatment Plant.

This background investigation enabled the researcher to develop a greater understanding of dissension over Lawyers Head access from 2007 to 2010, confirm a role for scientific evidence in councillors' decision-making (thus guiding formal data collection), and gauge councillors' interest in contributing further to the proposed study. Eligible study participants were updated via email as ethical approval of the research was sought. Most findings from the background investigation have been described in the introduction.

The University of Otago Human Ethics Committee reviewed and approved all subsequent research. Its advice was that full consideration be given to the very sensitive nature of the topic of suicide, and that case actors' anonymity be protected, especially upon publication.

4.2.2 Local government

Data collection first involved study participants completing a written survey with five sections: process, transmission, interpretation, evaluation, and personal (definitions of these constructs are provided below). Participants could choose to have their survey posted or

hand-delivered to them. The researcher offered to sit with participants during survey completion to provide clarification where necessary and support during reflection.

Survey packages included a cover letter, information sheet, consent form, and questionnaire booklet. To protect the anonymity of case study actors, a sample survey package has not been provided. The questionnaire was lengthy and detailed, so it was important to assure study participants in the cover letter of some study limitations: foremost, that their recall accuracy would likely (and understandably) be imperfect, not only as a result of the eight years passed since the case began, but also because of the dense and complex political environment in which the case unfolded. Surveys were expected to take up to an hour to complete and study participants were given three weeks to return their booklets.

“Process”, the first section in the survey, traced decision-making on suicide risk management at Lawyers Head by local government and, to a lesser extent, by local media. Councillors were asked to confirm their awareness of, or attendance at particular events, as well as their stance on certain motions and publications. For example, “Were you present at the Community Development Committee meeting on June 10, 2008?” and “Did you support the motion put at that meeting to retain the gate on John Wilson Ocean Drive until the public was consulted as part of the Ocean Beach Domain Management Plan review?” Council meeting attendance and voting on administrative matters could in some instances be checked against council records. However, as this was inconsistent, councillors were canvassed on their behaviour throughout case proceedings, and responses validated where possible.

“Transmission”, the second section in the survey, determined the scientific evidence councillors were exposed to (passively and actively) during this process, including any interactions with science communicators. For example, “During the second site visit to Lawyers Head, what new scientific information did you receive about the proposed permanent closure of John Wilson Ocean Drive?” and “Did you receive scientific information about suicide risk management at Lawyers Head from any other experts?” It should be noted that the first two sections were integrated in results for simplicity.

Survey questions in the foregoing sections were comprised based on archival council agendas, minutes, and reports; informal meetings with councillors, reporters, and others; and all *Otago Daily Times* articles covering dissension over Lawyers Head access from 2007 to 2010. Council documents were accessed via the Dunedin City Council website and,

where documents were omitted from the online archive, with the assistance of council staff. Newspaper articles were sourced as outlined in the media passage to follow.

While tracing decision-making on suicide risk management at Lawyers Head, it became apparent that two major suicide prevention strategies had been proposed: restricted vehicular access to John Wilson Ocean Drive, and safety fencing atop the headland. During informal meetings with councillors, journalists and others, it also became apparent that a primary science communicator had been responsible for presenting councillors and journalists with most scientific evidence as dissension over Lawyers Head access strengthened. As stated in the case history, this was a senior lecturer in psychological medicine at the University of Otago (i.e., SL).

Information on scientific evidence was sought in “Transmission” according to the proposed suicide prevention strategy it regarded, i.e., road closure or fencing. Information on scientific evidence associated with general suicidality was retrieved separately. Survey questions focussed on the input of the primary science communicator, but councillors were given the opportunity to describe the relevant input of other experts, too.

“Interpretation”, the third section in the survey, sought to determine how scientific evidence influenced decision-making on suicide risk management by councillors. Survey questions addressed not only how scientific evidence factored into councillors’ cost-benefit analyses of different suicide risk management strategies, but also how characteristics of the primary science communicator influenced their respective interpretations of the evidence. Councillors were then given an opportunity to reflect on the effectiveness of the suicide prevention strategies implemented at Lawyers Head, regardless of their initial stances. Examples of the types of question included in this section are, “Did scientific evidence suggest to you any potential value in permanent closure of John Wilson Ocean Drive?” and “Do you think current regulations on public access to Lawyers Head have been effective in managing suicide risk there?”

“Evaluation”, the fourth section in the survey, sought to assess how effectively the relevant scientific evidence and arguments were communicated to councillors. Survey questions probed the perceived link between scientific understanding and informed decision-making for councillors, evaluated science communication processes in the case, and explored avenues for improved science communication (and/or improved scientific understanding in the absence of the primary science communicator, e.g., departmental science advisors in

local government). For example, councillors were asked, “Would you have preferred greater interaction with the science communicator to improve your understanding of suicide risk management?” and “Would you have preferred the input of a different or additional science communicator?”

“Personal”, the fifth and final section in the survey, collected demographic information from councillors and enquired about their personal experiences with suicide. Demographic information was sought according to the model provided in New Zealand's *2006 Census of Population and Dwellings* (Statistics New Zealand, 2006). Despite the small sample size, demographic characteristics were surveyed to account for the possibility that study participants' positions on science and/or suicide could be predicted on these bases.

International psychological and anthropological research had been conducted into attitudes towards science, and patterns had been observed between certain demographic characteristics and these attitudes (Foo *et al.*, 2014; Jones *et al.*, 2000; Miller *et al.*, 2006; Neeleman *et al.*, 1998). Therefore, relevant observations from this case study were of interest, as they could be compared with existing data from the scientific literature.

Study participants were also asked to provide information about their personal experience with suicide. This was done to account for the possibility that their attitudes towards suicide could be predicted on these bases. Again, results here were unlikely to be statistically significant, but any observations comparable to those in the scientific literature (e.g., Leane & Shute, 1998; Overholser *et al.*, 1989; Renberg & Jacobsson, 2003) were of interest.

Councillors were encouraged to submit any extended survey responses on supplementary paper. They were also given the opportunity to make closing remarks on the back of the questionnaire booklet. Survey responses were collected and recorded in a Microsoft Excel spreadsheet for subsequent content analysis. Illegible survey responses were clarified with the study participants concerned.

Following survey submission, data collection for the local government component of this case study involved councillors meeting with the researcher for a semi-structured interview. Interviews served to generate richer data, allowing for a closer examination of councillors' positions on science and suicide.

Participants were first invited to elaborate on their survey responses – their personal experience(s) with suicide in particular. Four major themes then guided each interview:

attitudes, knowledge sharing, science in policy, and reflection. Interview questions can be found at the rear of the survey package in the Appendix. Interviews were, however, only semi-structured, so questions served as a guide rather than a strict script.

Interviews were conducted over thirty to fifty minutes at each participant's convenience, i.e., set in their homes or workspaces, at times that best suited them. Sessions were audio-recorded and transcribed into a Microsoft Word document. Inaudible features of audio recordings were clarified with the study participants concerned. All transcripts were then segmented according to the interview questions or themes addressed, and transferred into a Microsoft Excel spreadsheet for subsequent content analysis.

The researcher prepared for interviews by engaging with the scientific literature on sensitive interviewing. Papers addressed, for example, interviewing practices in sexual health, mental health, and domestic violence research (e.g., Corbin & Morse, 2003; Dickson-Swift, James, Kippen, & Liamputtong, 2006; Elam & Fenton, 2003; Garcia-Moreno, 2001).

The researcher also met with Jane Millichamp, a professional practice fellow in psychological medicine at the University of Otago, to receive basic training in interviewing on sensitive topics. Survey assistance and interview visits by the researcher were logged manually and digitally with administration at the Centre for Science Communication as a workplace health and safety requirement.

4.2.3 Media

The present case study also sought to trace decision-making on suicide risk management at Lawyers Head by local media. Given time and resource constraints, it was necessary to select a local news media outlet to represent general coverage of dissension over headland access from 2007 to 2010.

The *Otago Daily Times (ODT)*, a regional publication, was first distributed in 1861, making it New Zealand's oldest daily newspaper (Reed, 1956). Dunedin is home to about 120,000 of the 200,000 residents across the Otago region (Statistics New Zealand, 2013), with a transient student population of approximately 20,000 (University of Otago, 2014). The *ODT* had an average issue readership of 97,000, and 159,000 are estimated to purchase at least one copy per week (Nielsen, 2013).

Comparable audience statistics for alternative media outlets in the area indicated that the *ODT* occupied a significant and well-established niche among local news providers. *The Star* is a free newspaper distributed to the homes of 47,000 Dunedin residents each week (Allied Press, 2015a). This tabloid was established in 1979 as successor to Dunedin's daily evening newspaper from 1863, *The Evening Star*, following a slow decline in its readership during the 1970s (Allied Press, 2015b). Gauging readership from a free home delivery base is imprecise, but for every household that disregards the newspaper, it is conceivable there are others in which many readers engage with the tabloid, so 47,000 is a reasonable estimate.

Radio Dunedin was established in 1922 as the first radio station in New Zealand (McLintock, 2009). With a community focus for listeners over the age of forty years, Radio Dunedin registered in the Dunedin Commercial Radio Audience Measurement Survey for 2015 as having the greatest share of commercial radio listening in Dunedin: 13.1 per cent of survey participants reported listening to Radio Dunedin, followed closely by 12.4 per cent listening to The Rock FM and 9.6 per cent listening to Newstalk ZB (Ly, 2015). Although the actual sample size for the survey was 839, the survey area population potential was 99,100, so Radio Dunedin could be estimated to have up to 13,000 listeners – a figure unlikely to have changed significantly since the period spanning 2007 to 2010.

Dunedin Television began as a regional television station for tourism in 1995, but expanded to a full-service station with local news in 1997 (Allied Press, 2015c). In a recent independent audience survey, more than 40 per cent of Dunedin residents with access to Dunedin Television reported watching the station; about 18 per cent of all Dunedin residents reported tuning in to a local news bulletin on the station at least once a week (Dunedin Television, 2015). In a city of about 120,000 people, Dunedin Television could be estimated to have at least 21,600 news viewers over a given week – an audience still dwarfed by the *ODT* readership.

Ultimately, the researcher was confident that *ODT* coverage of dissension over Lawyers Head access from 2007 to 2010 was representative, if not over-representative, of the local media attention afforded to the controversy. To reiterate, this dissension was sparked by the proposed permanent closure of the single road up to Lawyers Head, John Wilson Ocean Drive; and later spurred by costly safety fencing proposals for the headland.

Local news media representatives were not formally surveyed in this case study. A trace of decision-making on suicide risk management at Lawyers Head by local news media representatives was generated by retrieving all *ODT* articles covering dissension over headland access from 2007 to 2010. Some features of this trace were addressed in the survey, so councillors could comment on the role of local news media in suicide risk management at the headland.

Newspaper articles covering dissension over Lawyers Head access were retrieved from multiple sources. When the researcher met informally with two senior reporters who, among others, had been tasked with covering headland access for the *ODT*, one presented a stack of printed materials, which included articles they and others had written on the issue (albeit not a comprehensive collection). This provided the researcher with a foundation upon which to build a robust trace.

The *ODT* established an online platform (Allied Press, 2018) in 2008, so by entering the terms “Lawyers Head”, “John Wilson Ocean Dr”, “Ocean Beach Domain” and “Tahuna” into the website search tool, the researcher was able to find lists of relevant newspaper articles, editorials, opinions and online polls, as well as corresponding online commentary.

The researcher also used the Factiva database to search for *ODT* articles covering dissension over Lawyers Head access. Factiva is a global business information and research tool that bundles full-text content from a wide range of sources such as newspapers, journals, magazines and newswires. As with the *ODT*'s online archive, the researcher used four search terms in discrete blasts to retrieve relevant newspaper articles. However, with Factiva, a date range and source for content was included: January 1, 1996 to December 31, 2016; and the *Otago Daily Times*.

Twenty years by far exceeds the case study period from 2007 to 2010, but searching for articles over such a time enabled the researcher to gauge how journalists reported on Lawyers Head before dissension over public access to it sparked. Furthermore, the most recent search results detailed how a public access compromise was eventually struck at the headland in October 2013.

Factiva broadened digital search results, as the *ODT*'s online archive only stored articles from 2008 onward. It also returned brief court reports, word counts for each article, and more accurate publishing dates, thus saving time. However, Factiva search results did not include editorials, opinions, or online polls and commentary relevant to dissension over

Lawyers Head access. Both sources helped to paint a clearer picture of media coverage and thus decision-making in suicide risk management by local news media.

The researcher then accessed reels of historical microfilm at the McNab New Zealand Collection in Dunedin City Library. The *ODT* had been criticised for drawing unnecessary attention to Lawyers Head as a high-incidence location for suicide, so it was important to determine not only the size and content of relevant articles, but also the day on which articles were published, where in the newspaper they featured, and the size and caption of any associated images.

To refine this decision-making trace, some search results were excluded during microfilm validation. Any content that did not feature in print was removed, e.g., online opinions or polls. Inversely, however, if the researcher skimmed over a prominent letter to the editor about Lawyers Head in microfilm, it was added to the trace, as it would not have appeared in the *ODT*'s online archive or the Factiva database. This was by no means a comprehensive approach to recording relevant letters to the editor, but it would not have been feasible for the researcher to scan every *ODT* issue from the three-year trace period for such content.

Articles were logged in a Microsoft Excel spreadsheet for subsequent analysis; categorised by publishing date, day, heading, subheading, author, source(s), article type, page number, newspaper section, article position and word count, image dimensions, size and caption, and suicide-related content.

Suicide reporting policy at the *ODT* was deduced from informal meetings with two senior reporters and the editor-in-chief there. Senior reporters were among those tasked with covering dissension over Lawyers Head access from 2007 to 2010, and the editor-in-chief served in that role from 2007 to 2015. *ODT* representatives were forthcoming, not only about basic suicide reporting expectations, but also their interactions with local government representatives and science communicators as public interest in Lawyers Head access strengthened. Suicide reporting policy at the *ODT* revealed a role for scientific evidence in suicide risk management policy development by local news media, albeit inadvertent.

4.3 Data analysis

4.3.1 Local government

All written answers to survey questions for councillors had been recorded in a Microsoft Excel spreadsheet for subsequent content analysis. Similarly, all interview transcripts had been divided according to the questions or themes addressed, and copied into a spreadsheet.

Quantitative analysis could have been conducted for answers to closed-ended questions in the survey, but with a small case study sample population, results would not have been statistically significant, let alone representative. Instead, survey and interview responses were subjected to qualitative content analysis, which was for the most part inductive, i.e., without pre-determined themes (Elo & Kyngäs, 2008). Deductive content analysis was only employed for hypothesis exploration, e.g., when gauging if participants perceived science communicators as credible and trustworthy; and if factors influencing these judgements were consistent with those identified by Renn and Levine (1991).

Content analysis was performed as best feasibly satisfied the methodological recommendations of Kassirjian (1977). Kassirjian framed his highly cited paper on content analysis in the context of consumer research, but was heavily influenced by one of the 'fathers' of content analysis, Bernard Berelson, in particular his book, *Content Analysis in Communication Research* (1952). Kassirjian may not have devised his recommendations specifically for communication research, but scientific evidence could conceivably be interpreted as a consumer product. Furthermore, Berelson's definition of content analysis is widely criticised as the product of a positivist epistemology, whereas Kassirjian's recommendations were devised at time when the limitations of objectivity in qualitative research were generally better recognised (Krippendorff, 2004).

Kassirjian categorized his content analysis recommendations into objectivity items, systematization items, sampling methods and reliability measures. Categories invited the researcher to consider the formulation of explicit rules and procedures for coding in content analysis, the training of multiple independent judges in such coding, the pre-testing of procedures with trained judges, and inter-rater agreement between judges (Kassirjian, 1977). Content analysis in this case study implemented some of the recommendations above, but, for example, there was only one judge: the researcher, who was not independent. Recruiting multiple independent judges was not feasible for a project of this

size. Therefore, strict coding rules and procedures were formulated to account for any potential biases.

Content analysis of these datasets involved scanning responses for each question to compare and contrast key words and themes, then describing the “patterns, linkages and plausible explanations” through induction (Patton, 1999, p. 1191). This was a “creative process” (p. 1190) that depended on “astute pattern recognition” (p. 1191). However, “rival explanations” were logically tested, too, “for the best fit between data and analysis” (p. 1191).

Furthermore, descriptions of linkages and plausible explanations included outliers or “negative cases” (Patton, 1999, p. 1192) that did not fit within a pattern. Fortunately, survey and interview questions in this case were very specific, so comparing and contrasting responses to these was usually straightforward. Although, testing rival explanations prevented the odd subtle pattern going unrecognised.

4.3.2 Media

No formal data analysis was required to determine suicide reporting policy at the *Otago Daily Times*; it was fundamentally a case of deducing from informal interviews how journalists managed risk. Senior reporters and the editor-in-chief did, however, provide some policy leads that called for further investigation, e.g., referring to “the Act” and “the Press Council’s statement of principles”.

As for media coverage analysis, basic statistics could be generated from the spreadsheet, e.g., coverage period, article count, average article frequency and word count. It was also apparent from scanning the spreadsheet where in the newspaper articles appeared most often, and the incidence of accompanying images.

It was then important to illustrate the distribution of articles over the coverage period with a series of scatter plots; time in days (labelled in years) along the x-axis, and articles per day up the y-axis. An online date duration calculator (Time and Date, 2018) was used to determine the number of days from the first to the last article. A new pair of columns was inserted into the spreadsheet alongside original article dates, the first article was listed as point zero, and each article thereafter was designated a number according to the duration between its publishing date and that of the first. Therefore, each article could be plotted on a graph according to its date derivative and the number of articles published on that day.

Default labels for the x-axis were in the thousands of days, so alternatives in years had to be created and accurately overlaid in Microsoft Word; the online date duration calculator helped determine relative positions of the first day of each year. Brackets framing road closure and case periods, and crosses representing publicised suicide deaths at Lawyers Head, were positioned over scatter plots using the same method.

Parallel scatter plots for suicide-related and explicit suicide-related media coverage, respectively, were generated by inserting two more pairs of columns into the spreadsheet alongside original article dates. Suicide-related media coverage featured suicide deaths at Lawyers Head or proposed suicide risk management strategies there, while explicit suicide-related media coverage included the term “suicide”. By scanning the spreadsheet once for each, x- and y- values could be determined for all articles that met either set of criteria, and graphs could be plotted accordingly.

Media coverage analysis continued with a general description of the scatter plot series, e.g., peaks in article frequency and changes in coverage density, and comparative content analysis across the three datasets. Coding rules and procedures here were consistent with content analysis for local government survey and interview data.

5. Results

5.1 Local government

5.1.1 Survey

Personal

The following is a description of the case study sample population, as determined by results from the fifth and final section of the survey, “Personal”. Participants were invited to answer questions regarding demographic characteristics and personal experience(s) with suicide, as would have been accurate during the case (2007 – 2010). It was requested that any changes to these responses during the case, or since the case, be annotated in booklet margins. Different lines of questioning below follow on from one another with greater spacing.

Fourteen out of fifteen Community Development Committee members of the Dunedin City Council from the 2007 to 2010 local governmental term were available to participate in the

case study; one former committee member passed away in October 2011. Eleven out of fourteen councillors available agreed to participate in the case study. Three others chose not to participate because of workload and/or perceived redundancy, which is to say, an understanding that other participants would express their views.

The case study sample population of eleven consisted of eight males and three females, aged from 51 to 74 years (average age of 64 years). All participants were born in New Zealand and all but two identified as being solely of New Zealand European ethnicity; one identified as being of New Zealand European and Māori ethnicities, and another of Chinese ethnicity.

Nine out of eleven participants reported graduating from high school; one left high school after fifth form and another after sixth form. Seven out of eleven participants reported graduating from university with a bachelor's degree. Of the four others: two did not go on to higher education, one obtained an advanced trade certificate and business diploma, and one graduated from university with a master's degree (no reported undergraduate degree). Participants' major occupations spanned the legal, business and science sectors; the trades, hospitality and entertainment industries; and the public services.

Six out of eleven participants indicated Christianity as their religion, while two reported "no religion" and others did not answer the question. All but one participant was legally married and most parented two to four children; one participant did not have a child and another parented a single stepchild. Lastly, when elected to the Dunedin City Council (and designated a role on the Community Development Committee) in 2007, all participants had lived in Dunedin for at least ten years; some for their whole lives (up to 66 years).

It should be noted that one participant objected explicitly to questions regarding ethnicity, religion, and legal marital/civil union status, on the grounds that these questions were "irrelevant" to science communication and suicide risk management. International psychological and anthropological research had examined attitudes towards science and suicide, respectively, and patterns were observed between these attitudes and certain demographic characteristics (Foo *et al.*, 2014; Jones *et al.*, 2000; Miller *et al.*, 2006; Neeleman *et al.*, 1998). Therefore, relevant observations from this case study were of interest to the researcher as they could be compared with existing data from the scientific literature.

Regarding personal experience with suicide, nine out of eleven participants reported exposure to the attempted or completed suicide of a friend or family member; two described exposure to “many” suicide-related events throughout their respective “working [lives]”. Five others described exposure to more than one suicide-related event – usually a combination of friends and family members, from adolescents to the elderly, who had attempted or completed suicide by carbon monoxide poisoning, hanging, firearm, jumping or driving from height (one at Lawyers Head), or wrist cutting. Two more described exposure to suicide-related events involving a single friend or family member each.

Most respondents described suicide-related events taking place when friends or family members had experienced mental illness, e.g., “depressed and under psychiatric treatment” or “suffered from depression”. One attested to a particular suicide-related event still being “totally unexpected”. Another drew contrast between suicide-related events that were “very serious” rather than “attention-seeking”. Respondents described suicide-related events as “traumatic”, “difficult to work through” or “stressful”.

Two thirds of those exposed reported that their personal experiences with suicide had influenced their approaches to suicide risk management; most describing a greater sense of empathy and/or understanding towards the suicidal. Of the three participants who reported exposure to the attempted or completed suicide of a friend or family member, but did not perceive their personal experiences to have influenced their approaches to suicide risk management, two did not explain and one reported having “still relied on professional advice”.

Participants were then presented with a series of questions regarding individual personal experience with suicide; questions addressed suicide-related thoughts, desires, plans, and actions. Five out of eleven participants reported having never even thought about taking their own lives, four reported having only thought about it, another reported having thought about taking their own life and having wanted to, and one more reported having thought about taking their own life, having wanted to take their own life, having made a plan to take their own life, and having attempted to take their own life.

Of the six with individual personal experience with suicide, all but one reported that their varying degrees of exposure had influenced their approaches to suicide risk management; most describing a greater understanding of the needs of the suicidal and/or the impact on

those close to them. The participant who had some level of individual personal experience with suicide, but did not perceive this experience to have influenced their approach to suicide risk management, provided no explanation.

One participant took offence at questions regarding personal experience with suicide; claiming the questions implied that a lack of personal experience with suicide (individual or otherwise) lessened their concern for the interests of the suicidal. As in response to the previous survey objection, requesting information in this instance about participants' personal experience with suicide served to generate data comparable with that in the scientific literature (Leane & Shute, 1998; Overholser *et al.*, 1989; Renberg & Jacobsson, 2003). Results here were unlikely to be statistically significant with a small case study sample population, but any observations relevant in some way to those described in the scientific literature were of interest to the researcher.

When asked what characteristics participants associated with someone who is suicidal, ten out of eleven responded: eight out of ten described depression, four described loneliness or isolation, three described poor self-esteem, and three more described hopelessness. Other characteristics associated with the suicidal included: perceived burdensomeness, being "financially bereft" or experiencing "a recent catastrophic event". However, one respondent described the variability of these characteristics, and another reflected on two previous occasions when different suicidal individuals had given them "no indication" of their intentions, both alluding to the limitations of attempting to characterise the suicidal.

When asked if these characteristics made participants more or less concerned about the interests of suicidal individuals, compared with other members of the general public, nine out of ten respondents continued: eight out of nine described being more concerned about the interests of the suicidal; most referring to a greater sense of empathy and/or understanding towards the suicidal; a greater understanding of the needs of the suicidal and the urgency of those needs, as compared with other members of the general public. One other respondent described being less concerned about the interests of the suicidal as a result of the characteristics they associated with them. They accepted that someone who is suicidal would likely exhibit certain characteristics, but questioned whether this made the act of suicide "acceptable".

Transmission

The following describes results from the first two sections of the survey, “Process” and “Transmission”, which sought to trace decision-making by local government on public access to Lawyers Head and determine the relevant scientific evidence councillors were exposed to during this process. The two sections were integrated here for simplicity. Most results have been divided into months detailed chronologically. Major events within the same month follow on from one another with greater spacing.

When asked approximately when and how participants became aware of the reputation of Lawyers Head as a high-incidence location for suicide: two out of eleven participants reported having “always” been aware of it (both had lived in Dunedin for at least forty years when elected to the DCC in 2007), one participant reported learning of the headland’s infamous reputation “at high school” (1960s), one other reported learning of it “many decades ago [growing up]”, another as a community advocate “some thirty years ago” (1980s), and six other participants reported becoming aware of it either: when the DCC received a proposal from the Tahuna Wastewater Treatment Plant to temporarily close John Wilson Ocean Drive in 2005, or when the DCC received a proposal from SL to permanently close John Wilson Ocean Drive in 2008.

January 2008

All participants became aware of the proposed permanent closure of John Wilson Ocean Drive in January 2008, when SL made a submission to the Community Development Committee (CDC) of the Dunedin City Council (DCC), on which all participants sat. One participant, who was chairperson of the CDC at the time, received a letter from SL, dated January 18, 2008. SL was then invited to table their letter to the chair and present to councillors at a CDC public forum on January 22, 2008. According to committee meeting minutes, all participants were present for this public forum, except one who was granted medical leave. However, one participant who was present at the meeting reported being absent and the participant who was granted medical leave reported attending.

Participants were asked what scientific information they recalled receiving from SL about the proposed permanent closure of John Wilson Ocean Drive during the public forum. Four out of ten participants present described “statistics” suggesting a preventive role for permanent road closure. Three participants described evidence supporting a reputation for

Lawyers Head as a high-incidence location for suicide; two alluded to the title of Lawyers Head as the single location in New Zealand associated with the greatest number of suicide deaths.

Three other participants did not describe the scientific information they received during the forum, but instead described how they interpreted the submission overall; being “significantly impacted”, “enlightened” or “compelled”.

Two participants referred to the scientific explanation of statistical findings proposed by SL; regarding the “mindset” of a suicidal person and how road closure could disrupt that state of mind. One also described receiving scientific information from SL about suicide in the media; the lecturer advocating confidentiality in council deliberations over public access to Lawyers Head, to minimise the risks associated with location-specific suicide-related reporting.

Two out of ten participants present at the public forum reported being unable to recall scientific information they received from SL about the proposed permanent closure of John Wilson Ocean Drive. It should also be noted that three others indicated uncertainty in their responses to this question; expressing varying degrees of distrust in their recall given the time passed since the case (eight years). The researcher acknowledged this study limitation in the survey cover letter and information sheet and, for most participants, during conversations via email or telephone and/or in person. Participants were nevertheless invited to answer all survey questions as best they could.

Participants were then asked what scientific information they recalled receiving from SL about proposed fence installation at Lawyers Head during the public forum. One participant relayed a description of fencing atop the headland as an alternative form of means restriction to road closure, albeit not the “best solution”. Two participants relayed similar reservations about the effectiveness of fencing atop Lawyers Head: providing “no guaranteed protection” and potentially “highlighting the site’s suitability”. One went on to describe dense planting as an alternative form of means restriction atop the headland. Two out of ten participants recalled references made to other high-incidence locations for suicide: an unidentified site in Sydney [The Gap] and Grafton Bridge in Auckland.

There were inconsistencies between participants’ interpretations of fencing as an alternative form of means restriction. One participant compared different forms of means restriction (road closure and fencing) with an apparent understanding that one or the other would have

to do. This person interpreted from SL's submission that road closure would be a more effective preventive measure, but fencing atop the headland would be a suitable alternative if motor vehicle access to John Wilson Ocean Drive was not restricted. Another participant compared different forms of means restriction (road closure and fencing) with an apparent understanding that a multi-faceted approach to risk management at the headland could be taken. This person interpreted from SL's submission that, regardless of whether or not motor vehicle access to John Wilson Ocean Drive was restricted, fencing atop the headland had to be installed urgently [for risk management not limited to suicide].

One out of ten participants present at the public forum reported being unable to recall scientific information they received from SL about proposed fence installation at Lawyers Head. Another sought clarification on the purpose of the question; expressing frustration at being asked to recall details of a meeting that took place eight years earlier. Again, the researcher spotlighted recall inaccuracy as a study limitation in the survey cover letter and information sheet. Participants were nevertheless invited to answer all survey questions as best they could.

Participants were also asked what scientific information they recalled receiving from SL during the public forum about the nature of suicidal people, as related to the risk management strategies proposed. Six out of ten described suicide being largely means-specific; a suicidal person chooses the method by which they will take their own life, and seldom switches to another method if their preference becomes inaccessible. One participant also described suicide by jumping from a height as a relatively site-specific method; a suicidal person who chooses to take their own life by jumping from a height is less likely to switch to another location if their preference becomes inaccessible, than a suicidal person who chooses to take their own life by another means.

Suicide method and site substitution aside, participants also interpreted from SL's submission that suicidal people often behave spontaneously or opportunistically. One went on to describe how walking the length of John Wilson Ocean Drive in an exposed coastal area could disrupt the mindset of a suicidal person behaving in such a way.

One participant reported being unable to recall the scientific information they received from SL during the public forum about the nature of suicidal people, as related to the risk management strategies proposed. Two more recommended the researcher access SL's records to verify the relevant scientific information councillors were exposed to during

decision-making. Again, the researcher spotlighted recall inaccuracy as a study limitation in the survey cover letter and information sheet. Participants were nevertheless invited to answer all survey questions as best they could. Furthermore, the researcher was granted access to SL's records, but it was still important to gauge participants' respective interpretations of SL's submission, albeit accounting for probable recall inaccuracies.

Participants were then asked if they questioned SL during the public forum, which seven out of ten reported being unable to recall. Others reported asking SL a question: the first recalled asking about some of the "trends" SL had described [regarding suicide method and site substitution], the second recalled asking about public consultation on sensitive policy matters, and the third reported being unable to recall what they asked SL. Both who recalled asking SL a specific question were satisfied with their responses, commending the level of detail or clarity provided in each.

When asked if they supported the motion at that meeting to extend the public forum on "Future public access to Lawyers Head" until all groups had spoken, seven out of ten reported so. One reported opposing the motion on the grounds that "a professional response was required", and two others reported being unable to recall. The motion was carried.

April 2008

The Community Development Committee (CDC) of the Dunedin City Council (DCC) met again on April 15, 2008. Its meeting addressed a report, "Lawyers Head access", from the Parks and Reserves Team Leader that described SL's preliminary research findings about suicide events at Lawyers Head before and after motor vehicle access to John Wilson Ocean Drive (JWOD) was restricted, indicated that JWOD could be reopened upon outfall completion in late May, outlined likely options for future public access to the headland, and sought approval to extend JWOD closure until a report on options could be generated. According to committee meeting minutes, seven out of eleven participants attended the April meeting. However, two participants who were present at the meeting reported being unable to recall their attendance and all four who were absent reported attending.

Five of the seven present recalled supporting the motion at that meeting to approve continued closure of JWOD until after consideration of a further report at a meeting in June; others reported being unable to recall. Participants' respective answers were consistent when asked if they supported the subsequent motion at that meeting that Community and

Recreation Services (CARS) staff prepare a report on options for future access to Lawyers Head for consideration at the June meeting. Motions to approve continued closure of JWOD until June, and for an access report to be generated in the interim, were both carried.

June 2008

The CDC met again on June 10, 2008. The non-public section of the meeting addressed a report, "Ocean Beach access issues", from the CARS Team Leader that described SL's preliminary research findings, stated that JWOD and Lawyers Head were administered under the Ocean Beach Domain Management Plan (which was under three-year review) and that the public consultation required to permanently restrict motor vehicle access to the headland could be sought at review hearings. According to committee meeting minutes, ten out of eleven participants attended the June meeting. However, one participant who was present at the meeting reported being absent, two more participants who were present reported being unable to recall their attendance, and the absentee reported attending.

Seven of the ten present recalled supporting the motion at that meeting to retain gates on JWOD until the public was consulted as part of the Ocean Beach Domain Management Plan Review; others reported being unable to recall. Participants' respective answers were consistent when asked if they supported the motions at that meeting for staff to provide a further report for the July meeting [report was intended to relay feedback from submitters to the Proposed Data Collection Process for the Ocean Beach Domain Management Plan Review]; and that the chairperson and CARS Team Leader be granted the authority to release confidential information from the non-public section of the meeting as appropriate. Motions to retain gates on JWOD during public consultation, for staff to provide a subsequent monthly report, and for two council representatives [one elected official and one member of staff] to release relevant confidential information as appropriate were all carried.

July 2008

The CDC met again on July 15, 2008. Its meeting addressed a report, "Continued closure of John Wilson Ocean Drive", from the Reserves Policy and Planning Officer that relayed feedback from submitters to the Proposed Data Collection Process for the Ocean Beach Domain Management Plan Review, e.g., the Department of Conservation noted increased use of Ocean Beach by wildlife since motor vehicle access to JWOD had been restricted.

The report proposed continued closure of JWOD to allow for ecological assessment of Ocean Beach as part of the data collection process. According to committee meeting minutes, eight out of eleven participants attended the July meeting. However, all three participants who were absent from the meeting reported being present.

Six of the eight present recalled supporting the motion at that meeting to approve continued closure of JWOD until after the Ocean Beach Long Term Planning Process and Ocean Beach Domain Management Plan had been approved; others reported being unable to recall. The motion to approve continued closure of JWOD was carried.

January 2009

The *Australian and New Zealand Journal of Psychiatry* published a scientific paper by the senior lecturer and a biostatistician colleague on the effect of restricting access to a suicide jumping site [Lawyers Head] in January 2009. The pair had concluded their study – the preliminary findings of which councillors were made privy to – in late 2008 and submitted to publishers in December.

The Community Development Committee (CDC) met again on January 21, 2009. Its meeting regarded the Ocean Beach Long Term Planning Process. The Emergency Response Team recommended that \$100,000 be included in the Parks and Reserves operational budget in the 2009/10 financial year for data analysis, modelling and design associated with the draft long-term plan for Ocean Beach Domain. According to committee meeting minutes, all participants attended the January meeting. However, one participant who was present at the meeting reported being unable to recall. Seven of those present recalled supporting the motion at that meeting to approve inclusion of the recommended sum in the Parks and Reserves operational budget; others reported being unable to recall. The motion was carried.

April 2009

When asked if they were aware of the suicide death that occurred at Lawyers Head on April 10, 2009 (the first since motor vehicle access to JWOD was restricted in August 2006) all participants reported so. The death involved a 41-year-old woman whose body washed up on St Kilda beach. Her injuries, cause of death and circumstances were indicative of

suicide, and some of her belongings – a wallet and jacket – were found at Chisholm Park Golf Course a week after the discovery of her body.

Participants were asked if they were aware of the speculation that surrounded a letter to the editor published in the *Otago Daily Times (ODT)* in the days leading up to the suicide death. This letter to the editor described access to Lawyers Head via Chisholm Park Golf Course and the woman who took her own life there days later was thought to have accessed the cliffs by the route described. It was speculated that irresponsible publishing by the *ODT* may have contributed to the suicide death. All participants were also aware of the speculation that surrounded the publishing of this letter to the editor.

Participants were then asked if they would have supported further investigation of the *ODT*'s conduct in this instance. Seven out of eleven participants reported so; one described the probable vulnerability of some readers [like the woman speculated to have read the letter to the editor], two described how the letter could have guided the woman to take her life in the way she did, two described “irresponsibility” or “negligence” on the part of the publisher [given how the letter could have guided the woman], and others did not attempt to explain their position.

Of the four participants who reported that they would not have supported further investigation of the *ODT*'s conduct in this instance, three provided an explanation: one thought any wrong-doing by the publisher would be “too difficult to prove”, another was sceptical about what good any investigation could do [how the publisher could be disciplined for poor conduct and whether this would ultimately save lives], and the third thought the relationship was clear and did not warrant further investigation: “publicity led to events” [did not appear to have interpreted from question how publisher could have been held accountable as result of investigation].

May 2009

Participants were asked if they accompanied the senior lecturer (SL) and the police officer (PO) to Lawyers Head in late May 2009. SL recalled [to researcher] driving out to the headland around this time with PO, an inquest officer, chairperson of the Community Development Committee (CDC) and “some other councillors” to look at the site and discuss risk management there. PO provided the researcher with minutes of a meeting about risk management at Lawyers Head held May 26, 2009. Minutes noted the attendance of PO, an

inquest officer, SL, chairperson and deputy chairperson of the CDC, and three members of council staff. Only two participants were present at the first site visit according to minutes from PO. These participants reported accompanying SL and PO to Lawyers Head in late May 2009. However, two other participants who were not noted as present in minutes also reported attending. Two more reported not accompanying SL and PO to the headland on this occasion and five others reported being unable to recall.

When asked what new scientific information they received from SL about the proposed permanent closure of John Wilson Ocean Drive (JWOD) at the first site visit, one participant reported being unable to recall. The other did not describe scientific information from SL, but instead correspondence from the general public prior to the site visit urging permanent closure of JWOD to vehicles and fencing of Lawyers Head.

When asked what new scientific information they received from SL about proposed fence installation at Lawyers Head during the first site visit, the two participants' respective reports were consistent; one being unable to recall and the other describing ongoing correspondence from the general public urging permanent road closure and fence installation.

Participants were then asked what new scientific information they received from SL at the first site visit about the nature of suicidal people, as related to the risk management strategies proposed. One did not describe new scientific information from SL, but instead relayed again that suicidal people "do not switch modes". The other did not describe new scientific information from SL either; instead once more describing ongoing correspondence from the general public urging permanent road closure and fencing, but this time adding that the correspondence was "compelling".

Both participants present at the first site visit reported asking SL a question there. One recalled asking about the reputation of Lawyers Head as a high-incidence location for suicide [the single location in New Zealand associated with the greatest number of suicide deaths] and the other reported being unable to recall what they asked SL. The participant who recalled asking a specific question there was satisfied with the response they received; SL reportedly sharing the participant's concerns about the infamous reputation of Lawyers Head as a high-incidence location for suicide. Both were said to have felt it was "a bad look for Dunedin".

June 2009

Participants were asked if they attended the second site visit to Lawyers Head with the police officer (PO) and other councillors on June 9, 2009. This trip by bus occurred prior to the Community Development Committee (CDC) meeting that day. Although SL was not present to disseminate further scientific information, it was possible that PO relayed new evidence to participants during the visit. Nine out of eleven participants reported attending the second site visit. According to committee meeting minutes, all participants were present at the CDC meeting later that day. However, no inferences can be drawn about recall accuracy here because councillors could have declined the site visit invitation or sought concurrent leave on other grounds.

When asked what new scientific information they received from PO at the second site visit about the proposed permanent closure of John Wilson Ocean Drive (JWOD), four participants reported being unable to recall and one other reported receiving no new information. Of the four others present, two described safety considerations for emergency services personnel [police officers, search and rescue teams and surf life-savers] when responding to suicide-related call-outs at Lawyers Head. The other two described trends in suicide events at Lawyers Head: most suicide deaths there involving the suicidal person driving [or being driven] to the headland, or most suicide deaths there occurring in the night. One also relayed an explanation for the effectiveness of road closure in suicide risk management at Lawyers Head, i.e., the walk to the headland likely disrupting a suicidal person's state of mind.

When asked what new scientific information they received from PO at the second site visit about proposed fence installation at Lawyers Head, six participants reported being unable to recall and one other reported receiving no new information. Of the two others present, one described fence design features [no elaboration] and alternative forms of risk management about the headland where a fence would not extend. The other alluded to the limitations of fencing in risk management at Lawyers Head, i.e., "a determined person would scale a fence".

When asked what new scientific information they received from PO at the second site visit about the nature of suicidal people, as related to the risk management strategies proposed, six participants reported being unable to recall and one other reported receiving no new information. Of the two others present, one described behavioural trends among the suicidal

[no elaboration] and the other explained the significance of vehicle access to Lawyers Head in suicide-related events there; a suicidal person's state of mind being ephemeral and a motor vehicle [private car or taxi] providing "quick access" to their chosen means of death. The latter also alluded to the limitations of fencing in risk management at Lawyers Head, echoing a participant's response to the previous question, i.e., "[suicidal] people will scale a fence if they get vehicle access to the site and are determined".

Participants were asked if they questioned PO during the second site visit and seven reported being unable to recall. Of the two others present, one recalled asking about the physical characteristics of Lawyers Head and the other recalled asking if PO had attended a suicide-related call-out at the headland. PO was said to have responded with clarity in the first instance [no elaboration] and with honesty in the second; expressing sympathy for emergency services personnel and the bereaved.

Participants were then asked if they attended a presentation by SL after the bus trip. SL recalled [to researcher] meeting with councillors over lunch: presenting research findings about suicide events at Lawyers Head before and after JWOD closure (and distributing copies of recently published scientific paper), speaking more broadly about suicide risk management, and engaging with councillors about risk management at the headland. Eight out of eleven participants reported attending the presentation, one reported being absent, and two others reported being unable to recall. According to committee meeting minutes, all participants were present at the CDC meeting after the presentation. However, no inferences can be drawn about recall accuracy here because councillors could have declined the lunch invitation or sought concurrent leave on other grounds.

When asked what new scientific information they received from SL during the presentation about the proposed permanent closure of JWOD, seven participants reported being unable to recall, while one relayed an assessment of research findings, i.e., "while data was limited, closure was effective".

When asked what new scientific information they received from SL during the presentation about proposed fence installation at Lawyers Head, seven participants reported being unable to recall, and one other relayed limitations to the effectiveness of fencing in risk management at the headland (regarding design features).

Participants were then asked what new scientific information they received from SL during the presentation about the nature of suicidal people, as related to the risk management strategies proposed. Six participants reported being unable to recall. Of the two others present, one explained the significance of delaying access to Lawyers Head in preventing suicide-related events there – the time taken to walk to the headland likely disrupting a suicidal person’s state of mind. The other did not describe new scientific information from SL, but instead relayed again that a suicidal person seldom switches to another method if their preference becomes inaccessible.

Both participants who reported receiving new scientific information from SL during the presentation about the nature of suicidal people, as related to the risk management strategies proposed, also reported questioning SL there, but neither could recall what they asked.

The Community Development Committee (CDC) met again [after SL’s presentation] on June 9, 2009. Its meeting addressed reports, “Ocean Beach update” and “Update – John Wilson Ocean Drive”, from the Business Development Team Leader, which revealed that the data-gathering and investigations phase of the Ocean Beach Long Term Planning Process was almost complete, and nominated members for a project team that would prepare a draft long-term management plan for Ocean Beach. According to committee meeting minutes, all participants attended the June meeting. However, one participant who was present at the meeting reported being unable to recall.

Eight of the eleven present recalled supporting the motion at that meeting that the public be excluded from parts of the meeting pertaining to an update on public access to Lawyers Head; others reported being unable to recall. The motion was carried and the non-public section of that meeting concluded with the chairperson requesting a staff report on fencing at the headland for the next committee meeting.

Another motion was put at the meeting that the chairperson be granted the authority to release confidential information from the non-public section of the meeting as appropriate. Seven out of ten participants permitted to vote [chairperson excluded] reported backing the motion, while three reported being unable to recall. The motion was carried.

July 2009

The CDC met again on July 14, 2009. Its meeting addressed a report on Lawyers Head fence design by the Community Life General Manager who was present to answer questions. According to committee meeting minutes, nine out of eleven participants attended the July meeting. However, one participant who was present at the meeting reported being absent, another who was present reported being unable to recall, and both absentees reported attending.

Five participants recalled supporting the motion at that meeting that the gates on John Wilson Ocean Drive (JWOD) remain and be closed one hour before sunset and opened one hour after sunrise. The four others reported being unable to recall, with one explaining that “permanent closure [was] more appropriate”. The motion was carried.

Five participants recalled supporting the subsequent motion at that meeting that a fence and associated landscaping be installed at Lawyers Head; another recalled opposing this motion and three more reported being unable to recall. This motion too was carried.

The next motion at that meeting proposed that the funding required for risk management measures (up to \$120,000) be taken from the Logan Park Capital Works’ 2009/10 year’s funding. Five participants reported being unable to recall, while four reported backing the motion. The motion was carried.

Finally, it was moved that gates on JWOD remain locked until the recommended fence had been installed. Six participants recalled supporting the motion and the three others reported being unable to recall. This motion too was carried.

September 2009

The CDC met again on September 1, 2009. Its meeting involved consideration of minutes extracts from the CDC meeting of July 14, 2009 and the Dunedin City Council meeting of August 17, 2009. The meeting also addressed a set of draft resolutions relating to JWOD and Lawyers Head. According to committee meeting minutes, nine out of eleven participants attended the September meeting. However, two of those present reported being unable to recall (as did one who was absent) and the other participant who was absent reported attending.

Four participants recalled supporting the motion at that meeting that the gates on JWOD remain and be closed one hour before sunset and opened one hour after sunrise, from Monday to Friday. One instead recalled opposing the motion, another reported abstaining from the vote, and three more reported being unable to recall. The motion was carried ten to two with one abstention [includes committee members who did not participate in this study].

Four participants recalled supporting the subsequent motion at that meeting that the gates on JWOD remain and be closed from Friday night until Monday morning. One instead recalled opposing the motion, another reported abstaining from the vote, and three more reported being unable to recall. This motion too was carried.

A subsequent motion at that meeting proposed that plans for a fence and associated landscaping be taken to resource consent stage and implemented subject to resource consent approval. Four participants recalled supporting the motion, one other recalled opposing it, and four more reported being unable to recall. The motion was lost three to nine with one abstention [included committee members who did not participate in this study].

According to committee meeting minutes, three out of four participants who recalled supporting the motion [that plans for a fence and associated landscaping be taken to resource consent stage and implemented subject to resource consent approval] actually opposed the motion. However, this may have been because participants were questioned about a truncated version of the motion: “that plans for a fence and associated landscaping be taken to resource consent stage”. Councillors voted on the truncated version after the original motion [including implementation] was put and lost. Therefore, the three participants above may well have supported the truncated version of the motion, as was reported in the survey, but opposed the original motion, as was recorded in committee meeting minutes. Any inconsistencies between records and reports for the six other participants were unremarkable; one participant who supported the motion and two others who opposed it reported being unable to recall.

Finally, it was moved that regular monitoring of the area [Lawyers Head] for incidents and general weekend use be undertaken prior to any decision to construct a fence, i.e., monitoring as an alternative to fencing resource consent and implementation, which had been defeated previously. Four participants recalled supporting the motion and the five others present reported being unable to recall. The motion was carried.

As widespread dissension over public access to Lawyers Head strengthened, local media afforded the issue greater coverage. Participants were asked if they had approached a journalist about public access to Lawyers Head in the months preceding the reopening of JWOD on September 21, 2009. Ten out of eleven participants reported that they did not, with one explaining that this would have breached a committee confidentiality agreement, and another was unable to recall.

Participants were then asked if a journalist had approached them about public access to Lawyers Head in the months preceding the reopening of JWOD on September 21, 2009. Three out of eleven participants reported so and when asked if they chose to comment on public access to the headland, two reported being unable to recall; the other described managing comments as agreed with committee. One of the former described two reporters in particular as “very aggressive about trying to squeeze me for comment”. Of the eight participants remaining, only one reported not being approached by a journalist; others reported being unable to recall.

Participants were also asked if they visited JWOD upon its reopening on September 21, 2009. Five out of eleven participants reported so: one described walking the drive as a regular occurrence, another described always being interested in “action outcomes” [results of committee deliberations], and one more described how the reopening served as a test for their child who was learning to ride a bike; being “interested in how it felt for them with traffic there”. Of the six participants remaining, only one reported not visiting JWOD upon its reopening; others reported being unable to recall.

When asked if they were aware of the suicide death that occurred at Lawyers Head on September 24, 2009, ten out of eleven participants reported so; one other reported otherwise. The death involved a 46-year-old man whose body was located on rocks beneath the headland. Police enquiries established that the man had driven to Lawyers Head and jumped or fallen from the cliffs. A written explanation of his intent was found in his vehicle.

Participants were asked if they were aware of the speculation that surrounded the publishing of a significant number of articles by the *Otago Daily Times* (ODT) in months preceding the reopening of JWOD on September 21, 2009. Articles regarded public access to Lawyers Head via JWOD, and/or fencing about the headland, and were speculated to have drawn

unnecessary attention to the headland as a high-incidence location for suicide. Ten out of eleven participants reported an awareness of this speculation; one more reported otherwise.

Participants were then asked if they would have supported further investigation of the *ODT*'s conduct in this instance. Eight out of eleven participants [including the one who reported being unaware of the suicide death and related speculation] reported so. Two expressed caution, doubting what good would come from further investigation, or saying conduct was "typical *ODT* reporting". Two others described social connections to the deceased, and one more was confident that any evidence suggesting the deceased had in fact been influenced by *ODT* articles could have been used to hold newspaper contributors to account; make clear their very real social responsibility. Of the three participants who would not have supported further investigation of the *ODT*'s conduct in this instance, two explained. One was doubtful of what good would come from further investigation, and another conscious of how further investigation could draw unnecessary attention to Lawyers Head as a high-incidence location for suicide, i.e., "The greater the publicity, the greater the risk."

October 2009

On October 6, 2009, the Mayor of Dunedin City made an executive decision to restrict motor vehicle access to John Wilson Ocean Drive (JWOD) at the recommendation of the police area commander for Dunedin-Clutha. When asked if they supported closure of JWOD on this occasion, nine participants reported so and two reported otherwise.

November 2009

The Dunedin City Council (DCC) met on November 2, 2009. Its meeting addressed an executive decision by the Mayor to restrict motor vehicle access to JWOD in early October, at the recommendation of the police area commander for Dunedin-Clutha. The Mayor sought retrospective approval from councillors for road closure. According to council meeting minutes, all participants were present at the November meeting. Only one reported being unable to recall their attendance.

Ten participants recalled supporting the motion at that meeting that gates on JWOD remain and be closed twenty-four hours a day, seven days a week, until councillors were satisfied that any alternative preventive measures could be effectively put in place; one reported

otherwise. “Alternative preventive measures” included fencing and associated landscaping, as had been proposed previously but were delayed until regular monitoring of the area could be undertaken. The motion was carried.

Eight participants recalled supporting the subsequent motion at that meeting that plans for a fence and associated landscaping be taken to resource consent stage, and that any progress on these plans be reported to the committee as a matter of urgency; others reported being unable to recall. This motion too was carried.

The Community Development Committee (CDC) of the DCC met again on November 17, 2009. Its meeting addressed a report, “Security fence at Lawyers Head”, by the Business Development Team Leader, which presented three options: a fence on the cliff edge, a fence below the cliff edge, or permanent gates on JWOD with appropriate landscaping and signage. The Business Development Team Leader was present to answer questions about fence design and cost. According to committee meeting minutes, ten out of eleven participants attended the November meeting. However, two who were present reported being unable to recall and the absentee reported attending.

A motion was put at that meeting to approve the installation of gates or other effective motor vehicle barrier at JWOD, with appropriate landscaping, signage and a turning circle for vehicles; and the request that staff clarify issues on public consultation. This was the least expensive of the three risk management options and would allow pedestrians and cyclists access to a vehicle-free stretch of road to Lawyers Head. However, it also restricted motorists’ access to the headland and would not improve its recreational value by significantly enhancing safety atop the cliffs.

According to committee meeting minutes, seven participants supported the motion. Although, two of those reported being unable to recall and of the three who did not support the motion, one reported being unable to recall, another reported voting in favour of the proposal, and the third had departed the meeting when the motion in question was put. Regardless, the motion was carried seven to six [includes committee members who did not participate in this study]. It should be noted that the three former committee members who chose not to participate in this study all opposed road closure on this occasion. However, shared voting behaviour does not necessarily reflect a shared rationale.

December 2009

The DCC met again on December 14, 2009. Its meeting addressed an additional report, “Closure of John Wilson Ocean Drive to vehicles”, by the Reserves Estate Officer. The report advised that JWOD was administered under the Ocean Beach Domain Management Plan, which had a policy encouraging full public participation in review procedures and this was estimated to take thirty-seven weeks. According to council meeting minutes, nine out of eleven participants attended the December meeting. However, two who were present reported being unable to recall and the two absentees reported attending.

Participants were asked if they supported the motion at that meeting that, given its late date, a further report be submitted to the CDC in January of the new year – the public notification phase of the consultation process was expected to commence soon after. Seven participants reported supporting the motion; others were unable to recall. The motion was carried.

January 2010

The CDC met again on January 26, 2010. Its meeting addressed the previous report from the Reserves Estate Officer, who was present with the Business Development Team Leader and the Community and Recreation Services (CARS) Team Leader to answer any questions about the Ocean Beach Domain Management Plan, e.g., timeframes and implications for the proposed resource consent application and fence. According to committee meeting minutes, all participants were present at the January meeting. Only two reported being unable to recall their attendance.

A motion was put at that meeting to authorise staff to commence a review of the Ocean Beach Domain Management Plan. All but two participants reported backing the motion; others reported being unable to recall. The motion was carried.

Subsequently, a motion was put to approve public notification of an intention to review the section of the Ocean Beach Domain Management Plan relevant to restricted public access to Lawyers Head via JWOD. Again, all but two participants reported backing the motion; others reported being unable to recall. This motion too was carried.

March 2010

Participants were asked if they were aware of an article about Lawyers Head, “Moral Dilemma”, which featured in *City Talk* in March 2010. *City Talk* was a magazine published monthly by the DCC and the article described closure of JWOD, the challenges encountered when permanent road closure was proposed, the lengthy debates that followed this proposal, and the three options councillors considered before seeking public consultation to permanently restrict road access. Seven out of eleven participants reported being aware of the article, while three reported otherwise and one could not recall.

Participants were then asked if they were aware of the speculation that surrounded the decision by a communications coordinator to publish the *City Talk* article. The article made explicit reference to Lawyers Head as the single location in New Zealand associated with the greatest number of suicide deaths and was speculated to have drawn unnecessary attention to the headland as a high-incidence location for suicide. Of the seven participants who reported being aware of the article, four reported also being aware of the speculation that surrounded its publishing; others were not aware, unable to recall, or refused to comment.

When asked if they would have supported further investigation of the communications coordinator’s conduct in this instance, six participants reported so; one describing poor judgement by the communications coordinator and another confident that any evidence suggesting a lack of “cultural sensitivity” would have resulted in their re-training or replacement. One of the six would have supported further investigation of the communications coordinator’s conduct, despite not hypothetically supporting further investigation of the *ODT*’s conduct on two previous occasions of dubious publishing. They explained, “We were in a position where we should have been holding our own employee to a different standard. And that was just one example of that particular employee being wilfully mischievous at times.” Of the five who would not have supported further investigation, only one provided any explanation; expressing concern for how it “would have fuelled more publicity”.

It should be noted that SL recalled being consulted on this publication; sharing “misgivings” about the Lawyers Head article during “some discussion” with the communications coordinator. A sensitive journalist was commissioned to write the piece, including SL in talks thereafter (K. Skegg, personal communication, April 16, 2015).

June 2010

The Community Development Committee (CDC) met again on June 8, 2010. Its meeting addressed a report, “Partial review of section 7.3 Ocean Beach Domain – public consultation”, by the Community and Recreation Policy Team Leader, which advised that preliminary consultation had been completed and the relevant section of the management plan revised to account for changing circumstances. Committee approval was sought to release the draft section for wider public consultation. According to committee meeting minutes, ten out of eleven participants attended the June meeting. However, three who were present reported being unable to recall and the absentee reported attending.

Management plan revisions included explanatory notes, i.e., that JWOD was not a legal road and was in need of considerable repair for long-term stability, and that its recreational value could be enhanced significantly through, for example, installation of picnic tables and seating. More controversially, revisions also included restricting motor vehicle access to Lawyers Head and parts of JWOD – to protect dunes from coastal erosion, sensitive areas of natural flora and fauna habitats, public safety, coastal amenities and opportunities for non-motorised recreation.

Participants were asked if they supported the motion at that meeting to approve Draft Section 7.3 John Wilson Drive of the Ocean Beach Domain Management Plan 2010 for public consultation. All those present supported the motion, and all but two reported so; others reported being unable to recall. The motion was carried.

Participants were then asked if they supported the subsequent motion at that meeting to appoint three particular CDC members to sit on a hearings committee that would hear and make recommendations on submissions regarding the draft section. Only seven participants were eligible to weigh in here, as three others were motion subjects. Four of these recalled supporting the trio (although one cautioned “with reservations”) and three others reported being unable to recall. This motion too was carried. During follow-up, the reservations above were attributed to concern over the capability and work ethic of nominees, and an understanding that these councillors would likely have greater influence over deliberations.

July 2010

The CDC met again on July 13, 2010. Its meeting addressed fence replacement at JWOD with bollards. According to committee meeting minutes, all but one participant attended the July meeting. All reported attending, even the absentee.

Participants were asked if they supported advice from the chairperson at that meeting that four bollards would replace the fence at JWOD. Fence replacement would cost \$2,800 (funded from within existing budgets), would not affect the hearings process, and bollards could be relocated. Only nine participants were eligible to weigh in here as the chairperson was the subject of the motion. Five of these reported backing the advice, while one did not, another refused to comment, and two more reported being unable to recall. The advice was actioned.

August 2010

The CDC met again on August 31, 2010. Its meeting addressed a report, “Ocean Beach Project Team – Progress report”, from the Business Development Team Leader, which outlined the establishment of the project team and their studies in the previous year, and estimated that further investigations would take another six to twelve months. Environmental and engineering consultants were present at the meeting to answer questions. The meeting also acknowledged a Community and Recreation Services activity report, which advised that public submissions for partial review of the Ocean Beach Domain Management Plan closed on August 6, 2010. The report then advised that hearings would take place on August 25 and 26, and the final draft section would be presented to Dunedin City Council in late September. According to committee meeting minutes, nine out of eleven participants attended the August meeting. However, two of those reported being unable to recall and one of the absentees reported attending.

Participants were asked if they supported the request at that meeting for a staff report identifying what Ocean Beach assets were at risk and how important those assets were to enable work to be prioritised. All but two participants reported backing the request; others were unable to recall. The request was actioned.

October 2010

The Dunedin City Council (DCC) met again on October 4, 2010. Its meeting noted minutes of hearings committee forums held on August 25 and 26, and on September 9, 17 and 27. The DCC then addressed a report from the Reserves Hearings Committee (RHC), which presented recommendations from public submissions on the draft section of the Ocean Beach Domain Management Plan. The RHC sought approval of the recommendations and adoption of the revised section from DCC. According to council meeting minutes, all participants attended the October meeting. All but two reported as much; others were unable to recall.

When asked if they supported the motion at that meeting to approve amendments to the Draft Section 7.3 recommended by the RHC off the back of public submissions, only one participant reported opposing the motion and three others reported being unable to recall. Amendments gave considerable attention in the landscape development plan to the improvement of Ocean Beach amenities, e.g., redesigning the domain entrance and controlling traffic. The motion was carried.

Participants were asked if they supported the subsequent motion at that meeting that the following changes be made with urgency from within existing operational budgets: i) Before the barrier: change all parking to angle parking, provide a safe turning space, provide safe pedestrian access from Victoria Road to the bollards/barrier, impose new lower speed limits, and provide information signage (including control of dogs on reserves); ii) After the barrier: provide signage (interpretive and educational), begin appropriate planting and placement of physical barriers to restrict access to cliff edge at John Wilson Drive Lookout (Wright Memorial Lookout), and install an emergency communication device at the lookout. As with the motion prior, only one participant reported opposing it and another was unable to recall. This motion too was carried.

Participants were then asked if they supported the final motion at that meeting that a draft timeline for the Development Plan be presented to the first meeting of the Community Development Committee in the new triennium. The plan would include: regulated vehicle access, traffic calming measures, restricted speed limits, a pedestrian walkway and cycleway, litter management, enhanced angle parking at beach access points, and consideration of short-term parking at the lookout. All but two participants reported backing the final motion; others reported being unable to recall. This motion was also carried.

Local government elections were held on Sunday, October 9, 2010. Due to three subsequent substitutions on the Community Development Committee of the Dunedin City Council, tracing of decision-making on public access to Lawyers Head ceased here.

Participants were asked if, other than on the aforementioned occasions [council submission in January 2008, site visits in May and June 2009, and presentation in June 2009], they interacted with SL or the police officer (PO) regarding scientific information on risk management at Lawyers Head. Six out of eleven participants reported otherwise, two reported being unable to recall, and three reported interacting with SL and/or PO informally. Two of the latter elaborated; one describing a number of phone calls with each, and the other describing an exchange of emails with SL; neither went into greater detail.

Participants were then asked if, other than on the aforementioned occasions, they interacted with any other experts regarding scientific information about risk management at Lawyers Head. Eight out of eleven participants reported otherwise, although one described conducting their own research online: “Looking into California or Los Angeles, or San Francisco I think it was. And Grafton Bridge and what had been done to stop them being a hotspot. That was quite interesting information. Can’t remember it all in detail now, but I just know that people had actually realised that it was a problem and had done something about it.” Three more reported interacting with psychologists or search and rescue personnel, surf lifesavers and the bereaved; one “took counsel” but did not elaborate.

Interpretation

The following describes results from the third section of the survey, “Interpretation”, which sought to determine how scientific evidence influenced councillors’ decision-making on suicide risk management and how perceived characteristics of SL [primary science communicator] may have influenced councillors’ respective interpretations of the evidence. Most of this section is divided, with a focus on either of two major risk management strategies considered for Lawyers Head: road closure or fencing. Different lines of questioning follow on from one another with greater spacing.

Statistics from the local inquest officer suggested that 70 per cent of suicide deaths by jumping in Dunedin occurred at Lawyers Head, but jumping suicides accounted for less

than 10 per cent of all suicide deaths in Dunedin. The number of suicide deaths in Dunedin over the previous twenty years had ranged from eight to twenty-four annually.

Participants were briefed on the above and asked if they had been convinced that a significant problem existed at Lawyers Head. All participants reported having been convinced of a problem; one saying that “any deaths – particularly multiple deaths at a single site – are a serious public safety issue”.

Participants were then asked if they knew of SL before this person made a submission to the Dunedin City Council in January 2008. Most did not. Seven out of eleven participants reported having no knowledge of SL prior to the submission and four others described social or professional connections to SL and/or their family, but not one attested to knowing the person well.

Road closure

Participants were asked if SL’s evidence suggested to them any potential value in permanent JWOD closure to motor vehicles. All but one reported that evidence here was compelling. However, one underlined “potential” in the survey booklet, emphasising that no outcome was guaranteed.

Participants were then asked if they would have preferred more evidence to support this suggestion. Seven out of eleven reported satisfaction with the evidence presented, while one reported being unable to recall. Three others described additional forms or sources of evidence that would likely have given them greater confidence. All would have preferred evidence on the effects of restricting motor vehicle access at other similar locations; one appeared unconvinced that restricting motor vehicle access to Lawyers Head would reduce suicide-related events there, given pedestrian access via JWOD and the Chisholm Park Golf Course would remain. Another participant also described SL as “under-supported” in this context, i.e., would have preferred they submit to council with the backing of a national body, e.g., the Royal Australian and New Zealand College of Psychiatrists or the Mental Health Foundation of New Zealand.

When asked if they perceived SL as credible when proposing permanent JWOD closure, all participants reported so. Two made reference to the person’s professionalism, two others commended their clarity, and one more alluded to their relative objectivity, i.e., “very

factual". It should be noted that one participant objected explicitly to questions regarding SL's credibility, saying they found it "insulting" [on SL's behalf] given the person's seniority.

When asked if they perceived SL as trustworthy when proposing permanent JWOD closure, again, all participants reported so. Fewer participants elaborated here; one describing trustworthiness as a judgement "more emotional" than that of credibility, and thus more difficult to explain. Two did emphasise, however, a contrast between SL and other lobbyists; both appeared to respect the person's "clinical" style of: presenting the evidence, making recommendations, and then leaving councillors to make their decisions.

Participants were then asked if they thought SL understood the complexities of political decision-making when proposing permanent JWOD closure. On this point, they were split. Five out of eleven participants thought SL did understand, albeit with varying degrees of conviction: "generally", "[their] recommendation was very difficult to 'sell' to the public" or "[they] said a number of times [they] knew it was not going to be easy for us". Two others reported being unsure and four more did not think SL understood the complexities of political decision-making. Of the latter, two pointed to SL's "one-dimensional" approach to what they thought was a "multi-dimensional" problem. Another pointed to SL's underestimation of the pro-access lobby group's strength, i.e., would have preferred they submit to council with the backing of a national body.

Participants were asked what they thought were some of the major benefits associated with permanent JWOD closure. Nine out of eleven participants described fewer suicide-related events at Lawyers Head. Most focussed on 'saving lives', but one specified fewer high-risk call-outs for police officers, search and rescue personnel and surf life-savers in the area. Five participants also described the improved recreational value of JWOD and Lawyers Head as a result of restricted motor vehicle access; comparing the area to a promenade, describing its "great ambience" and/or declaring the domain a community asset. Furthermore, four participants described some of the ecological benefits associated with permanent JWOD closure. Most focussed on wildlife conservation, but two specified sand dune protection and another welcomed litter management.

Participants were then asked what they thought were some of the major costs associated with permanent JWOD closure. Six out of eleven participants reported no major costs, but most explanations here were relative; made off the back of advance cost-benefit analyses,

e.g., “not important in the face of real issue” or “nothing that was not justified”. Three other participants described the financial costs associated with barrier installation and security; one also describing the financial costs associated with legal representation. One more described the political cost of motorist disenchantment.

When asked if they thought these benefits outweighed the costs associated with permanent JWOD closure, eight out of eleven participants reported so. One other participant did not respond and two more did not think permanent JWOD closure would have been cost-effective.

Participants were asked how they thought public access to Lawyers Head [via JWOD] should have been regulated, if at all. Five out of eleven participants thought motor vehicle access to the headland should have been banned. Although, one did backtrack, saying, “That was my ‘shoot-from-the-hip’ answer; I understand the depth of feeling from those who wanted it open.” One other participant described a compromise with restricted opening hours and a cap on road maintenance spending, i.e., allowing the road to deteriorate until it was no longer safe for motorists, at which point JWOD would have been permanently closed to motor vehicles. Four others indicated supporting some form of public access restriction, but did not elaborate. One instead expressed a preference for a motion apparently put to council a year after this trace of decision-making ceased (“late 2011”). Councillors were said to have considered spending up to half a million dollars enhancing the recreational value of JWOD and Lawyers Head, and managing risks atop the headland, so as to eventually reopen JWOD to motor vehicles safely.

Participants were then asked if they thought current regulations on public access to Lawyers Head [via JWOD] had been effective in suicide risk management. Currently, as was the case when this survey was conducted, bollards exist on JWOD approximately 1.4 kilometres (a twenty-minute walk) from the headland. Bollards are removed Monday to Friday between the hours of 11 am and 3 pm, and remain in place during weekends and public holidays. The speed limit along JWOD is now 30 kilometres per hour and a pair of speed bumps is located along the drive on each side of the bollards.

Ten out of eleven participants thought current regulations had been effective in suicide risk management, while one was unsure. Not one of the former could say with confidence that fewer suicide-related events had taken place at Lawyers Head recently, but all spoke to what “seemed” or “appeared” to have changed since the compromise was struck. Two

participants also spoke to the preventive potential of turning what used to be a high-risk area into a social outdoor space for the whole community.

Fencing

When asked if the senior lecturer's evidence suggested to them any potential value in fence installation at Lawyers Head, seven out of eleven participants reported so; others reported being unsure or unable to recall.

When then asked if they would have preferred more evidence to support this suggestion, participants were split. Three out of eleven reported satisfaction with the evidence presented, while five reported being unsure or unable to recall, and three others would have preferred more. Of the latter, one requested additional statistics on the preventive value of fencing, another expressed interest in "detailed ideas", and the third would have supported local government undertaking empirical research, e.g., a location-specific assessment of fence design and construction options – responsibility ultimately falling with council staff rather than the submitter.

When asked if they perceived the SL as credible when proposing fence installation at Lawyers Head, nine out of eleven participants reported so, while others did not respond. Only three participants explained their positions: one again made reference to the person's professionalism, another pointed to their academic track record, and the third tempered feedback with: "[They] simply reported on what would be theoretically possible." It should be noted that one participant again objected explicitly to questions regarding SL's credibility, saying they found it "insulting" [on SL's behalf] given the person's seniority.

Participants' responses were consistent when asked if they perceived SL as trustworthy on safety fencing matters, with nine reporting so and two not responding. Only two participants explained their positions: one appeared to derive trust from the respect they had for SL's work; and another, while trusting SL, would have trusted the person more had they presented other "balancing" perspectives, e.g., security services personnel.

As some participants did not explain what had made SL credible or trustworthy (or not) when considering different risk management strategies at Lawyers Head, the researcher invited these people to elaborate during follow-up interviews. Responses were not strategy-specific. One participant compared thought processes when determining the two

characteristics; credibility ascertained on the basis of fact, and trustworthiness built on emotional cues. Another described how credibility could be enhanced through experience in a particular field, and trustworthiness through a proactive nature, e.g., SL voluntarily making the council submission and prompting a conversation around public safety. One more participant described trusting SL in part because of the person's poise, attire and eloquence.

Participants were then asked [in the written survey] if they thought SL understood the complexities of political decision-making when proposing fence installation at Lawyers Head. Six out of nine respondents thought SL understood, while two did not and one more reported being unable to recall. Those in support again expressed varying degrees of conviction: "by then", "generally" or "[they] knew it was a hard decision for us to make". One also said it should not have mattered: "Politics should not enter the discussion when action is required." Of the two who did not think SL understood the complexities of political decision-making in this context, only one explained. This person thought a more comprehensive set of cost-benefit analyses for different fencing options should have been put before councillors. However, they did say this responsibility ultimately fell with council staff rather than submitters.

Participants were asked what they thought were some of the major benefits associated with fence installation at Lawyers Head. All nine respondents alluded to public safety; three specifying suicide risk management and two considering children's safety. Three participants tempered preventive potential with: "deterrent only", "discourage jumpers" or "would not stop a serious jumper".

Participants were then asked what they thought were some of the major costs associated with fence installation at Lawyers Head. Three out of nine respondents described financial costs associated with fence construction and maintenance, and two described aesthetic costs and hits to the recreational value of the area. One also pointed to the counterproductive suicide risk associated with conspicuous risk management at Lawyers Head, i.e., inadvertent promotion of the headland as 'life-threatening' through, for example, maximum security fencing, warning signs and an emergency communication device. Two others reported no major costs associated with fence installation, but these judgements appeared relative; made off the back of advance cost-benefit analyses – "not important in my view" or "not relevant". Two more reported being unsure of any major costs.

When asked if they thought these benefits outweighed the costs associated with fence installation, five out of nine respondents reported so; three thought otherwise and one reported being unable to recall.

Participants were asked how they thought public access to Lawyers Head [atop the headland] should have been regulated, if at all. Seven out of eleven participants supported at least basic fencing, but three added how road closure had been of greater significance to public safety than more robust fencing. In a follow-up interview, one participant expressed support for spending “about a quarter of a million” on fencing, ledges and troughs – “like the old-fashioned mote”, as had apparently also been considered by councillors.

Participants were then asked if they thought current regulations on public access to Lawyers Head had been effective in suicide risk management. Currently, as was the case when this survey was conducted, a wooden fence with wire mesh exists well within the perimeter of the headland (distance from cliff edge varies, but at least five metres at any given point). Fencing is around 1.2 metres tall and two small signs are posted along it warning, "DANGER – CLIFF FACE". The Wright Memorial Lookout had discrete fencing, which appears at least as safe as that about the rest of the headland. However, the ninth hole of the Chisholm Park Golf Course is located in the lookout foreground and is unfenced.

Five out of nine respondents thought current regulations had been effective, although two cautioned with: “but not fully” or “but mostly because of road closure after dark”. Of the three who reported dissatisfaction with current regulations, two thought road closure rather than fence installation had been effective in suicide risk management, whereas one lamented that the “proper” fence was never erected, i.e., “still looks like the ineffective one that was there before”.

It should be noted that although one large warning sign is pitched around the corner from the headland entranceway (Figure 3 A), smaller signs described above appear only intermittently along the fence line due to harsh weather conditions and vandalism. For the same reasons, holes form often in wire mesh fencing about the headland (Figure 3 B), but council staff usually repairs these before viable routes to the cliff edge develop. It is not uncommon to see litter or indeed young adults beyond the fence when circling Lawyers Head in the late afternoon, particularly on weekends. The local community’s risk tolerance there is high.



Figure 3 View southward from Lawyers Head, overlooking St Kilda and St Clair beaches. **A.** Warning sign pitched around corner from headland entranceway with message obscured by overgrown bushes. **B.** Hole in wire mesh fencing about the headland for easier access to cliff edges.

Evaluation

The following describes results from the fourth section of the survey, “Evaluation”, which sought to assess how effectively scientific evidence was presented to councillors; evaluating science communication processes in the case, probing the perceived link between scientific understanding and informed decision-making for councillors, and exploring avenues for improved science communication. Most of this section is divided accordingly, with a focus on science communication assessment, development of scientific understanding, or science advisory systems. Different lines of questioning follow on from one another with greater spacing.

Science communication

When participants were asked if they considered methods of science communication during this decision-making process satisfactory, all reported so. However, one was dissatisfied with the methods of scientific inquiry exercised by some council staff.

Participants were asked what features of presentations by SL and the police officer (PO) they found most compelling. Seven out of eleven participants described forms of evidence:

“statistics”, “data” or “facts”. One also spoke to the credibility of sources; SL and PO both “professionals” well placed to provide “expert advice”. Another reported finding the collaboration between medical professional and emergency serviceperson compelling. One participant instead reported being unable to recall and another did not respond.

Participants were then asked what features of presentations by SL and PO they found least compelling. Only six out of eleven participants responded: three would not fault presentations, one reported being unable to recall, and two others considered cost-benefit analyses by SL and PO the least compelling features of their respective presentations. The latter would have preferred comprehensive cost-benefit analyses from SL and PO for a range of risk management strategies. However, they did say this responsibility ultimately fell with council staff rather than submitters.

When asked if they would have preferred greater interaction with SL to improve their scientific understanding of suicidality and suicide risk management, only two reported so; others were satisfied with the level of interaction they had with SL.

When asked if it was likely that the input of a different scientific expert would have been more valuable to them than that of SL, only three participants reported so. However, at least two of these appeared to have misunderstood the question; neglecting that a different scientific expert in this scenario would have replaced SL rather than join her – “more science is always good” or “all research should be peer-reviewed”. Others were satisfied with SL as the primary science communicator, one [also missing the substitution point] going so far as to say, “More experts muddy the water.”

Participants were asked if it was likely that the input of an additional independent scientific expert would have been more valuable to them than that of SL alone. Four out of eleven participants reported so, while five reported otherwise and two did not respond.

Participants were then asked if it was likely an enhanced scientific understanding of suicidality and suicide risk management would have better informed their decision-making on issues associated with Lawyers Head, not that it would have necessarily changed their respective stances, but have given them greater confidence. On this point, participants were split. Four reported that it would have, four reported otherwise, and three did not respond.

Scientific understanding

The term “resources” in the following passage was defined as sources of information that could have been sought by councillors in the form of physical or digital learning materials, or through consultation with an expert.

Participants were asked, if they had wanted to develop their scientific understanding of suicidality and suicide risk management, what resources would have been available to them within council. Two out of eleven participants reported being unsure, two others reported that no resources would have been available to them and one more did not respond. Of the six who reported resources within council, three described council staff and four described self-directed learning via the Internet, the results of which councillors were said to share with one another.

When asked if it was likely they would have accessed these resources, only half of respondents reported so. Two reflected on their development of scientific understanding during the case: “I read widely on the topic – very upsetting to research” or “found out more from professional contacts in psychiatry”. Another explained why accessing these resources was not feasible for them: “with 1100 meetings and probably 35,000 decisions to make in any three-year period –”

Participants were then asked, if they had wanted to develop their scientific understanding of suicidality and suicide risk management, what resources would have been available to them outside of council. Three out of eleven participants reported being unsure and two others did not respond. Of the six who reported resources outside of council, five described the Internet and four described relevant contacts within the local community. One also considered libraries and the University of Otago for conceivably, as another participant specified, journal articles and historical press coverage.

When asked if it was likely they would have accessed these resources, two thirds of respondents reported so. Some reflected on their development of scientific understanding during the case, e.g., “read papers over and above those recommended by [SL]”. Others explained why they did not access these resources: “the Internet was not so widely used at the time” or “[SL’s] presentation was compelling”.

Participants were finally asked if, throughout decision-making on public access to Lawyers Head, they had actually wanted to develop their scientific understanding of suicidality and

suicide risk management. Six out of eleven participants reported so, while three reported otherwise and two were unable to recall. Of the three who had not wanted to develop their scientific understanding, one preferred more passive methods, i.e., experts advising councillors [albeit voluntarily]. The desire of another participant was honest, but not indicative of their behaviour, i.e., “I didn’t want to expose myself to some of that information, but I did.”

Of the six who had wanted to develop their scientific understanding, two expressed desires to develop their scientific understanding through a local lens (i.e., “as it related to Lawyers Head specifically”), one accepted responsibility for developing their scientific understanding when appointed to the hearings committee, and another alluded to a moral obligation; the discomfort they felt when reading some supplementary materials only strengthening their resolve to learn more and manage risk at the headland effectively.

When asked if they accessed any of the aforementioned resources to do so, and if accessing the resource(s) had its intended effect, four reported so on both counts. Participants described accessing the Internet and/or engaging with health professionals, teachers and social workers in the local community. Each reported that accessing these resources validated the information they had received from SL, PO and council staff. Although, one expressed a reluctance to share all additional information with fellow councillors, fearful of how sharing information from personal engagements could be misinterpreted as “lobbying” [lacking objectivity].

Advisory systems

One possible avenue for enhancing the role of science in suicide risk management policy could have aided decision-making right across local government: implementing an advisory system similar to that established not long ago in central government. To explore this possibility, participants were first asked if they were aware of the role of departmental science advisors in central government. Six reported so, while five reported otherwise.

In 2009, Prime Minister John Key appointed Professor Peter Gluckman as the inaugural Chief Science Advisor to the Prime Minister, ostensibly to demonstrate the commitment of central government to evidence-based policy development. There are now six chief science advisors across government departments in New Zealand; the most recently appointed being Professor Richie Poulton for the Ministry of Social Development in February 2015. All

advisors serve on a part-time basis to improve connections between central government and subsets of the scientific community.

Participants were briefed on the above and then asked if they thought it would be worthwhile considering the implementation of a similar advisory system in local government. Seven out of eleven thought so, while one did not and three others reported being unsure.

Participants were asked what they predicted could be some of the major benefits of implementing such a system in local government. Four out of eleven described greater resource reliability: “objective, credible advice”, “someone on staff with the right credentials to turn to”, “getting the facts right” or “better information”. Two others described “better understanding” and two more considered benefits in light of different contextual factors: “because there is no skill-set required to be an elected representative” or “to hold lobbyists to account”. One participant instead spoke to scenarios where “data follows implementation” [attempting to neutralise the significance of science in policy], one more reported being unsure what some of the major benefits could be, and another did not respond.

Participants were then asked what they predicted could be some of the major costs of implementing such a system in local government. Eight out of eleven described financial costs associated with staffing and office resourcing; two also described discipline coverage challenges and another predicted, “Decisions would [still ultimately] be political rather than scientific”. Two others reported no major costs, although explanations here appeared relative; made off the back of advance cost-benefit analyses – “only beneficial to the community in the long run” or “not significant within overall budget”. One other participant reported being unsure what some of the major costs could be.

When asked what characteristics of local government bodies like Dunedin City Council could limit the feasibility of implementing such a system, four out of eleven participants described financial constraints, especially for smaller councils; and four others described a lack of political will, especially with potential resistance from lobbyists and existing staff. Two instead reported being unsure and two others did not respond. One participant who described financial constraints added: “That we ‘surrender to the scientists’ is also a worry.”

Participants were then given an opportunity to describe the features they would include in a hypothetical science advisory system tailored for local government. Seven out of eleven responded, but one reported being unsure and another instead provided examples of issues such a system might address: “sea-level rise, pollution, anti-social behaviour”, etc.

Other respondents proposed structural features or principles upon which the system might operate, i.e., “a central panel accessible to all councils”, “a mechanism to fairly address issues in smaller councils” or “consultation, compassion, liaison at a local level, and acceptance of advice”.

Two more described government-funded access to university experts, and thorough examinations of the economic, social and environmental effects of different policy options. One participant who described collaborations between council and university added: “But even then there are differences in opinion – genetic engineering, global warming, sea-level rise” [appears to have been unaware of the scientific consensus on each of these matters].

Another public health issue for local government, water fluoridation, had led to policy development by Local Government New Zealand (LGNZ) advocating that the Ministry of Health assume decision-making on the issue.

Participants were briefed on the above and then asked if they would support the delegation of decision-making on water fluoridation by local government to the Ministry of Health. Eight out of eleven reported that they would support such delegation, while two reported otherwise and another reported being unsure.

Participants were then asked if they would have supported the delegation of decision-making on suicide risk management at Lawyers Head by local government to the Ministry of Health. All but two reported that they would not have supported such delegation; others would have.

Finally, participants were asked what they thought characterised a public health issue that was best addressed by representatives of central rather than local government. Two out of eleven participants did not respond and four instead provided examples of public health issues warranting central government intervention: “fluoride”, “epidemics”, “poor-quality housing and mass drug administration” or “immunisation”. Four others described public health issues where “the only correct answer lies in the application of science” or “the cost”

of delaying central government intervention and “consistency of advice” across the country must be addressed.

Three respondents also explained why they thought suicide risk management at Lawyers Head did not warrant central government intervention. One did not think local suicide risk management challenges could be addressed irrespective of local government elections. Similarly, another described the issue as “location-specific and in need of a local response”. One more participant opined that unless suicide risk management at the headland became an integral part of a central government suicide prevention strategy, the local community (through its council representatives) had every right to balance risk management proposals with the consideration of coastal amenities, as it did.

5.1.2 Interview

Survey respondents were invited to take part in a follow-up interview with the researcher. Interviews gave each councillor an opportunity to reflect on their survey with the researcher; speak to any points they thought the researcher may have misunderstood or overlooked, and clarify any responses at the researcher’s request.

Councillors were then asked about the coordinated response of a community to the emergence of a high-incidence location for suicide, how different communities can support one another when challenged similarly, and how these coordinated responses can be guided by robust scientific evidence.

All survey respondents took part in one-on-one interviews with the researcher spanning 30 to 60 minutes. The results below are divided, with a focus on attitudes towards suicide risk management, knowledge sharing, or science in policy. Different lines of questioning follow on from one another with greater spacing.

Attitudes

The following describes results from the first line of interview questioning, which considered the coordinated response of a community to the emergence of a high-incidence location for suicide. Attitudes towards suicide risk management were canvassed for three influential groups: councillors, journalists and science communicators.

Councillors

Participants were asked what influenced councillors' attitudes towards suicide risk management at Lawyers Head. They were then asked what instead should have influenced councillors' attitudes, and how decision-making in this context could be more efficient in future. Most reflected consistently on decision-making by their colleagues, but any self-assessments were complimentary. It is important to note that the prevalence of different attitudes or types of reasoning below is indeterminable; some observations may appear frequent, but multiple respondents could have been conveying their interpretations of the same former colleague.

All participants described public safety influencing councillors' attitudes towards suicide risk management. Expressions of concern extended to pedestrians and cyclists on John Wilson Ocean Drive, as well as to visitors to Lawyers Head. Speaking to suicide risk management specifically, one participant said, "Trying to save one life. Because we couldn't save them all, but any life we could save, by whatever means, we had to consider."

Public safety aside, nine participants referred to political expediency, i.e., adherence to self-serving means, particularly as media coverage of the issue picked up and local government elections neared. Demonstrations of the latter varied: some councillors accused of apathy, others of exercising power in numbers, appeasing vocal proponents, or 'playing the Devil's advocate'. One participant opined that the role of political expediency in decision-making had strengthened with the rise of career politicians in local government over the quarter-century passed; candidates once motivated by community service now just looking for a steady income.

Public consultation was inherent in discussions of political expediency, but four participants described it explicitly or spoke to the multi-dimensional nature of the issue as a result of public consultation. Three described financial cost as one of those dimensions. One also alluded to paternalism; considering circumstances under which local government had, or could have, restricted access to Lawyers Head, irrespective of public consultation, in the community's supposed interest.

Four participants described emotion influencing some councillors' attitudes towards suicide risk management, with varying degrees of contempt. Emotional decision-making was thought to have stemmed from bereavement, and compromised some councillors'

reasoning. Three participants also described personal interest influencing some councillors' attitudes, e.g., a family ritual threatened by road closure, or a family member working in emergency services. This too was reported to have compromised reasoning.

When asked what instead should have influenced councillors' attitudes towards suicide risk management at Lawyers Head, all participants again referred to public safety. However, most made these recommendations in light of observations to the contrary.

Two participants advocated accepting responsibility for public safety under these circumstances; one describing an internal struggle where some councillors questioned the role of local government – suicide risk management not falling under council's core services (network infrastructure, public transport, solid waste collection and disposal, etc.) – and the other describing a broader issue where some constituents thought suicide risk management was a medical challenge for the individual, while others thought it was a societal challenge for the community.

Two other participants also made recommendations in light of contradictory observations – both implying that public safety should have influenced councillors' attitudes towards suicide risk management, but each critical of different types of reasoning. The first had been disappointed by the “brazen and quite hardened” attitudes of some councillors who considered suicide risk management at Lawyers Head “not their business”. The second was disappointed by the failure of some councillors to exercise “unemotional and objective” judgement, i.e., “play the numbers game” to clearly define intolerable risk and ameliorate it.

Two more participants made recommendations in light of contradictory observations, both also implying that public safety should have influenced councillors' attitudes towards suicide risk management, but each advocating empathy to this end. The first had been disappointed by some councillors' harsh characterisations of the suicidal and the second doubted whether all councillors considered the widespread effects of suicide-related events at Lawyers Head, e.g., for the taxi driver who unknowingly drove a person to their death there, or the mental health nurse who periodically overhears suicidal patients discussing the headland.

Another participant thought public safety should have influenced councillors' attitudes towards suicide risk management, but in light of observations to the contrary advocated transparency to this end. They described how a risk management strategy in

communications went awry during deliberations over public access to Lawyers Head; road closure at one point extended to allow for ‘ecological assessment of Ocean Beach’, when public safety was actually of greater concern, but some councillors would not risk drawing unnecessary attention to the headland as a high-incidence location for suicide. Letters to the editor in the *Otago Daily Times* support this participant’s report of growing public concern that councillors had tried to “pull the wool over [their] eyes” in this instance.

Finally, one participant thought social amenity should have influenced councillors’ attitudes towards suicide risk management too. They advocated an openness to “unintended consequences” when deliberations are iterative, and relayed the story of one motorist with a physical disability who protested road closure at first, only to support it after engaging with members of the public and their pets during a wheelchair wander along the drive.

Participants were then asked how decision-making in this context could be more efficient in the future. There was understandable crossover between answers to this question and the last. One participant thought it was important to recognise the limitations of evidence-based policy, e.g., when determining opening hours for JWOD, or fence design for Lawyers Head. They described decision-making during some spells as “farcical” because of a preoccupation with evidence; very little of which, according to this person, was robust or location-specific in this case. Another participant thought collaboration with community groups could enhance decision-making outcomes, by strengthening mental health support in parallel with access restriction measures.

Journalists

Participants were asked what influenced journalists’ attitudes towards suicide risk management at Lawyers Head. They were then asked what instead should have influenced journalists’ attitudes, and how decision-making in this context could be more efficient in future. Again, the prevalence of different attitudes or types of reasoning below is indeterminable; some observations may appear frequent, but multiple respondents could have been conveying their interpretations of the same former acquaintance.

All participants referred to newspaper sales influencing journalists’ attitudes towards suicide risk management. They described headlines, stories and the types of news that would sell papers, e.g., “[their] objective is to make news and it’s never good news”, “only

interested in stories; and good news stories don't sell papers", "always want to publish bad news – their motivation is obviously to sell newspapers", "selling papers and trying to get one-up on council" or "whatever is sensational and will sell newspapers".

One participant described the reporting as "typically emotional" and neglectful of scientific evidence. They drew parallels between reporting on public access to Lawyers Head and that on water fluoridation; journalists preferring to profile a personality over a pundit, and report on feelings rather than facts.

Three others made strong statements about the attitudes of journalists towards suicide risk management, saying they were "reckless and irresponsible", "never going to be on your side", or "one of the most destructive forces in Dunedin". Another reported having "no respect for them at all after [the case]".

Two more tempered criticisms by describing how councillors had at times drawn unnecessary attention to themselves: "everyone had a different slant on it and the arguments they had were huge – there was quite a bit of emotion at times", or "there was a degree of manipulation; a politician could make quite a fuss about an issue in public, knowing they would be reported".

Newspaper sales aside, four participants alluded to public safety influencing journalists' attitudes when describing ways reporters and/or editors had exercised discretion around suicide in the media. Three described local journalists as "generally pretty responsible", "very sensitive", or "absolutely superb" and "all pretty tolerant". They observed that journalists "actually [exercise discretion] quite well here" or "don't make a big splash about [suicide in the media]". One pointed to journalists' use of euphemisms in suicide-related reporting as an example: "no suspicious circumstances surrounding the death" or "not looking for anyone else in relation to the death". The two others reported just rare occasions for concern: "only had to pull them up two or three times in that [thirty-year] period" or [of another incident] "but that was a real exception".

The fourth participant was not so complimentary, but acknowledged how striking a balance with suicide-related reporting could be a "learning curve" for journalists. They also claimed to "understand that friction with the press" because funding for mental health support services and suicide prevention initiatives often depended on media coverage.

Similarly, one of the participants who had been largely unsympathetic towards journalists tempered criticisms by describing how they often held council staff to account when critiquing staff reports to council in the media. The person continued, “and better [council] reporting leads to better policy-making”, thus also expressing an understanding of ‘that friction with the press’.

Four other participants did not describe public safety influencing journalists’ attitudes, but did acknowledge their tolerance under some circumstances [despite their reported preoccupation with newspaper sales]. Journalists’ tolerance featured in negotiations of what matters would be addressed at a council versus committee level; the latter being inherently less public. Furthermore, in negotiations of what committee matters would be addressed in public versus non-public parts of meetings. Although journalists did not feature directly in these negotiations, they did have to adapt to negotiation outcomes and make sense of whatever information they were privy to.

One participant described how “so many discussions were behind closed doors, which most council matters perhaps shouldn’t be”. Another recognised the strains of sensitivity, describing how councillors “always used to talk in charades; tried to avoid the name of the location and the object of our concerns there”. All four appeared grateful to journalists for exercising such tolerance, because news of council opacity on a public access issue would likely have triggered some backlash.

When asked what instead should have influenced journalists’ attitudes towards suicide risk management, all participants again referred to public safety. However, most made recommendations with respect to public and/or commercial interest.

Two participants advocated sensitive reporting of suicide-related matters. One described the challenge as a “framing issue”; to refine story elements that are “fundamentally in the public interest”. The other called on journalists to “be more responsible”. Both thought brevity was best, i.e., concealing the identity of the deceased and the means by which they took their own life.

One went on to say, “The media are never held responsible”, and expressed regret over the council response to an instance of dubious *ODT* publishing during the case. They questioned whether council should have lodged a formal complaint with the New Zealand Press Council, but acknowledged some councillors’ concerns that attempting to hold the

publisher to account could have drawn unnecessary attention to Lawyers Head as a high-incidence location for suicide, i.e., “better just not to say it; otherwise you build a story”.

Another participant reflected on how building relationships with journalists could influence their attitudes towards suicide risk management. They described establishing “mutual respect” and “trust” with journalists and, where appropriate, providing them with exclusive background information off the record to guide their discretion.

Participants were then asked how decision-making in this context could be more efficient in future. There was understandable crossover between answers to this question and the last. One participant thought suicide risk management could be improved by drawing journalists’ attention to features of “constructive” suicide-related reporting, e.g., stories de-stigmatising mental illness and publicising avenues of support. They also acknowledged the role of suicide-related reporting in stimulating public demand for greater government spending on mental health support services and suicide prevention initiatives.

Another participant thought suicide risk management could be improved by inviting journalists to feature in a working group with councillors and other key local stakeholders. This participant drew on experience building a similar working group in the aftermath of riots in the student quarter years before, i.e., fostering collaboration between community forces by establishing a shared vision and a means by which to realise it. However, they also described a “consensual approach” to working group participation where journalists in particular would “reserve the right to break ranks”.

Similarly, a participant advocated collaboration when reflecting on urgent road closure. Following the death of a woman at Lawyers Head shortly after the reopening of John Wilson Ocean Drive, this councillor had prompted the police area commander for Dunedin-Clutha to submit a strong letter of recommendation to council urging that the drive be closed indefinitely. Decision-making in suicide risk management by journalists thereafter was thought to have improved in part out of respect for the collaboration between council and emergency services, particularly under dire circumstances. It should be noted that any such improvement could also have resulted from accusations of irresponsible publishing by the *Otago Daily Times* in the build-up to the reopening of John Wilson Ocean Drive.

Science communicators

Participants were asked what influenced science communicators' attitudes towards suicide risk management at Lawyers Head. They were then asked what instead should have influenced science communicators' attitudes, and how decision-making in this context could be more efficient in future, e.g., when advising councillors and/or journalists. Science communicators in this context included SL, police officer, and any other suicide risk management experts councillors may have interacted with during the case. Once more, the prevalence of different attitudes or types of reasoning below is indeterminable; some observations may appear frequent, but multiple respondents could have been conveying their interpretations of the same former acquaintance.

One participant accidentally did not respond to this set of questions (the result of some tangential discussion and the researcher's failure to carefully monitor feedback). All ten other participants described public safety influencing science communicators' attitudes towards suicide risk management. However, most attributed these 'one-dimensional' attitudes to the office held by different science communicators, suicide risk management being "their particular sphere of interest and concern" or "in their job descriptions". Similarly, one participant opined that these attitudes were associated with "a sense of duty to the community they were charged with looking after". Another elaborated, "The medical profession doesn't want deaths or injuries" and "police want to prevent deaths and trauma". One more described science communicators as being "driven by one key medical concern": the prioritisation in this case of "life over quality of life".

Eight respondents alluded to the public safety focus of science communicators being evidence-based, describing "epidemiological evidence", "statistics", "data" or "papers". Five also relayed scientific explanations for this evidence, and praised elements of science communicators' presentations as "clear", "professional" or "compelling". Two others commended science communicators' transparency and accountability; presenting evidence irrespective of their titles, but willing to engage in discussions about the evidence drawing on their respective professional backgrounds.

One participant described public safety influencing science communicators' attitudes towards suicide risk management, but with respect to emergency services personnel in particular: "Nobody wants to see someone take their life. But it's the fact that, in taking

their life, they end up in a place where someone else must risk their life to recover the body”. One science communicator here did represent local emergency services, but this participant was not implying the consideration above was self-interested; only that someone with greater exposure to such consequences would likely prioritise them.

Another participant described public safety influencing science communicators’ attitudes towards suicide risk management, but alluded to a power struggle between council and science communicators. They reported one science communicator being “clearly on a crusade” and both having “joined forces” and “ganged up” on council. However, they later tempered criticisms by saying the first science communicator was in fact “not goal-oriented” and the pair teamed up because “they were the experts on it” and “they both believed [in the risk management strategies proposed]”. Consistent with the latter, a different participant described having “every respect for police and the medical profession” and “[never questioning] their ethics or motives at all”.

When asked what instead should have influenced science communicators’ attitudes towards suicide risk management, all participants again alluded to public safety. However, two thought the evidence base for science communicators’ public safety focus could have been stronger, and two others thought science communicators’ attitudes towards suicide risk management should have been more pragmatic.

One of those in favour of more robust evidence relayed the dissatisfaction of some councillors with how few suicide deaths were captured in the science communicator’s study, i.e., the difficulty in measuring the effect of one variable on an infrequent outcome over a short period of time. However, this participant went on to imply that while more robust evidence would have been preferable, it would not have changed their personal stance: “Some of the criticisms were, ‘Oh, the stats are so small.’ Yeah, it’s very small. But it’s still people.”

The other participant in favour of more robust evidence considered how science communicators could have presented a “balanced” dataset, e.g., accounting for the health, safety and wellbeing of all domain users under different conditions. However, they went on to acknowledge that, given time and resource constraints, it “would be asking so much of [science communicators] that they would cease to come forward”. This participant also questioned if it was not the job of council policy analysts to collate such data, even if the onus to generate it remained with submitters.

One of those in favour of a moderated public safety focus said, “It was a case of life and death, and to be the arbiter in that is a huge challenge. How far do you go to protect people when [safety measures] become completely absurd?” This participant reflected on the council response to cyclist deaths on the local one-way system, balancing the wants and needs of different road user groups, but deducing, “You can’t make everything a hundred per cent safe for everybody.”

The other participant in favour of a moderated public safety focus used two more examples – crash risk for young male drivers and fall risk atop tower blocks – to illustrate the same principle. They challenged, “Young male drivers tend to be overrepresented in all types of crashes. Does that mean we revoke the drivers’ licences of all teenage boys?” In contrast, they pointed to “common sense” safety measures like those atop tower blocks: “You take the top of the Shard in London, or the Empire State – if you just wander in off the street, all top access to those buildings is clearly barricaded so you can’t jump off.” This participant deduced, “You deal with suicide potential on a case-by-case basis.”

Participants were then asked how decision-making in this context could be more efficient in future, e.g., when science communicators advise councillors and/or journalists. There was understandable crossover between answers to this question and the last. Two participants cautioned science communicators against neglecting or underestimating the potential role of private interests in community-based suicide risk management, e.g., when guiding journalists to report responsibly on suicide-related events, or proposing restricted access to private property when high-incidence locations for suicide emerge there. Both participants predicted these scenarios would present far greater challenges for science communicators than with councillors elected to serve in the public interest: “It would be more difficult to persuade the media to say nothing if that was considered the best course” or, “It won’t always be on council property”.

Two other participants thought science communicators’ decision-making in suicide risk management could have been improved with better understanding of local government proceedings. One reflected, “There could have been some mileage gained by taking a bit more information privately”, i.e., in committee rather than council meetings, and in non-public rather than public parts of committee meetings. The other would have valued science communicators’ inputs “at the hearings”. They explained, “We don’t have the luxury of

giving them a vote, but it would have been helpful to have them present, perhaps with the opportunity to ask questions [of submitters].”

Conceivably, science communicators with better understanding of local government proceedings could have proposed greater involvement with council consultation and deliberations. However, science communicators in this case made voluntary submissions to council. Councillors did not call upon them in an advisory capacity, but still ultimately determined their level of involvement; and councillors may have been criticised for bias had they granted greater involvement to one set of submitters over others, as well as copping flak for “being all secretive about it” when taking advice in a private setting.

Not too dissimilar from recommendations about local government proceedings, one more participant suggested that science communicators draw parallels between their proposed intervention(s), and policies already implemented by local government. They used school gates and median barriers as examples of common council-funded public safety measures, and encouraged science communicators to say to councillors, “You have a role here, but you do this stuff quite regularly”, i.e., “normalising” the role of council in public safety, despite sensitive circumstances.

Commentary on science communicators’ attitudes towards suicide risk management revealed greater criticism of one than another. One participant described being “so impressed” by a science communicator who “made such an impact on [them]” and restored their faith in police. Another participant said, of the same science communicator, “I’ve got a huge amount of respect for [them]; quite matter-of-fact, but underneath the surface took it quite hard; never smiled at the wrong time, never got angry; just did the job [they] were expected to do – which wasn’t always easy.”

However, as with the previous allusion to a power struggle between council and science communicators, one participant questioned the objectivity of the other science communicator, saying they “carried a bit more personal view to it than other medical people” and had been “criticised by some [councillors] for being too connected to it”. Another participant relayed similar criticism: “A lot of people saw [this science communicator] as a researcher, not as a doctor.” These people were said to have distrusted the science communicator’s weak data and poor corroboration, and questioned if this project was not just an opportunity for them to publish in a scientific journal.

This science communicator did publish in the *Australian and New Zealand Journal of Psychiatry* in January 2009. Data collection for the study ceased just over six months after the science communicator first submitted to council, and publishing after scholarly peer review in the leading psychiatry journal for the Asia-Pacific region suggests data and its corroboration were of high quality. However, the councillors above speculated that submitting to council was a stalling tactic for the science communicator; allowing them to fulfil their two-year monitoring window and strengthen their pitch to publishers. It was unclear to what extent public safety featured in these interpretations of the science communicator's attitude towards suicide risk management.

Finally, participants were asked if they saw potential in a collaborative community approach to risk management at high-incidence locations for suicide; primarily involving councillors, journalists, medical professionals and emergency services personnel. All reported so, but with reservations about diverse attitudes towards suicide risk management, as detailed in responses to the questions above.

Knowledge sharing

The following describes results from the second line of interview questioning, which considered how different communities could support one another when challenged similarly by the emergence of high-incidence locations for suicide in their respective neighbourhoods.

Participants were asked if during decision-making on issues associated with Lawyers Head it would have been valuable for them to learn about how other communities had addressed risk management at high-incidence locations for suicide. All participants reported so, but with reservations largely about the applicability of measures undertaken elsewhere at the headland. Some drew comparisons between Lawyers Head and other high-incidence locations for suicide to explain.

Five participants recalled references to Grafton Bridge in Auckland as a high-incidence location for suicide. However, only two elaborated on the risk management strategies implemented there, and another was confident council had not received information on any associated policy development. Similarly, two participants described The Gap in Sydney as a high-incidence location for suicide, but just one elaborated on how risks there had been

managed. Other high-incidence locations for suicide included Highgrove and Lovers Leap in Dunedin, the Golden Gate Bridge in San Francisco, Beachy Head in East Sussex, and Niagara Falls in New York State. Few of these references were explicitly relayed from science communicators in this case.

When explaining their reservations about the value of other communities' experiences in solving a local problem, participants said: "It wouldn't have changed my decision", "[Local evidence] was pretty compelling to me", "I'm cynical as to whether we would've got something out of it – the cases would all be distinguishable", or "We had to deal with what was in front of us". Another participant described limiting characteristics of local council: "Statistics [at other locations] were effective measurements. We have a relatively small ratepayer base and other capital items that were constricting our finances terribly". This implied that local council needed stronger evidence to warrant risk management spending, or fewer financial constraints to act on the original evidence, as opposed to other communities, which reportedly had stronger evidence to support risk management strategies, and more money to spend implementing them.

One participant made strong statements about the potential irrelevance of other communities' experiences in solving a local problem. For example, when considering the general effectiveness of road closure at Beachy Head, they said, "That's not scientific; that's bleeding common sense. I don't need to be told by a scientist that if you close the road to the jumping point, you won't have them jumping off." However, they then considered the Beachy Head community sharing information on the effectiveness of road closure elements like barrier type, closure times, security presence, and the cost of the aforementioned, i.e., "If we'd had that evidence, then that would've assisted. But I would've remembered that sort of evidence, because you'd be fascinated to see what other people were doing."

In contrast to previous strong statements, another participant reflected on the value of the Grafton community's experience in managing risk. Councillors had reportedly discussed whether Perspex canopies on Grafton Bridge were "just a practical way of physically stopping people, or there was the whole moral thing; having an obligation to make everything ultra-safe, so people couldn't hurt themselves on it." Such discussions fed into the council approach to risk management at Lawyers Head: balancing safety with amenity.

Despite most reservations being about the applicability or relevance of measures undertaken elsewhere at Lawyers Head, one participant also expressed concern over sensitivity, saying “If you start talking about where the hotspots are, you run the risk again” [of drawing unnecessary attention to the headland as a high-incidence location for suicide]. Although councillors could have received sensitive information from other communities privately, there may have been pressure to reference this material in public if it significantly influenced the local risk management strategy proposed.

Participants were then asked if they thought other communities confronted by risk management challenges at high-incidence locations for suicide could benefit from their experiences, and those of local journalists and science communicators. All eleven participants reported so; four even provided some advice for such communities.

One participant described the basic principles of suicidality as “underpinned by good science” and likely to be “helpful to councils around the country”, e.g., “that people who try and commit suicide tend to fall into groups; they’re jumpers or gassers or whatever. And that they tend to gravitate towards one spot.” This person also predicted councils would be relieved to know “you don’t have to do a lot” and spoke to the counterintuitive effectiveness of JWOD closure in suicide risk management at Lawyers Head, i.e., “You just had to dodge the barrier and walk, but they didn’t.” Similarly, as relates to “good science”, another participant recommended that council staff perform a “literature search of other suicide hotspots and issues”. They implied councillors may need to prompt such a review, but added, “Staff are usually quite happy to help”.

A different participant suggested risk management at high-incidence locations for suicide could be a communications challenge, i.e., “You can focus on the problem, or you can flip that problem on its head and focus on the positive.” They drew on their experience with nurse recruitment in a rural town, i.e., “We had a nursing shortage and some public health issues, but rather than dwell on that, we instituted the Middlemarch Singles Ball to attract young health professionals to town.” The participant thought council “did really badly” with this communications challenge for risk management at Lawyers Head, but encouraged other communities to consider, “What could be the good news story?” One group of council submitters, The Promenaders, appeared to present a positive alternative vision for the domain, as recommended by the last participant. However, they may not necessarily have done so with risk management in mind, i.e., “to flip that problem on its head”.

Evidence base and communications aside, one more participant advised councils to recognise their risk management limitations. They reflected on the council response to a suicide death at nearby Highgrove, as well as weaknesses in the risk management strategy for Lawyers Head. Reportedly, “Council had little control [at Highgrove] because all they had there was a road end and a fence. We had no way of keeping them out because you had a whole lot of residential people”. In this instance, council had been powerless to do any more than enhance street lighting in the area as a deterrent. Similarly, the person recalled council being unable to negotiate a deal with the Chisholm Park Golf Course to fence the ninth hole adjacent to Lawyers Head.

Advice about recognising limitations was consistent with responses about science communicators’ attitudes towards suicide risk management, i.e., when two participants cautioned science communicators against neglecting or underestimating the potential role of private interests in community-based suicide risk management; the participant here suggesting that councils too should anticipate challenges when attempting to manage risk on private property, albeit in the interest of public safety.

Commentary on knowledge sharing between communities revealed exchange opportunities for local government representatives in particular. Two participants described annual Local Government New Zealand (LGNZ) conferences, with one tempering that “only some representatives on some councils attend conferences” and “LGNZ does share some technical information, but there are so many issues”. The other echoed, “There is an opportunity to share knowledge there [at conference], but it’s very limited.” They explained that “usually” just the mayor, deputy mayor and a committee chair will attend conference; and the programme is policy-heavy, with many councils vying to present on issues relevant to their constituencies, i.e., “The only real opportunity to get an audience from local government is to put up somebody of real note from the medical profession to present a paper. That’s the only way you’d get it [suicide risk management] through.”

One participant continued on the topic of knowledge sharing, lamenting the high degree of redundancy across the local government sector. They used legal expertise as an example of a critical resource for all councils, but currently sought by each as and when needed at unnecessary cost to the ratepayer, i.e., “Why couldn’t there be a process whereby, on a particular issue, they [councillors] get a legal opinion and post it on the web somewhere, so that all those other councils don’t have to go and pay for the same advice?” The person

drew parallels between legal and medical expertise in local government and deduced, “There’s no doubt that sharing information is something that should be done right across the board in council.” They did not address quality assurance or incentive schemes for the knowledge-sharing system floated, i.e., how to set and maintain advice standards, and how to prevent free-riding.

Science in policy

The following describes results from the third line of interview questioning, which considered how coordinated responses within and between communities to the emergence of high-incidence locations for suicide could be guided by robust scientific evidence. The first two questions explored local practices, while the following two probed participants’ broader perceptions of evidence-based policy development for matters outside of suicide. Different lines of questioning within this section follow on from one another with greater spacing.

Participants were first asked what other issues they encountered in local government that required engagement with scientific information. Nine out of eleven reported water fluoridation, seven described climate change, six spoke to sea-level rise, and three mentioned coastal erosion. Other scientific policy areas included environmental issues like sustainability, recycling, wind power generation, carbon emissions, oil drilling, and storm- and ground- water management. Health and safety issues like water quality, sugar tax, shark nets, and road maintenance were also included. Below are councillors’ perceptions of science in policy in each context; a breakdown of snap commentary rather than elicited responses.

Water fluoridation

Seven participants reported satisfaction with evidence from the dental fraternity on water fluoridation, e.g., “Never an issue; it was a decision council made yonks ago after a public outcry”, “I had no expertise and so relied solely on experts at the [University of Otago] Faculty of Dentistry and the Ministry of Health”, “The medical evidence in favour of water fluoridation is overwhelming; beyond reasonable doubt”, or “I did my own research into fluoridation and wherever there was a high natural occurrence of fluoride, oral health outcomes were better”.

Each of these participants at least alluded to a scientific consensus on the oral health benefits of water fluoridation. Two also made reference to children who might not otherwise reap the oral health benefits of fluoride exposure; one in retrospect identifying as one, and the other asking, “Do parents have the unfettered right to make decisions for their children? I know of so many inadequate parents that I think, ‘No, government should make those decisions for the sake of the children.’”

Despite evidence from the dental fraternity proving compelling for most participants, one cautioned that oral health experts only submitted after prompting during one round of public consultation: “There were reams of paper coming in from those who wanted fluoride removed from the water, but there was almost zero information coming from the experts.” They recalled council serving the Faculty of Dentistry with, “Well, if you don’t front and tell us why, then why shouldn’t we take it out?”

Two others sympathised with anti-fluoridation activists: “The issue became so intense and passionate and technical – it was just easier to support the health authority’s view”, or “The cases put by both sides weighed in favour of the dental fraternity, but I understand both sides – it’s a very tricky one.” Fortunately, according to the first participant, natural water fluoride levels in Dunedin were just outside of the range recommended by the World Health Organisation. Therefore, to “appease both sides”, councillors settled on just moderate water fluoridation to bump water fluoride levels in Dunedin into the lower end of the recommended range.

Of the two remaining participants who reported dissatisfaction with evidence from the dental fraternity, one described local cases of [alleged] fluoride-induced bone deterioration and having sought relevant evidence from the US via the Internet – “I had huge files on fluoridation.” As for the Ministry of Health, this person said, “I don’t think they ever examined the scientific evidence” and “I don’t think they had enough information; they didn’t do the work they needed to do.” The other participant who did not support water fluoridation merely exclaimed, “Get that poison out of our water!”

Climate change

Three participants expressed support for climate change mitigation, describing the “overwhelming consensus” or saying, “Reports are really quite clear and well peer-reviewed; any resistance is emotional.” One emphasised that the role of elected officials in

this context was to seek credible advice rather than attempt to understand climate change scientifically: “Most of the world’s scientists have focussed on it [climate change]. What am I really going to add?” They acknowledged, however, that a basic scientific understanding of climate change was important when communicating with the public, and trying to “rebut contrary views from mavericks”.

Three other participants expressed climate change scepticism. The first asked, “Where are you going to get people who agree that there are issues with climate change?” They referred to the unpredictability of natural disasters and said, “The Earth is however many millions of years old and it’s had all sorts of different ages of climate. It’s just going to keep on going; there’s nothing you can do about it.” The second participant disputed projections for sea-level rise from “the science community” after consulting with the University of Otago Department of Surveying: “How can you say that you’re going to go from six [centimetres] to 120 in twenty-five years, when it’s taken a hundred years to rise six?” They drew a contrast between “actual [historical] data” from surveyors, and “computer data” from climate scientists’ predictive modelling – the latter apparently unbelievable. Similarly, the third participant disputed a downward movement trend for land surface elevation in the Dunedin area: “That was a headline: ‘South Dunedin is sinking’. Well, it’s not blimmin’ sinking. And a lot of that came in because of the floods. Well, the floods had nothing to do with climate change or anything like that. It was to do with poor maintenance on the mud tanks at the Musselburgh pumping station.” This person vaguely speculated that “scare tactics” were being used; presumably by the University of Otago School of Surveying, Dunedin City Council and/or Otago Regional Council to stimulate support for climate change mitigation.

Irrespective of participants’ attitudes towards climate change, three also described relevant communications challenges. The first two expressed concern over council dialogue with the public: “There was work going on behind the scenes to see how we could deal with it [flood risk], but you couldn’t go and tell the community because of the repercussions” and “I am worried about how we communicate in a non-threatening way” to avoid fear-driven “push-back”. Both advocated sending a clear, balanced message to the public: conveying risk, but also laying out a detailed plan for short- to long-term risk management. One reflected on an exemplary presentation by the Parliamentary Commissioner for the Environment about coastal erosion, saying, “She was really good; very, very good at communicating.” The third participant instead expressed concern over council exchanges with advisors: “You

have to build relationships with the consultants, but you've also got to watch out that consultants aren't in a position where they have a licence to make money.” This person used coastal erosion as an example of a policy area where an advisor, consultant or science communicator could have had an undisclosed conflict of interest.

Other scientific policy areas

Other scientific policy areas included environmental issues such as recycling and oil drilling. On these topics, two participants drew hope or expressed scepticism. The first used recycling in Dunedin to illustrate constituents' adaptive nature: “The amount of public opposition to having to separate out recyclables from rubbish when we introduced recycling bins – people didn't want it; they didn't want to pay for it. But when those bins arrived and they started using them, slowly they found that it wasn't so bad. Then there was an argument about separating glass from the rest [other recyclables], but it wasn't as big an argument; it cost a little less, so we got that in. I tell you, if we said we were going to stop that service now, we'd get voted out.” Another participant disputed the harms of deep-sea oil drilling, saying, “We're supposed to be running out of oil, but oil has never been so cheap – somebody's manipulating something there.”

Furthermore, other scientific policy areas included health and safety issues like sugar tax, shark nets and road maintenance. On these topics, three participants made observations about governing practices or styles. The first considered different perceptions of public health interventions like a sugar tax: “That's a pendulum; whether you're a nanny state or you're caring for your residents and ratepayers.” The second considered the withdrawal of shark nets from Dunedin waters after forty years [appearing to disregard marine conservation]: “Sometimes councils are driven by cost, but they've also got to look at, ‘Who are they here to represent?’ Because they're here to represent the community.” The third drew parallels between suicide risk management at Lawyers Head and local highway maintenance; both prompting policy-makers to attempt to place a value on human life: “You take the old-time, hard line view of the New Zealand Transport Agency for example: a million dollars [for road maintenance] per death. Pretty brutal, hard-nosed stuff, but you [local government] had to play the game to get the money.”

To conclude snap commentary, two participants reported generally valuing science in policy: “That was the backbone of my political career: up-skilling my knowledge and

understanding the subject matter that was before us”, or “I up-skilled myself in a lot of the capital expenditure items [council-owned property, buildings and/or equipment].” One distrusted the Internet and preferred to find a local expert, i.e., “have a coffee with them and pick their brains”. The other had relied on long-serving staff, many of whom were no longer at council, which this participant described as “a real loss”.

Another participant concluded, “You must have confidence in the experts that are coming and delivering information to council”, but three contested this. The first observed, “None of these things are an exact science”; the second cautioned, “Experts are not always right; they’ve got their own preconceived ideas and views”; and the third reflected on drawing the line with social policy in particular, as it was “difficult to get the right person to advise you in that area”. One more reported that on occasion “staff were a little fearful to go against a [certain] submitter”, suggesting that confidence in council staff as well as independent experts could be weakened by perceived biases.

Participants were then asked how they compared methods of science communication in these policy contexts with methods for issues associated with Lawyers Head. Two participants accidentally did not respond to this question; the result of some tangential discussion and the researcher’s failure to carefully monitor feedback. All nine other participants did not draw direct comparisons between methods of science communication across different policy areas, but instead described their personal approaches to developing scientific understanding in council.

Respondents featured on a spectrum of passive to active consultation, i.e., from those preferring to engage only with material brought to them by submitters from the public, council staff and commissioned experts; to those preferring to conduct their own research, whether by reviewing the scientific literature online and/or meeting with local experts. When evaluating methods of science communication, respondents could also be distinguished by their confidence in council staff and advisory systems.

Four respondents preferred passive to active consultation; to engage only with material brought to them by submitters from the public, council staff or commissioned experts. One implied this approach was pragmatic, given the “1300 meetings every triennium, and probably twenty-five to thirty-five decisions to make [at each meeting]”. Another appeared to dismiss active consultation when describing how “council staff bring people in to support and advise you”. They drew upon their experience with coastal erosion at Middle Beach:

“All of the technical stuff, all of the designs for what needed to be happening – all of the work was done for you.” The third participant emphasised the specific role of “policy staff” in “looking for things” [active consultation], but acknowledged how some “switched-on councillors who are pretty bright” could pursue different leads based on experience. The fourth emphasised the layers of decision-making complexity that exist even when dealing only with council material: “Trying to balance opinions and take that kind of middle road, which makes everybody a little happier. It’s not about extremes.”

Five respondents instead preferred active to passive consultation; to review the scientific literature online and/or meet with local experts, as well as engaging with material brought to them by submitters from the public, council staff and commissioned experts. One “did some of [their] own reading” but reported struggling to “know which bits of research are suspect and which are really reliable”. They also recalled consulting local experts, on water fluoridation for example: “I spoke to my dentist and he said it was a good thing to do, so I stuck with it.” Another stated in principle, “I do my own research, talk to experts, or go to particular seminars, workshops or conferences.”

Two more attested to reviewing the relevant scientific literature, but one maintained this should have been carried out by council staff, while the other asserted, “We can’t always rely on staff.” The second continued, “I think you have to stand back from the passion and your own interests, and find out information – so you can challenge staff when appropriate, and understand where our community is with the science.” They cautioned, “It’s certainly not about [just] looking for the evidence that supports your view. I spend quite a lot of time trying to understand the counterarguments.”

The fifth participant in favour of active consultation reflected on meeting with local experts: “I would trust people, but I’ve been burnt a few times doing that.” They described Dunedin’s size and its university as “hugely” beneficial when attempting to develop scientific understanding in council: “You don’t know everyone, but you know a fair few people, and you can build a network very quickly. The life experience, the people, the interconnection; you’ve got lots of little favours [advice free of charge]. It’s available all over. And that’s what life’s about, in Dunedin anyway.”

Six respondents expressed general confidence in council staff and advisory systems; others did not make explicit reference to these. One outlined the standard procedure whereby councillors “read what material’s put before them” and “hopefully they’re good enough to

sort through what extra information is needed”. This participant continued, “About half of decisions go back for staff to make further enquiries”. Another described council staff exercising “whatever skills they’ve got and consulting with whoever”, but added, “From time to time you commission reports from I suppose ‘experts’, especially in the financial line”. One more reported having “no problem with council staff” as they “always put up the options”. However, this respondent thought at times council staff “lacked the understanding or the same passion for the cause” [as councillors]. Another respondent was critical of council staff reports, saying they were “more about what it’s going to cost us and what the options are; not about understanding why and what might work. I think they [reports] could be more rounded.”

Of those with general confidence in council staff and advisory systems, three described how relevant methods of science communication could still be improved. All three described desirable characteristics of a council policy analyst, irrespective of their job title: “Someone who can come to the council table and explain the processes, so you’ve got a better chance to ask questions and clarify your own thinking”, “If they’re ambitious and there for the right reason: to be in public service”, and “They’ve been to university and they can do a basic literature search and assess the validity of surveys and statistics.”

Two cautioned that the efficiency of council staff and advisory systems could be influenced by council leadership, e.g., the chief executive officer, departmental management and/or designated councillors: “If you’re chair or deputy chair of a particular committee, you can waggle the finger and ask staff to dig deeper for that information; to push for excellence. Sometimes if you’ve got a lazy councillor chairing a committee, things just don’t get done” or “Policy analysts are smart; they’re completely capable. But they operate within safe boundaries.” The second participant continued by suggesting that council policy analysts register with an independent “professional body” for employment protection; to prevent members of the public jeopardising “balanced reporting” through council leadership.

Participants who preferred active to passive consultation (i.e., to review the scientific literature online and/or meet with local experts, as well as engaging with material brought to them by submitters from the public, council staff and commissioned experts) were more likely than others to have been critical of council staff and advisory systems. However, not one stated that distrust in these had driven them to seek information from external sources.

Four participants also described the democratic process influencing their approaches to either developing or applying scientific understanding in council. The first expressed concern over public consultation, as hearings and surveys inevitably selected for a certain type of submitter: “You ask people to come forward with their issues, but the child is seldom spoken for and the environment cannot speak for itself. The physically disabled are usually well represented, but not so much the mentally disabled or even people who are just shy.” The remaining three alluded to political expediency when applying their scientific understanding: “We’re a democracy. It’s not someone saying, “This is what thou shalt do.” If I want to be here [in government] in the future, I’ve got to do things that people agree with, so they’ll vote me back in”, “We do consult on important stuff, but the idea of delegating to a non-elected official, however well-qualified they are scientifically, is a dangerous practice”, or “You need to be able to justify spending the money so that ratepayers can get a better understanding.”

Local practices aside, participants were asked if they supported the commitment of central government in New Zealand to evidence-based policy development. All reported so, with two adding, “It’s not a complete smoke screen; I don’t think it’s a public relations exercise”, or “I don’t think the advice is always accepted though.” Participants were then asked if they would support demonstrations of similar commitment by local government, e.g., instituting departmental science advisors. All reported so, at least in principle, but most expressed reservations about the economic feasibility of such an advisory system.

Four participants disputed sufficient demand for departmental science advisors in local government, either generally or in certain departments: “The number of issues arising for council that need scientific advice is probably much less than in central government”; “Not many decisions councils make probably need that kind of thing because they’re not of national significance”; “Not much is needed scientifically on the community side of things, but with the environment, that just opens up a massive can of worms”; or “Local government isn’t responsible for health or law enforcement, so suicide prevention just wouldn’t be seen in the first instance as council’s responsibility.”

Four others explained probable internal and external resistance to departmental science advisors in local government. One spoke to relationships between elected officials and council staff: “There’s a number of councillors who don’t trust staff.” Another cautioned that departmental science advisors could be perceived as tyrants: “What you can just about

end up with at times is a dictatorship sort of thing; whatever that person thinks, whether scientifically right or wrong, is put forward as fact, which makes it difficult for people without the same knowledge to argue the point.” One more also cautioned that departmental science advisors administered by central government in local government would not be well received. They described central government devolving “more and more responsibility to local government” but giving them “no money to go with it” and surmised, “If you rated advisors to council, your own people are fine – people from Dunedin or from the university would be hugely respected – but central government would be down here somewhere.” The fourth added, “There’s certain advice that’s got to remain confidential as it could have financial implications for council.” They cautioned that outsourcing could heighten risks around confidentiality for locals.

Three more participants implied that any demand for science advisors in local government could already have been met by “experts in certain areas that are at the top of their departments”, “so many excellent people in all those disciplines from the university who have research at their fingertips and are willing to give freely of their time and advice”, or similarly, “so many scientists from the university at our doorstep that we can partner with.” One more opined that any demand for science advisors in local government was likely dampened by existing consultation challenges: “it [excessive public engagement] stifles development, stifles ideas, stifles the whole bit; either from a time- or money-consuming point of view. There should always be consultation, but at some point you’ve got to get on with life and make decisions.”

Irrespective of demand for departmental science advisors in local government, nearly all participants disputed the feasibility of their supply; recruiting advisors with the necessary expertise and communication skills, and keeping them on staff with an attractive salary.

Three participants expressed concerns over the expertise of departmental science advisors in local government: “The specialisation is so acute now. Could you ever have generalist science advisors? If not, which ones are we going to have permanently?”, “I don’t particularly like the term ‘science advisor’. It needs to be broad, so the social science doesn’t get lost”, or “To think that you could transplant one person to reflect the advice necessary for all local authorities is pretty difficult.”

Two other participants emphasised the need for science advisors with communication skills as well as relevant expertise. One alluded to public-facing communications, while the other

referred to internal discourse: “You can lead with science, but communication is equally important; bringing the community with you” and “Unless it [scientific evidence] comes through a science communicator who can put it in words that the people around the table find palatable and can ask questions about, then it’s not of any value.”

Financial constraints were raised by nearly all respondents as a probable barrier to instituting departmental science advisors in local government. However, only two appeared to rule out the advisory system on this basis: “Local government hasn’t got the funding to do that. If you have advisors there, basically on call, then presumably you’ve got to pay them retainers – it’s a gravy train”, i.e., advisors could make a lot of money for little work, or “It would be very, very good in theory, but almost unworkable in practice.” Other participants were more constructive: “There’s always been people who say, “We can’t afford another staff member.” Because obviously you have to pay them properly; you can’t pay them a pittance.” This participant drew comparisons between science advisors and sustainability advisors who “twelve years ago” were not employed in local government, but are “commonplace now”. Another participant suspected reassigning existing staff members could reduce costs: “Council already employs people with basically these skills. They [analysts] simply need the support of a national agency [for employment protection].” Two others insisted a local government science advisory system could be instituted with the support of council leadership: “Council is very much influenced by the CEO [chief executive officer] and the mayor. It’s very hard for individual councillors to push something through that might be very, very good, unless they have the backing of at least fifty per cent of the councillors”, or “The CEO makes the final call. There’s an operating budget of probably fifty million dollars, so if a couple of staff members retired from this department or that field, and the CEO brought in a different skill-set over there, that’s viable.”

Finally, participants were asked how local council could demonstrate a similar commitment to evidence-based policy development. As all had expressed at least some reservations about the economic feasibility of the former advisory system, i.e., departmental science advisors, most then considered an expert directory; local scientists registering voluntarily to advise council staff and/or elected officials as and when needed.

Respondents again cited Dunedin’s size and university as advantageous in this respect, e.g., “That would work here because we get lots of voluntary input from very, very skilled people who don’t charge for it.” However, one cautioned that any advisory system would

inevitably be weakened by political biases, of both advisors and those seeking counsel, i.e., “Every three years you’ve got to renew or reaffirm your team, and the personnel of that team changes”, i.e., council staff or elected officials could, from one governmental term to the next, selectively choose from an expert directory so as to further their political agendas. Consistent with commentary on knowledge sharing between local government bodies, this warning raises the question of quality assurance, i.e., how to set and maintain advice standards.

Two participants also made fundraising suggestions for alternative advisory systems (one general and one case-specific): “Perhaps there should be some funding from Local Government New Zealand and central government that says, “There’s a public good in communities having access to scientific expertise.” If central government funds universities to do research, some incentive could exist for researchers working with local council”, or “Any local suicide prevention campaign [and associated advisors] would need to be jointly funded through a working party. It might involve the medical profession, police, maybe search and rescue, council, and the local branches of relevant ministries.”

Reflection

The following describes results from the fourth and final line of interview questioning, which invited councillors to elaborate on their survey responses and personal experience(s) with suicide, and to make closing remarks. The researcher may have first sought to clarify some survey responses with councillors, but these findings featured in aforementioned survey or interview results and need not be repeated here.

Participants were first invited to elaborate on their survey responses. One participant thought it important to justify their inconsistent voting behaviour: “I was quite firm that the road should remain closed. But when I realised that my position wasn’t going to be achievable because the numbers weren’t there to make it happen, I looked for the next best option, rather than dig in and lose completely. That’s what you’ve got to do in politics.” Another sought an assurance that case study framing would be articulated in the results: “I don’t believe – in the whole journey of the John Wilson Ocean Drive saga – that suicide risk management was the biggest issue; I wouldn’t have said it was the main reason for keeping it closed.” This trace of political decision-making was indeed generated through the lens of

science communication in suicide risk management, thus likely underrepresenting other submitters to council and skewing the trace somewhat.

Seven participants then accepted the invitation to elaborate on their personal experience(s) with suicide. However, for the purposes of this case study, experiences not previously mentioned were only relayed here in the context in which they were reported to have influenced decision-making in suicide risk management.

Three participants reflected on personal experiences with suicide where friends or acquaintances had, prior to their deaths, shown no indication of suicidality: “Just a month later they took their own life – spectacular thing with a future ahead of them. No one will ever know what was in their mind”, “And then just bang; gone”, or “Neither showed any signs at all and yet they managed to succeed.” All three reported that these experiences made them more sympathetic during decision-making in suicide risk management, because safety measures at Lawyers Head could have deterred unexpected people like their friends or acquaintances.

Three other participants described their personal experiences with suicide bringing some characteristics of modern society into sharp focus: “We’re not a particularly caring, connected community. It’s very easy to feel isolated, even in a busy city. And we live in a really ugly world; mass murders and shootings. I think some people just give up on life because of it”, “I don’t think people understand how vulnerable some in our community are these days, particularly teenage kids who feel very threatened, are uncertain of getting a job, and when a relationship breaks up, they see no alternative; and older people who are financially poor and lonely – they see no prospect of anything in their future”, or “Where the world sits, where New Zealand sits, where Dunedin sits – it’s not bad, but there are many pressures that some people do not understand; not just money pressures, but whole-life challenges. I feel quite sad because there’s no follow-up support from the health system for it [expressions of suicidality].” All three also reported that these experiences made them more sympathetic during decision-making in suicide risk management, because safety measures at Lawyers Head could have protected people where supports in the community or public health had failed.

When invited to make closing remarks, interviewees considered the current state of Ocean Beach Domain, the hypothetical emergence of other local high-incidence locations for suicide, and/or the purpose of this case study.

Two participants defended current safety measures around Lawyers Head: “John Wilson Ocean Drive used to have a lot of vehicles, but not a huge number of people walking. One of the things I noticed when we started going out there with the kids and our dogs, was that people were talking to each other. If there was somebody intent on walking along to take their life, there’s a good chance a passer-by would have said good morning or good afternoon and stopped to talk; diverted them”, or “Especially when you’ve got the added benefits of a promenade and the way it’s panned out. We haven’t had to change much.”

Despite most participants supporting current safety measures around Lawyers Head, four still described possible domain improvements. One expressed regret over not enhancing amenities there: “We didn’t develop other stuff around it; hire out bikes, or an ice cream stall on sunny days.” However, this person acknowledged the tension between public safety and amenity when considering picnic tables atop the headland: “But you don’t want to encourage people past there. We should probably be planting it out.” Similarly, another participant insisted on strategic landscaping when lamenting “how much resistance there was to putting the fence in”: “I wanted them to plant matagouri bushes all the way along, so people had to push their way through thistles [to reach the cliff edge]”. This person recalled prioritising “telephone installation” at Lawyers Head, too, despite “lacking support for it”. Another participant listed four improvements allegedly recommended to council by the hearings committee [road closure not included]: “Right from the roundabout was to be redeveloped with safer access for pedestrians and cyclists, far better fencing [atop the headland], CCTV [closed-circuit television; video surveillance], and a communication system; a phone that would go straight to, if not police, then security.” The fourth participant, like the former, did not “believe that the fence that’s there is enough”, but deduced, “To protect against someone who wishes to take their life by putting a fence at the head is pretty difficult. You can put a fence there that’ll stop people from falling over accidentally, but if they want to get over, they will.”

Two participants then considered consulting the public once more on access to Ocean Beach Domain; whether reassessing public safety and amenity at JWOD and Lawyers Head would be “opening a can of worms”. One thought current measures would suffice: “One of the salient deciders for people was the fact that almost all the people who suicided there drove up. So, it just seemed, since closing the road worked, why think about anything else?” The other was adamant JWOD “needs to be reopened” and “the whole redevelopment done”. They vowed to “not leave it where it’s at” if on council again.

Also during closing remarks, two participants considered the hypothetical emergence of other local high-incidence locations for suicide; in particular, the reactive versus proactive risk management approaches of local government to these sites. Both agreed that it was only within council's capacity to address situations arising: "You've really got to wait until an event happens, rather than speculate on something that might never happen, because it all comes back to resources", or "That's that other argument: not only is it not local government's role to comprehensively protect against suicide, but more to the point, how would you do that?" Both also referred to the myriad sites across the city (particularly along the coast) with the potential to become high-incidence locations for suicide; reiterating how proactively devising risk management strategies for each would be: a) beyond their jurisdiction; and b) resource-intensive.

Finally, six participants considered the purpose of this case study, half focussing on suicide risk management, and the other half on science communication. Suicide-related closing remarks advocated empathy and collective responsibility: "If one thing can come from your exercise, it's a better understanding by more people. Not necessarily care, but understanding; an acknowledgement that it's a part of life's challenges", "It'll be very worthwhile. And it's about more than just Lawyers Head; it's about how councils respond to and work with their communities: helping families understand what to do, helping schools talk about hardship and support and resilience", or "It'll be interesting to see what you pull out of it. Government has said to us, "You've got to stick to your three waters and roading." But, actually, community issues are the things that council must work with, because we represent people. We can't hire specialist staff for that."

Closing remarks on science communication espoused objectivity and adaptation: "The one thing I hope this study will clarify is the extreme differences between what the media does, what politicians do to remain in politics, and what an expert will do; be that a social lobbyist or a medical expert. We really need that balanced reporting", "In the old days, roadmen had their knowledge in their heads. When they retired – most of them after decades of service – a lot of it disappeared. The biggest challenge was convincing them to move from head to paper, and then from paper systems to digital systems. We have to accept that life has changed, and we just have to change with it", or "Older people can use their subjective experience as a substitute for evidence. Younger people have less

experience, so they've got less to draw upon. And if they've been taught the sciences, they'll probably have some predisposition to critical thinking.”

5.2 Media

5.2.1 Policy

The following describes a representative local news media outlet's practice policy for the reporting of both suicide-related events at Lawyers Head, and relevant risk management policy developments in local government.

The *Otago Daily Times (ODT)* did not have an explicit suicide risk management policy. However, its reporters were expected to cover suicide-related news stories “responsibly” (M. Kirkness, personal communication, June 16, 2015).

The Coroners Act 2006 describes “Restrictions on making public of details of self-inflicted deaths” in section 71 of part 3, “Inquiries into causes and circumstances of death”:

No person may, without a coroner's authority, make public any particular relating to the manner in which a death occurred if – a) the death occurred in New Zealand after the commencement of this section; and b) there is reasonable cause to believe the death was self-inflicted; and c) no inquiry into the death has been completed.

A coroner will open and conduct an inquiry into every death that appears to have been without known cause, or suicide, or unnatural or violent death. The section continues:

If a coroner has found a death to be self-inflicted, no person may, without a coroner's authority or permission, make public a particular of the death other than – a) the name, address and occupation of the person concerned; and b) the fact that the coroner has found the death to be self-inflicted.

Suicide reporting at the *ODT* was usually concise and implicit. These news stories featured most often in a ‘briefs’ column and included at least one of the following euphemisms: “There were no suspicious circumstances”, “Police are not seeking anyone else in relation to the death” or “The death has been referred to the coroner”.

Brevity and subtlety in suicide reporting at the *ODT* could be compromised, however, when news stories were considered to be ‘in the public interest’, i.e., “involving a matter capable of affecting the people at large so that they might be legitimately interested in, or concerned

about, what is going on, or what may happen to them or to others” (NZ Press Council, 2015a).

News stories that fulfilled this criterion may have described the suspected suicides of high-profile individuals, or suicides considered ‘circumstantially newsworthy’ (Hammond, Boshier, McLay, & Mapp, 2014, p. 35), e.g., involving an unusual means of suicide, one in a series or cluster of similar deaths, or associated with criminal behaviour. The Coroners Act does state though that:

The only grounds on which a coroner may under this section authorise the making public of particulars of the death (other than those specified) are that the making public of particulars of that kind is unlikely to be detrimental to public safety.

The *ODT* aimed first to abide by the law when reporting on suicide-related matters (balancing public interest with public safety), but also to follow the New Zealand Press Council’s statement of principles (M. Kirkness, personal communication, June 16, 2015).

The Press Council is an industry self-regulatory body established in 1972 to uphold print media standards and promote free speech in New Zealand (NZ Press Council, 2015a). Its twelve principles do not include public safety or suicide risk management, and freedom of expression is considered paramount. However, the broad principles of accuracy and fairness applied to other principles of privacy, opinion, headlines and photographs could conceivably have guided suicide-related reporting.

Five general complaints were lodged with the Press Council against the *ODT* during the three-year case period. All alleged some inaccuracy or privacy breach, only one was upheld, and none were associated with Lawyers Head (NZ Press Council, 2015b). This does not account for complaints settled outside Press Council; all complainants had to first write to the editor of the publication.

During the background investigation for this case study, few contributors were not critical of the *ODT*’s conduct at one time or another as dissension over Lawyers Head access strengthened. However, unsolicited, only one mentioned even considering lodging a formal complaint.

Two senior *ODT* reporters tasked with covering dissension over Lawyers Head access did not recall receiving any formal training in suicide reporting (D. Loughrey & D. Porteous, personal communication, June 16, 2015). Journalists in New Zealand are not required to

have any specific qualifications, but most enter the profession with a certificate, diploma or degree in journalism or communication studies (Careers NZ, 2017). Suicide reporting did not feature in the curricula of journalism schools across New Zealand during the three-year case period, nor when local news media representatives would have been in training (Hammond *et al.*, 2014). Senior reporters could well have trained outside of New Zealand though, as was the case for the editor-in-chief (du Fresne, 2013).

Despite no memory of formal training, the two senior reporters described basic suicide reporting expectations, e.g., not naming the deceased or the method by which they suicided, and not sensationalising the death. One added that they were bound by law not to. However, unsolicited, neither mentioned receiving guidance from local or central public health authorities on the matter (D. Loughrey & D. Porteous, personal communication, June 16, 2015).

In 1999 the Ministry of Health report, “Suicide and the media – the reporting and portrayal of suicide in the media”, was distributed to media organisations as a resource informing of the effect articles and reports could have on vulnerable people (Ministry of Health, 1999). Five years later the Ministry shared a government-funded study of media response to the resource (Tully & Elsaka, 2004). The study recommended that mental health professionals and Ministry officials work alongside key industry stakeholders to develop a set of protocols with which media organisations could self-regulate. It also recommended the development of a multimedia training kit for journalism schools across New Zealand, modelled on an Australian resource.

In 2011 the Ministry shared an updated resource for the media; this was developed by a media roundtable for the Ministerial Committee on Suicide Prevention, and adopted by the Media Freedom Committee and the Newspaper Publishers’ Association (Roundtable, 2011). When the Law Commission reviewed suicide reporting in traditional and social media three years later, it too recommended engaging with journalism schools; “holding discussions” with training organisations “about including [suicide reporting] education material in the curriculum” (Hammond *et al.*, 2014, p. 10), rather than just providing them with multimedia kits, as had been proposed a decade earlier.

Despite no memory of guidance from local or central public health authorities, the two senior reporters described trying to navigate a reporting ‘grey area’ (D. Loughrey & D. Porteous, personal communication, June 16, 2015). Basic suicide reporting expectations –

however influenced by law, the Press Council or public health authorities – applied to news stories about suicide death. In this case though, reporters were challenged to cover news that was sometimes only loosely suicide-related, but still unavoidably method- and location-specific. To present a balanced interpretation of the local controversy, reporters had to accurately define the problem at Lawyers Head. But, in doing so, they risked drawing unnecessary attention to the headland as a high-incidence location for suicide.

During the background investigation for this case study, two contributors recalled interacting with local news media representatives about suicide-related reporting. The suicide prevention coordinator for Public Health South, a department of the Southern District Health Board, described reaching out to local broadcasters to express concern over commentary stigmatising the mentally ill – radio show hosts had reportedly engaged with an insensitive caller on the topic of Lawyers Head access (J. Black, personal communication, May 27, 2015). Also, SL recalled meeting with the editor-in-chief at the *Otago Daily Times (ODT)* to express concern over Lawyers Head coverage (K. Skegg, personal communication, March 17, 2015). They explained how certain news headlines, framing and images could draw unnecessary attention to the headland as a high-incidence location for suicide; photographs of the headland in particular could be misused by vulnerable members of the community. This account was corroborated by the *ODT* editor-in-chief (M. Kirkness, personal communication, June 16, 2015).

The Law Commission defined the role of news media in 2013 as responding to “the public’s need for ready access to credible and authenticated sources of information about what is happening in their communities and the world at large” (Hammond, Boshier, McLay, & Mapp, 2013, p. 61). Its report included a single reference to “suicide” (p. 25):

In the course of this consultation Coroners, Police, and the Post Primary Teachers’ Association, expressed particular concern about the ways in which the abuse of communication technologies was contributing to truancy, school failure and a range of adolescent problems including depression, self-harm and suicide.

The only two references to “safety” were personal rather than public, regarding publishers over consumers. Furthermore, any references to “risk” considered the news media’s “credibility and legitimacy”, “newly democratised landscape”, “core capabilities” and “diversity”, etc. The report did not propose a role for news media in public safety or suicide risk management.

Perhaps unsurprisingly then, the *ODT* editor-in-chief attested to ultimately determining public interest in suicide-related news stories “on a case-by-case basis” (M. Kirkness, personal communication, June 16, 2015).

5.2.2 Coverage

The following describes a trace of decision-making in suicide risk management at Lawyers Head by local news media representatives. Again, the local news media outlet chosen to represent general coverage of dissension over headland access was the *Otago Daily Times* (*ODT*). Its trace consisted of all relevant articles from 1996 to 2016 catalogued in a spreadsheet by publishing date, day, heading, subheading, author, source(s), article type, page number, newspaper section, article position and word count, image dimensions, size and caption, and suicide-related content.

The *ODT* published 408 articles about Lawyers Head or JWOD over the twenty-year period. The first featured on September 4, 2002, and the last on November 2, 2016, thus generating a coverage window of just over fourteen years (5147 days). An article about the headland or its accessway was published on average around once a fortnight (12.7 days). Articles had a mean length of 375 words and featured most often without an image in the “General” or “Dunedin” sections of the newspaper from pages three to six.

To illustrate the distribution of these articles, scatter plots were generated with time in years along the x-axis, and articles per day up the y-axis. Figure 4 shows three graphs with the coverage window of just over fourteen years (including road closure periods and the case study period in coloured brackets) and from zero to four articles per day over that time. Data points for zero articles per day were omitted, so an absence of data points reflects a coverage lull. Crosses along the timeline represent publicised suicide deaths at Lawyers Head.

Although only four suicide deaths at Lawyers Head appeared in media search results from 1996 to 2016, according to inquest records held at Dunedin Central Police Station, nineteen people suicided at the headland over the twenty-year period. The *ODT* may not have reported other cases, may not have reported the deaths as suspected or confirmed suicides, or may have omitted the location.

The first scatter plot illustrates all media coverage of Lawyers Head and its accessway. Most articles here covered suicide death or risk management (28.4 per cent), or ocean water

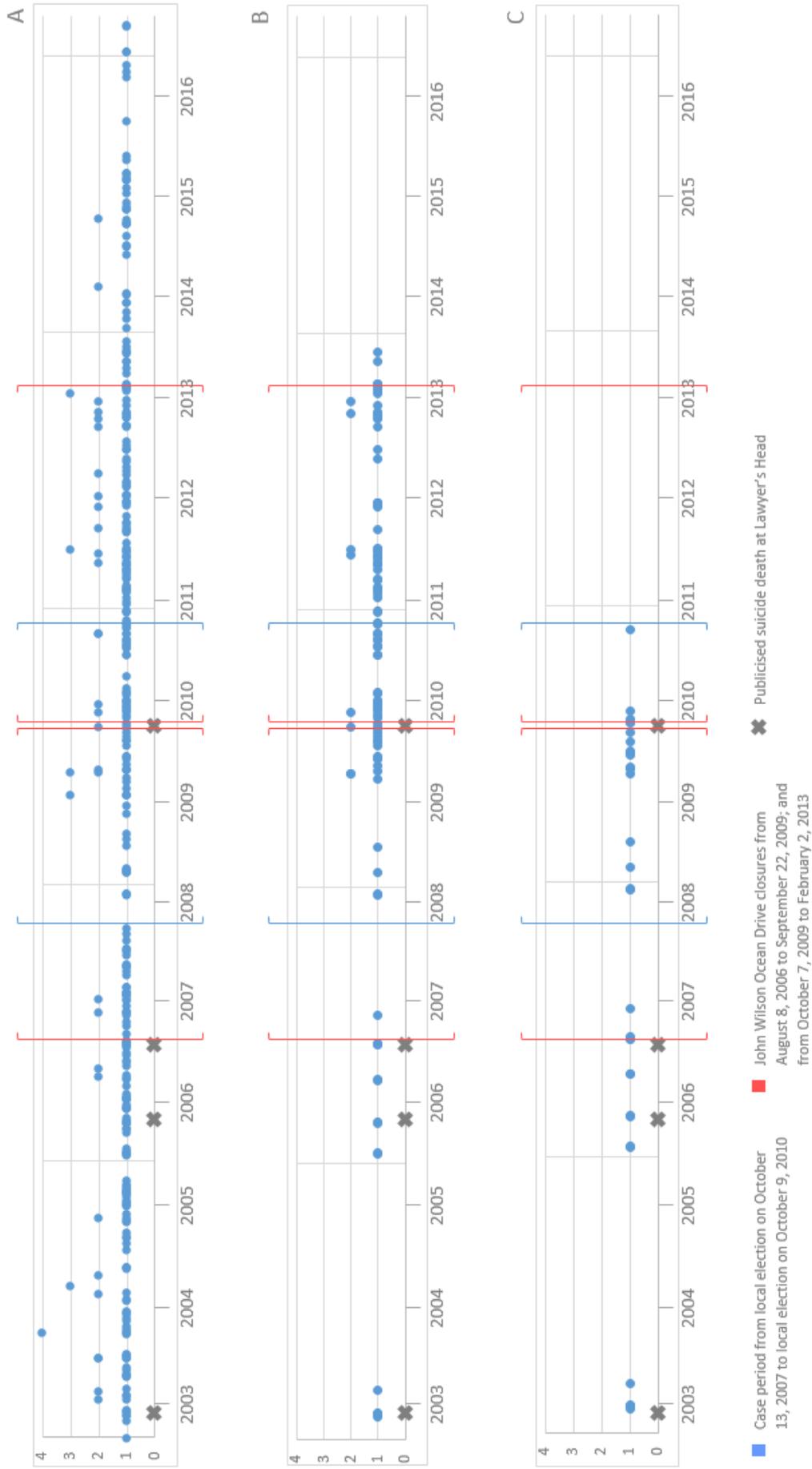


Figure 4 Media coverage of dissension over public access to Lawyers Head from 1996 to 2016. Time in years along the x-axis, and number of *Otago Daily Times* articles per day up the y-axis. **A.** Media coverage of Lawyers Head and its accessibility. **B.** Suicide-related media coverage of Lawyers Head and its accessibility. **C.** Explicit suicide-related media coverage of Lawyers Head and its accessibility.

quality and the outfall upgrade (23.3 per cent). Other news stories featured crime, wildlife, sport or leisure in the area; and coastal erosion coverage strengthened near the end when the outfall upgrade had been completed and persisting ocean drive matters pertained to traffic management rather than public access to the headland.

Articles associated with Lawyers Head were diverse, so the first scatter plot really just illustrates that the area received steady coverage. It was not often that more than one article associated with the headland was published in a single issue of the *ODT*; and, when it was, articles usually appeared in different sections, e.g., local and court, or local and sport, i.e., only occasionally more than one suicide-related.

In the issue that featured the most Lawyers Head content, the local section of the newspaper began with a full-page spread on ocean water quality and the outfall upgrade. Four articles featured here, but not one was suicide-related. Inversely, lulls in Lawyers Head coverage usually corresponded with breaks in the council meeting calendar, e.g., summer holidays, local elections, or while reports were generated for elected officials by council staff. Summer holiday exceptions arose when the KidsCan Santa Run or Bike Wise Mayoral Challenge took place on JWOD.

One in eight Lawyers Head articles appeared on the front page of the newspaper. Front-page news stories largely covered dissension over headland access (37.3%) or ocean water quality and the outfall upgrade (17.6%). Others featured crime, wildlife, sport or leisure in the area; and later coastal erosion. Although images accompanied the vast majority of front-page articles, most captured JWOD or beach scenes; if Lawyers Head featured at all, it was out of focus in the distant background.

Headland photographs featured most often with articles covering ocean water quality and the outfall upgrade. Images accompanying news stories about dissension over Lawyers Head access were usually small headshots of elected officials or council staff quoted in text. However, two large photographs risked drawing unnecessary attention to the headland as a high-incidence location for suicide.

The first appeared in December 2002 under the heading, “Woman dies after fall from Lawyers Head”, as is shown in Figure 5. It spanned the width of the third page, positioned halfway up.



Figure 5 Rescue services carry a woman to the Lion Foundation rescue helicopter after she fell from Lawyers Head last night. Published December 5, 2002 on page 3 of the *Otago Daily Times* under the heading, “Woman dies after fall from Lawyers Head”.

The second image of concern appeared in a full-page spread on March 2006 under the heading, “Police respond to more possible suicide attempts”. It too spanned the page, but instead depicted “Police and the Lion Foundation rescue helicopter search near Lawyers Head after a report of a person seen on the cliff edge before disappearing. This was the second search last week. A woman was lassoed off the cliff-face by search and rescue teams on Tuesday morning.”

An application was lodged with *ODT* publisher Allied Press for electronic forms of both images, but the second was unavailable as “after a long search” it did not appear to have been filed in their system (G. Jenks, personal communication, May 4, 2018). Although both images risked drawing unnecessary attention to the headland, the latter in particular could have been misused by vulnerable members of the community.

One other concerning image was published on the day JWOD reopened in September 2009. It appeared on the fourth page under the heading, “Golfers say fence would ruin hole”, with the caption, “Views under threat... Chisholm Park golf professional uses a 2.7m-high roll of shade cloth to demonstrate what a security fence would do to the views from the course’s No. 9 hole.” Although the article made no explicit reference to suicide, its image in conjunction with its sentiment posed a risk to vulnerable members of the community.

Media coverage of Lawyers Head and its accessway was generally unfavourable, but whether news stories featured suicide or sewage, crime or sport, threaded through the coverage was a communal appreciation for the domain and its potential as a safe and clean shared outdoor space.

The second and third scatter plots in Figure 4 mirror one another early on. The second graph illustrates suicide-related media coverage; almost a third of all Lawyers Head content. Articles here covered suicide deaths at the headland, as well as proposed suicide risk management strategies there, e.g., road closure and fencing. The third graph reveals explicit suicide-related media coverage where the term “suicide” featured; almost a third of all suicide-related news stories, but only 8.1 per cent of all headland coverage. Mirror images indicate that all suicide-related media coverage prior to 2009 was explicit.

SL first engaged with the Community Development Committee of Dunedin City Council in January 2008, which sparked the long-running public debate over Lawyers Head access – and news stories tracking it. Prior (explicit) suicide-related media coverage included three deaths at the headland, one councillor’s call for fencing atop it, a full-page spread with large action shot headed “Police respond to more possible suicide attempts”, and a follow-up article outlining the “new [search and rescue] action plan” for Lawyers Head. Proposed JWOD closure in the interests of public safety should not have blindsided the *ODT* readership.

Suicide-related media coverage ramped up a year after SL’s first council engagement, when the pier for outfall construction was dismantled but vehicle access to Lawyers Head was not restored. Steady suicide-related media coverage continued through 2009, but explicit content ceased shortly after the suicide death at the headland in September. It was also around this time that the primary science communicator met with the *ODT* editor-in-chief. Dissension over Lawyers Head access finally dampened in mid-2013 after motorists returned to JWOD conditionally. Persisting ocean drive matters pertained to traffic management rather than public access to the headland.

Comparisons of implicit and explicit suicide-related content revealed common phrases for each. Besides earlier articles profiling Lawyers Head as a high-incidence location for suicide, e.g., “Police respond to more possible suicide attempts” (March 25, 2006), “New Lawyers Head action plan outlined” (November 18, 2006), “Barrier sought for Lawyers Head” (January 26, 2008), “Road closed while options viewed for Lawyers Head” (April 16, 2008) and “Study backs barriers” (May 28, 2009), most subsequent articles relaying the case for road closure described only “a reduction in suicides” in the area (e.g., Morris, 2009a, p. 5); buried among other cases for road closure based instead on wildlife proliferation and promenade potential. Accordingly, headlines of suicide-related Lawyers

Head articles became focussed on an indistinct “ocean drive”, thus omitting the term “suicide” and the location.

To elaborate on earlier articles profiling Lawyers Head as a high-incidence location for suicide, each described worsening statistics for suicide deaths and related call-outs at the headland, and relayed different expert opinions on the trend. Reports of suicide deaths at the headland almost exclusively described victims “falling”, i.e., with or without a coroner’s verdict, default reporting implied an accidental or unintended death. Two articles from this mix described persons having nonetheless “committed” suicide, mistakenly implying some illegality (see Silverman, 2006, p. 527).

Common phrases among implicit suicide-related articles were those described by senior reporters, e.g., “There were no suspicious circumstances”, “Police are not seeking anyone else in relation to the death” or “The death has been referred to the coroner”. Another common phrase stemmed from the brief reopening of JWOD in September 2009. Articles described the mayor having acted “in the interests of public safety after a death at Lawyers Head” (e.g., Morris, 2009b, p. 1). News stories thereafter ran with the “public safety” line and councillors were quoted using it, too. As for any repeated explanation of the road’s abrupt closure, the phrase “following a death in the area” became the go-to.

Three editorials were published about dissension over Lawyers Head access: “Balancing wants” (April 16, 2009), “Striking a balance” (October 4, 2010) and “Déjà vu all over again” (December 14, 2011). These were high-profile pieces by a reputable senior staffer, if not the editor-in-chief. The first referred to people “committing” suicide, described the case for road closure as “weak”, and opined that “speeding younger drivers and general vandalism” [rather than wildlife proliferation and public safety] were “more truthfully the core problems of public access” (Kirkness, 2009, p. 14). The second referred to “suicidal risks” and described the proposed access compromise [reopening of the road to traffic within restricted hours] as “acceptable” after “an extensive – and healthy – public debate” (Kirkness, 2010, p. 10). The third described the saga as “one of those hyper-local issues that citizens have felt very strongly about” and observed, “At the centre of it all has been the delicate, complex and multi-layered issue of public safety pertaining to Lawyers Head and the access afforded it by an open road” (Kirkness, 2011, p. 16). Regardless of who penned each editorial, suicide-related commentary appeared to soften responsibly over time.

Letters to the editor with a similar sentiment were uncovered on microfilm. Unfortunately, letters to the editor were not stored in the *ODT*'s online archive or the Factiva database, so letters of concern were captured on microfilm by chance and cannot be considered representative. However, one was headed, "Closure of scenic drive embarrassing" (April 8, 2009), and others began with phrases like, "The bureaucrats are at it again" (April 4, 2009), "The shutting of John Wilson Ocean Drive is discrimination" (September 5, 2009) or "This compromise is confused policy by confused politicians" (September 7, 2009). One more under the heading "Not a good Dunedin image" read, "I suggest the number of people that go up there to relax and take in the beautiful view far outweigh the number using the area for other purposes. So I ask the question: do we focus on negative or positive reasons when deciding to remove people's road use choice? Next we'll close the Octagon because some people choose to drink too much there" (Wedlock, 2009, p. 15). A similar letter the next day concluded, "Majority opinion has effectively been ignored" (Miller, 2009, p. 9). All of the above capture the insensitivity of just some of the letters to the editor published during the case period.

"Ocean drive" may just have been a convenient abbreviation for JWOD, and access to it did become the focus for a diverse range of groups across the city. Similarly, broad "public safety" atop Lawyers Head was a concern for councillors as vulnerable members of the community were not the only people walking near the cliffs. Therefore, it was difficult to determine if any trends in journalists' and councillors' public-facing communications were the result of deliberate suicide risk management; and, even so, if journalists and councillors had been influenced more by scientific evidence or fear of reprobation.

6. Discussion

6.1 Implications

Results supported an essential role for scientific evidence in suicide risk management policy development by councillors and journalists. The primary science communicator fundamentally invited councillors and journalists to accept some responsibility for suicide risk management. This challenge was three-fold for each group, and consistent with an analysis of mental health policy development in Wisconsin in the late '90s (Jacobson, 2003): seeking to foster a consensus on the "problem level" (the individual, system or

society), “solution approach” (legislative reform or system transformation) and “philosophy of change” (paternalism tolerance).

Inadvertent science communicators from local public health and emergency services presented councillors with evidence supporting a reputation for Lawyers Head as a high-incidence location for suicide. A local news media outlet reported these statistics. Councillors, journalists and the community were thus able to establish a shared problem definition: suicide at Lawyers Head.

Broad consensus on the problem level was never struck. Some letters to the editor in a local newspaper, and at least one caller on a local radio show, revealed a subset of the community who believed that responsibility for the problem of suicide at Lawyers Head lay with the individuals concerned. When councillors first considered the role of local government – suicide risk management falling outside its remit – local mental health services were called into question, which revealed a subset of council (and by extension the community) who believed instead that responsibility for the problem of suicide at the headland lay with the public health system.

The primary science communicator invited councillors to consider one solution with a location-specific evidence base: closure of the single road to Lawyers Head to vehicles. A local news media outlet reported relevant findings. Councillors, journalists and the community (henceforth referred to as stakeholders) were thus presented with an opportunity to manage suicide risk at the headland through a reformatory rather than transformational approach, and regulatory as opposed to legislative.

The role of scientific evidence in the first wave of this public debate was weakened by perceived limitations to the studies referenced and the solution proposed. Some stakeholders were dissatisfied by the length of time over which evidence was gathered in both site-specific and comparable studies. Some stakeholders did not support the proposed solution because it was not failsafe or would not prevent method substitution. The weight of these perceived limitations varied according to the personal trade-offs each stakeholder was confronted by; greater emphasis on limitations among those for whom the proposal was less tolerable. Confirmation bias, a “ubiquitous phenomenon”, would suggest instinctive tolerance levels drove perceptions of limitations, rather than the other way round (Nickerson, 1998).

It was reasonable for these limitations to feature in public debate. However, emphasis of them revealed a common misconception among stakeholders that robust scientific evidence delivers certainty. This challenged the perceived authority of the primary science communicator before council, as was consistent with a study of relationships between uncertainty and authority in climate change science and policy (Shackley & Wynne, 1996).

The precautionary principle suggests that where threats with serious and potentially irreversible consequences exist, cost-effective risk management strategies be sought without postponement, even if risk is uncertain (UN, 1992). Although founded in environmental risk management, councillors confronted by the problem of suicide at Lawyers Head were expected to exercise the same precaution. Therefore, despite any uncertainty among stakeholders about the magnitude of the problem, or the effectiveness of proposed solutions, councillors had to promptly manage headland risk in the interest of public safety. Difficulties arose, however, because councillors' individual cost-benefit analyses of proposed solutions returned different definitions of "cost-effective".

The primary science communicator may have invited councillors to consider one solution with a location-specific evidence base. However, road closure was presented as just one way of restricting access to means of suicide. Therefore, public debate naturally shifted to consider barriers atop the headland, too. Councillors considered a range of fencing options, so evidence supporting this form of means restriction varied accordingly.

The role of scientific evidence in the second wave of this public debate was again weakened by perceived limitations to the studies referenced and the solutions proposed. Some stakeholders were dissatisfied by the absence of any site-specific evidence in support of proposed solutions. Some stakeholders did not support proposed solutions because they were not failsafe or would not prevent method substitution. As before: the weight of perceived limitations varied according to each stakeholder's personal trade-offs (likely the result of confirmation bias), emphasis of limitations in the public debate revealed a common misconception among stakeholders that robust scientific evidence delivers certainty, this undermined the perceived authority of the primary science communicator but councillors were expected to exercise precaution nonetheless, and it was settling on "cost-effective" risk management strategies that proved limiting.

Had councillors been privy to recommendations from a systematic review of interventions to reduce suicides at 'hotspots' (Cox *et al.*, 2013), they might have resolved to restrict

access to means, encourage help-seeking increasing the likelihood of intervention by a third party, and provide guidance on responsible media reporting of suicide. However, this underestimates the power of councillors' instinctive tolerance levels, and that of their constituents. The compromise councillors struck reflected the precautionary approach with a conservative definition of "cost-effective"; some risk tolerance alongside a commitment to ongoing surveillance of the area.

After publicly inviting councillors to consider one form of means restriction, the primary science communicator invited journalists to consider another: moderating the reporting of both suicide-related events at Lawyers Head, and risk management policy developments in local government. This proposal was not made public, so in this instance the opportunity to manage suicide risk was journalists' alone.

The role of scientific evidence in this decision-making process was also weakened by perceived limitations to the studies referenced and the solutions proposed. Site- and context-specific evidence supporting proposed failsafe solutions might have been more compelling for journalists. However, the weight of these perceived limitations was likely influenced by their existing press freedom beliefs; preferring to let market forces rather than health professionals dictate what was in the public interest. Journalists serving in 'the protection of the public good' like councillors were expected to exercise precaution, although as employees of a commercial outfit their definitions of "cost-effective" risk management strategies were even more conservative.

With evidence, the primary science communicator sought to foster a consensus among councillors and journalists, respectively, on the problem level, solution approach, and philosophy of change. The whole community appeared to agree that suicide at Lawyers Head was a problem, and although broad consensus on the problem level was never struck, risk management strategies by councillors and journalists indicated that each group assigned at least some responsibility for the problem to society; public access and public interest eventually compromised (albeit only conservatively) for a vulnerable few. As community leaders, these groups must also have negotiated shared philosophies of change – in this context at least, because individual political ideologies were unlikely to have wavered (Hibbing, Smith, & Alford, 2014).

In the third lecture of political philosopher Michael Sandel's popular Harvard University course, *Justice: What's the Right Thing to Do?*, students are introduced to the concept of

utilitarianism or “the greatest good for the greatest number” and upon which modern-day “cost-benefit analysis” is based. They are challenged to “put a price tag on life” and confront objections to utilitarianism like, “Is it fair to give more weight to the values of a majority, even when the values of the majority may be ignoble or inhumane?”

Suicide risk management at Lawyers Head would suggest that, when confronted by the same moral quandary, councillors and journalists eventually decided not. However, the responsiveness of both groups to science communicators’ advice improved markedly following the publicised suicide death at Lawyers Head just days after the reopening of JWOD in September 2009. This posed questions around the role of scientific evidence in decision-making processes that are private rather than public (as was the case for journalists initially; acknowledging fears of drawing unnecessary attention to the headland), and the risk tolerance of community leaders.

Results also supported fulfilment of the optimal utility of scientific evidence in suicide risk management policy development by councillors and journalists. The utility of science in policy in this case was assessed on the basis of basic advertising principles, by input with respect to output, i.e., how well the primary science communicator was able to characterise the audience, anticipate audience comprehension and integration, and gather and present scientific evidence (and themselves) accordingly.

Although inadvertent science communicators from local public health and emergency services would likely have considered themselves ‘science arbiters’, serving only as non-partisan resources for decision-makers (Pielke, 2007), they were still stewards of knowledge; capable of marketing scientific evidence so as to fulfil its optimal utility.

If science communicators had sought to characterise their audience, they might have discovered that educated guesses could be made about councillors’ attitudes towards science based on certain demographic characteristics. No pattern was observed between councillors’ religion and their attitudes towards science, as would have been consistent with findings from an American public acceptance of evolution study (Miller *et al.*, 2006). However, a pattern was observed between councillors’ level of education and their attitudes towards science, in keeping with a report prepared for the Ministry of Business, Innovation and Employment on New Zealanders’ attitudes (Nielsen, 2014). A pattern was also observed between councillors’ gender and their attitudes towards science, although it contradicted findings from a study of gender differences in students’ experiences, interests,

and attitudes towards science and scientists (Jones, Howe, & Rua, 2000); significantly more men than women reporting that science was difficult to understand.

Audience characterisation attempts might have revealed that educated guesses could be made about councillors' attitudes towards suicide, too, on the basis of certain demographic characteristics. Due to poor ethnic diversity on council, suicide acceptability could not be analysed on this basis, as it was in two studies abroad: one among African- and White American adults (Neeleman *et al.*, 1998), and the other with college students across major ethnic and religious groups in Malaysia (Foo *et al.*, 2014). Both concluded that ethnic minorities with relatively high levels of orthodox religious beliefs were most likely to reject the notion of suicide. However, with religion influencing attitudes towards science less in New Zealand than in America, perhaps the orthodox religious beliefs of ethnic minorities here have a lesser influence on attitudes towards suicide as well – elevated suicide rates among Māori and Pacific peoples in New Zealand would suggest so (Ministry of Health, 2013).

Furthermore, educated guesses about councillors' attitudes towards suicide might have been made on the basis of their personal experience with suicide. An American study of school-based suicide awareness programmes revealed that personal experience with a peer who had attempted suicide sensitised the student, increasing the likelihood their suicide knowledge would improve (pattern stronger among girls) (Overholser *et al.*, 1989). By contrast, an Australian study of teachers' suicide-related knowledge and attitudes revealed that public and private school teachers and clergy serving as a first line of assistance for distressed young people “did not differ significantly in terms of knowing someone nor of relationship to that person” (Leane & Shute, 1998, p. 169). No pattern was observed between councillors' personal experience with suicide and their attitudes towards it; and one councillor took offence, claiming these survey questions implied that a lack of personal experience with suicide (individual or otherwise) lessened their concern for the interests of the suicidal.

Audience characterisation aside, science communicators might also have considered how they themselves were perceived. All councillors considered inadvertent science communicators from local public health and emergency services credible and trustworthy; one even objected to these survey questions, saying they found it “insulting” to the primary science communicator given their seniority. Factors influencing these judgements were

consistent with those identified by Renn and Levine (1991), i.e., credibility resulting from perceptions of expertise and transparency (in this case: professionalism, clarity, objectivity, an academic track record and experience in the field); and trust developing out of perceived credibility, but also objectivity, fairness, consistency, and good will (in this case: objectivity and expertise). Outliers for perceptions of trust included proactivity, i.e., both science communicators volunteering their services; and the primary science communicator's poise, attire and eloquence. Science communicators were able to effectively convey suicide risk at Lawyers Head. If Renn and Levine's hypotheses serve, their credibility and trustworthiness probably had something to do with it.

There was some criticism among councillors of the primary science communicator presenting to the Community Development Committee alone; one described SL as "under-supported" and would have preferred they submit to council with the backing of a national body, e.g., the Royal Australian and New Zealand College of Psychiatrists, or the Mental Health Foundation of New Zealand. As the primary science communicator was not formally surveyed, it was unclear if they did not approach such bodies, or did and failed to secure their support. If councillors perceived the latter, SL's credibility could have taken a hit.

The primary science communicator obviously did eventually receive the support of a local emergency services representative – the senior police officer with headland-specific land and marine search and rescue expertise. It was interesting to note, however, that councillors' takes on the two science communicators' attitudes towards suicide risk management revealed greater criticism of one than another. At extremes, the police officer was championed as a selfless workhorse, and the senior lecturer was denigrated as a self-interested academic. These perceptions were consistent with the Kiwi identity, i.e., "We don't like tall poppies, but we're resilient" (Alexander, 2005, para. 2). The senior lecturer represented a tall poppy, while the police officer represented resilience. In the interests of anonymity, how gender may also have played into these perceptions cannot be entertained here, but would be worth considering in future studies of a similar tack.

Councillors and journalists encountered alternative sources of relevant scientific information throughout decision-making on risk management at Lawyers Head. The 'input with respect to output' assessment model could not feasibly have been applied to every one of these alternative sources. Therefore, the role of science in policy in these instances was gauged anecdotally. Councillors' survey and interview responses suggested that additional

scientific evidence from council staff, the Internet, trusted acquaintances from relevant fields, and journal articles could strengthen their confidence in some cases, but overwhelm them in others; this was either due to the sheer volume of information available (and an inability to filter out the work of maverick scientists), or to the materials' sensitive nature.

The optimal utility of scientific evidence in suicide risk management policy development by councillors and journalists was fulfilled in this case. Not, however, because the primary science communicator was able to characterise audiences, anticipate audience comprehension and integration, and gather and present scientific evidence (and themselves) accordingly. But, instead, because the limiting factor in decision-making by both groups was determining cost-effectiveness in a precautionary approach – ultimately a values-based judgement the science communicator could not have influenced. Even if the primary science communicator had been acting as an 'issue advocate' rather than a 'science arbiter' (weighing in on options, as well as serving as a resource for decision-makers), councillors' and journalists' cost-benefit analyses would not likely have changed. Implicit in the title of 'issue advocate' is the potential for greater influence. However, councillors and journalists attested to having greater respect for science communicators in this case because they were not like "lobbyists" and merely wished to draw community leaders' attention to a problem and present them with some options.

Furthermore, perceived limitations to different studies referenced and solutions proposed (which weakened the role of science in policy) could not have been remedied through enhanced science communication, e.g., site-specific or comparable evidence could not have been generated where previously there was none (without consent and resourcing to implement and monitor a proposed solution); and science communicators could not have done any more than seek to 'manage expectations' where proposed solutions involved uncertainty. Stakeholder dissatisfaction with evidence gaps and uncertainty echoed major challenges in science communication and did not reflect poorly on the efforts of inadvertent science communicators here.

Audience characterisation and risk communication assessments above were conducted in isolation, i.e., without knowledge of different science communicators' intents. Therefore, it was indeterminable if even the primary science communicator alone deliberately behaved in a way they believed councillors and journalists would find credible or trustworthy. Likewise, it was indeterminable if the primary science communicator characterised local

government and media audiences and devised communication plans accordingly (even if only loosely, e.g., meeting with newspaper editor).

Science communicators need only have skimmed the *Otago Daily Times* on weekends to learn about councillors (that is if they did not at least know of them already – Dunedin is a small town), so perhaps some informal audience characterisation could have been assumed. Similarly, science communicators were community leaders who may have sought to behave in ways councillors and journalists would find credible and trustworthy, but almost certainly not in a deliberate attempt to convey suicide risk at Lawyers Head in particular.

When comparing science in policy utility measures, regional media practice policies for the reporting of suicide-related events at Lawyers Head and risk management policy developments in local government, only appeared to be influenced more by scientific evidence than local government service policies regulating public access to the headland, following a suicide death at Lawyers Head just days after the reopening of JWOD in September 2009. There was not strong evidence to support hypotheses that research evidence influenced practice policies more than service policies (commercial interests for the former likely skewed this), nor that research evidence influenced regional policy more than local policy (again, commercial interests for the former likely skewed this).

If the optimal utility of scientific evidence in risk management policy development had not been realised in this case, a set of recommendations was to be drawn up for the primary science communicator and/or those fulfilling advisory roles in local government and the media. As could have been inferred from the above, fulfilment of the optimal utility of scientific evidence in policy development was heavily influenced by the management of stakeholder expectations, clearly defining what scientific evidence could (and could not) bring to decision-making. In cases where stakeholders' expectations had not been met, e.g., evidence gaps and uncertainty, the authority of science communicators was undermined and general impressions of science sullied.

Improving stakeholder expectation management represented a major challenge for the science communication discipline and was unlikely to be accomplished by adapting science advisory systems from central government in local government and media settings. Therefore, regardless of the feasibility of such adaptations, the type of unmet need among councillors and journalists when seeking to utilise science in policy did not warrant them. There appeared to be some room for improvement among inadvertent science

communicators on council staff. However, this had more to do with clarifying employment expectations than improving science communication skills; it was assumed that one would necessarily follow the other.

Finally, the optimal utility of scientific evidence in risk management policy development here was only fulfilled because public servants generously volunteered their time and effort. Temporary road closure in the first place was only prompted by coincidence, but the primary science communicator in particular took an opportunity and instigated a meaningful public conversation the local community might not otherwise have had. This posed questions about the generally reactive nature of community-based suicide risk management (probably the only feasible approach where high-incidence locations for suicide were concerned, especially in urban coastal areas); and, as canvassed previously, the ‘problem level’ risk management at high-incidence locations for suicide struck.

Councillors’ perceptions of science communicators’ attitudes towards suicide risk management revealed an expectation that “of course” local public health and emergency service representatives would prioritise public safety and harm reduction in relevant decision-making. Because these public servants took the Hippocratic Oath or the Oath of Allegiance (Police Oath), perhaps councillors considered science communicators bound by those. But sadly implicit in this expectation was some councillors’ understanding that members of a community do not all have moral and ethical duties to one another, regardless of the oath(s) they might take – perhaps another values-based judgement science communicators could not possibly have influenced.

6.2 Limitations

Study participation was limited by broad objectives and methods. Former councillors who chose not to participate cited workload and/or perceived redundancy (an understanding that their views would be expressed by other participants); and the primary science communicator opted not be interviewed directly over concerns about personal and location anonymity. However, prospective study participants may have been deterred by other factors, too.

Participants reflecting on past suicide deaths at Lawyers Head, for example, or considering the possibility of future such events, may have experienced different negative emotions, e.g., sadness, guilt, anger, and/or frustration. Similarly, participants reflecting on personal

experience with suicide may have become distressed. Therefore, an external moderator with suicide and mental health expertise was consulted during survey development to preemptively screen for features that may have put study participants at heightened risk of distress. The researcher accepted a duty of care for all contributors and made support services available to them to account for any residual risk. Contact was established with two trusted local counselling service providers and alternative arrangements could have been made if a participant preferred to engage with a different counselling service. This duty of care did not expire the moment study participants submitted; ongoing support was available to them should any stress, harm or related concerns have arisen.

Prospective study participants, like the primary science communicator, may also have been deterred by threats to personal anonymity. These threats existed because of the small case study sample population. Councillors were public figures when dissension over public access to Lawyers Head sparked (and may still have been on council when approached about this study), so members of the community might recall positions held by different councillors as described in results. Case study actors were not referenced by name or gender throughout the write-up, whether formal participants or not. Attempts to control absolutely for anonymity threats, however, would have been resource-intensive and would not ultimately have prevented speculation. It was therefore imperative to inform participants of the risk to their anonymity prior to obtaining signed consents. The researcher also made recommendations to participants about how to respond to media enquiries in the unlikely event a journalist accessed the case study and sought to report on it.

Prospective study participants, like the primary science communicator, may also have been deterred by threats to location anonymity. Past community involvement in debates over public access to Lawyers Head suggested significant potential local interest in this case study. However, given the sensitive nature of the subject matter, the researcher anticipated that any media reports associated with study findings would be accurate, considerate and not sensational. General consensus among study contributors was that suicide risk management at Lawyers Head had helped to redefine the domain as a safe and clean shared outdoor space for the local community; the headland's reputation as a suicide 'hotspot' appeared to have waned along with suicide incidence. Nonetheless, the researcher was cautious of the publishing risks posed (e.g., introducing unknowing members of the public to an outdated headland reputation, or triggering re-litigation of public access rights) and the location title was omitted from the case study title and abstract.

Upon case study publication, the researcher would not initiate contact with the media; and if approached would comment only provided that journalists complied with Ministry of Health suicide reporting guidelines (Roundtable, 2011); any study participants approached by the media were instructed to do the same. Controlling access to the study and handling any media attention with the utmost care was of great importance to the researcher.

Study participation limitations aside, formal and informal data collection among councillors and journalists was also limited, but by recall bias. The survey for councillors was heavily detailed in parts, and most questions related to events that occurred five to eight years earlier. Participants were permitted to access personal records to assist their recall; and should they have been unable to remember an event, they could indicate so. Their apprehension over recall bias nonetheless resulted in a survey data shortage. Fortunately, it posed greater threats to some responses than others. For example, council meeting attendance and voting on administrative matters, which in some instances could be checked against council records, may have been reported with variable accuracy, but councillors held memorable positions on major issues (of greatest significance to study objectives). A related limitation then was whether councillors choose to report accurately given what they remembered; some positions held on major issues were retrospectively unflattering.

Qualitative data analysis of survey and interview responses, and media coverage, was limited by subjective human biases. Descriptions of results and their implications probably were as well. Strict coding rules and procedures were devised to standardise analyses, and regular attempts to challenge basic assumptions were made, but the researcher's unique predispositions inevitably influenced early sampling right through to findings, e.g., as a university student empathetic towards the well-intentioned inadvertent primary science communicator who appeared to have stirred up more public interest in Lawyers Head than they intended to.

Study participation might have been limited by broad objectives and methods, but so too was study credibility. Firstly, the role of science in policy on the basis of input with respect to output could never have been reliably determined without a detailed personal account of the primary science communicator's decision-making. Secondly, the roles of science in policy in local government and the media could never have been reliably compared when interpretations of these roles were based on very different data collection methods. Study

objectives were drawn assuming broader participation, and methods had to be adjusted as prospective study participants deliberated.

Study strength was also limited by a changing media landscape. It was difficult to comprehensively trace decision-making by journalists because letters to the editor did not feature in online databases, and some online comment sections had long been withdrawn by the time the case study commenced. Therefore, only articles in print were analysed, despite letters to the editor and online comment sections posing a greater risk to vulnerable readers. Many newspapers and online media companies have begun disabling comment sections because of widespread abuse and obscenity (Finley, 2015). The *Otago Daily Times* website required users to create an account and agree to terms of use and privacy policies before commenting. Terms of use included: “You must not use this website directly or indirectly to post or transmit any material unlawfully, or which is obscene, indecent, uses offensive language, defames, abuses, harasses, stalks, threatens, menaces, offends or restricts any person.” Web content curators were nonetheless forced to close comment sections for some Lawyers Head articles.

Senior journalists had greater control over letters to the editor than online comment sections, but that did not stop insensitive content hitting the press. Parallels could be drawn between letters to the editor and callers on radio: the press seeking to deliver ‘balanced’ news stories, but at times exhibiting disregard for vulnerable consumers. Stronger analyses of science in risk management policy by the media must account for this changing landscape.

6.3 Advancement

The World Health Organisation has set out a basic framework for suicide prevention strategies, including recommendations for formulating and evaluating relevant programmes (Yip & Law, 2010). Authors spotlighted “partnership and cooperation” (p. vi) in community-based suicide prevention, saying “suicide is everyone’s business” (p. vii), which was consistent with a more recent paper by a New Zealand researcher calling on youth suicide prevention to be depoliticised (Shahtahmasebi, 2013): “A new approach must redefine the suicide prevention problem holistically so that the whole community may share ownership of the problem” (p. 3).

This case study demonstrated the potential for science communicators of identifying influential actors like councillors and journalists in local settings, and inviting them as community leaders to consider different evidence-based risk management strategies. Although in this scenario the emergence of a high-incidence location for suicide prompted action by a local health professional, proactive risk management could involve similar collaborative networks; restricting access to physical and cognitive means of suicide, but also exploring early intervention through mental health education and training. Community leaders need not give up their day jobs, but with guidance each day they can set a strong example in redefining the “suicide prevention problem” (with positive framing where appropriate).

Other communities may benefit from findings here, particularly those confronted by the emergence of a high-incidence location for suicide. The case highlighted in the present investigation could also serve as a pilot for future studies examining community responses to the emergence of high-incidence locations for suicide or related cluster events. Meta-analyses of different community responses could then generate a more robust set of recommendations for partnership and cooperation in community-based suicide prevention.

Attempts to develop greater understanding of science in policy must be context-specific, because, as has been described, roles vary markedly on the basis of policy type and setting, and over time as public attitudes shift. Whatever the limitations to study design here, researchers who pursue similar lines of inquiry can be confident the challenge of managing stakeholder expectations will feature. Realistically, this case study will make a greater contribution to local community-based suicide prevention efforts than it might to the broad fields of science communication and political science.

7. References

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