

1 Background

1.1 Local government's role in health planning

Within Australia, local government's (LG) role in health planning has evolved significantly over the past hundred years; from the health protective role of environmental health officers, through to education and promotion that is based on individual or issue-specific behaviour change approaches from the 1980s and 90s (DiClemente *et al.*, 2009). Since the Ottawa Charter (WHO, 1986), there has been a growing understanding that governments at all levels have a role to play in addressing the very structures of the societies in which we are born, grow, work, live and age because they are where the upstream 'causes of the causes' of health occur (Rose, 1992, Wilkinson and Marmot, 2003, Marmot, 2005, CSDH, 2008). The ubiquitous nature of the social determinants of health (SDH) has been demonstrated by Dahlgren and Whitehead (1991), while more recently, Lowe *et al.* (2015) showed how they manifest through different aspects of civic life or *policy domains*. The contribution of fundamental social structures to personal experiences of health can seem remote, but the literature shows they are in fact pervasive.

The 2008 Commission on Social Determinants of Health (CSDH, 2008) made clear statements acknowledging LG unique potential to address health via social determinants. This includes through the equitable provision of social infrastructure; the facilities, structures and services that make a community more than just a collection of people (Harris and Wills, 1997, Casey, 2005, Thomas *et al.*, 2009, Marmot and Bell, 2012). The CSDH's statement has contributed to increased expectations for local government to go beyond their popularly conceived remit of 'roads rates and rubbish' and to address underlying determinants of health (Dollery *et al.*, 2006).

In Victoria, Australia, there are 79 LGs operating at an equal third tier, i.e. below state and federal levels. In contrast to many other jurisdictions, Victorian LGs' role to address the SDH is legislated through the State's *Public Health and Wellbeing Act 2008* (Vic), the development of which was informed by *Environments for Health*, the State government's framework for municipal public health planning (DHS, 2001, de Leeuw *et al.*, 2006). The Act requires each of Victoria's 79 LGs to prepare a Municipal Public Health and Wellbeing Plan (MPHWP) every four years, in consultation with their community. Plans must be evidence-based; "include an examination of data about health status and health determinants", and must "identify goals and strategies based on available evidence for creating a local community in which people can achieve maximum health and wellbeing" (S.26(2)(a)&(b)).

1.2 Evidence typology

Evidence is not consistently defined in the literature (Oliver *et al.*, 2014), but is generally regarded as knowledge that describes a true state. Because research practices create varying degrees of certainty

35 as to what ‘the truth’ might be, the quality of health evidence is often judged against the *hierarchy of evidence* (Greenhalgh, 1997, NHMRC, 1999) which gives high regard to systematic reviews and RCTs, and less to cross sectional surveys and reports of individual cases. In public health however, and particularly due to the contested or indirect role of social determinants on health, other types of knowledge are also often used to guide interventions. Therefore, consistent with the NCCMT (2012), ‘evidence’ in this field is often broadened to include case studies, community consultation and even
40 political advice, with the caveat that whatever the form, it should be appropriate for the task (Petticrew and Roberts, 2003). In this context therefore, and based on Oxman *et al.* (2009), *evidence-informed public health policymaking* is defined as that which systematically and transparently accesses and appraises evidence, from a broad range of sources, as an input into the policymaking process.

45 Consistent with the idea that evidence can take a range of forms, it can be characterised using typologies; that is, a system of classification according to its characteristics. The choice of typology depends on the characteristics of the evidence that need to be communicated. For example, if plans need to be assessed for how well they fulfil the requirement to be evidence-based, then categorising the quality (e.g. according to evidence hierarchies) or trustworthiness of the evidence therein might be
50 valuable. In preparing for new public health legislation in Western Australia (WA), Stoneham and Dodds (2014) surveyed LG officers from five local government areas to determine the sources of evidence accessed during the development of public health plans. The most frequently used sources were ‘soft’ (grey literature, professional reflections and community input) as opposed to ‘hard’, raising concerns about the effectiveness of actions subsequently implemented.

55 Alternatively, characterising evidence by the issue it describes can help LG to understand how well the plan covers issues of significance as well as any potential research gaps. It also sheds light on the issues that LG has ‘on its radar’ as important for health and wellbeing, and can reveal the extent to which LG is adopting a social determinants approach to health. For example, a recent analysis of the actions included in MPHWP’s showed that councils are working beyond the traditional protection and
60 promotion areas of public health and are making strong forays into policy domains known to determine health (Browne *et al.*, 2015). Ideally such actions are supported by evidence from the relevant policy areas, including transport, urban planning, community safety and employment.

Finally, and in addition to the classifications described above, evidence can be characterised by the role it plays to inform the plan (Petticrew and Roberts, 2003). Using this classification, evidence
65 might ‘set the scene’ by describing regional or local epidemiology, or be action-specific, that is, evidence that directly support actions intended to intervene or ‘break the links’ between factors in the aetiology of poor health and wellbeing. Finally, evidence might provide an evaluation of such interventions (Armstrong *et al.*, 2014a).

In Victoria there are numerous guides and briefings on the development of MPHWP (VicHealth, 2002, DOH, 2009, Haby and Bowen, 2010, DOH, 2012, DOH, 2013b, DOH, 2013a, MAV, undated) and many of these provide links to evidence sources. A review of these documents shows that there is some guidance on how to use evidence. However, consistent with the literature, there is limited typological information that might assist LG to consider the characteristics of evidence, and its suitability for different tasks within the development of the plan (Brownson *et al.*, 2009). Only Haby and Bowen (2010) explicitly distinguish the importance of “intervention-level research evidence” (p.7)

For LG, the challenge of identifying the best evidence to guide the development of MPHWP is compounded by additional, day-to-day challenges. For example, while the internet has vastly increased access to information, determining the relevance and reliability of evidence can be challenging for LG health practitioners who might have expertise in only one or two areas of public health, while a social determinants of health perspective requires a multi-sector approach (Marmot, 2005, Kickbusch, 2010b).

1.3 Aims and objectives

This research was guided by the question: *What types and sources of evidence are used to inform Victorian LG MPHWP?*. Given the increasingly important role played by municipal-level planning to address public health and wellbeing across Australia and the legislated requirement of Victorian local government to consult and to use evidence to prepare their MPHWP, it is timely to assess the types and sources of evidence used by local government, and the role it plays in policy.

2 Method

MPHWPs for all Victorian (Australia) local councils (n=79) were obtained from council websites or council contacts. Publicly available supporting documents (*Health and Wellbeing profiles, Community Profiles* etc.) were also obtained (n=116 in total). Content analysis that focused at a micro level, provided frequency counts and allowed for quantitative analyses of qualitative data (Ryan and Bernard, 2000) was used to systematically analyse the documents and extract every occurrence of evidence.

The definition of evidence adopted was based on that used by NCCMT (2012); information from another source ‘*which claims an assertion or describes a true state*’. This definition includes information that is not referenced. Next, an evidence typology was used to categorise each occurrence of evidence according to 3 questions: *What is the source of the evidence? What does the evidence describe? and How specific is the evidence?* The following sections describe the rationale and the categories used within each question.

2.1 Q1: SOURCE: What is the source of the evidence?

Every occurrence of evidence in the documents was categorized by its source (where possible) to determine which sources councils find useful for describing the health of its community, health determinants and/or interventions. When no source was cited, the occurrence was categorised as *Unable to determine*.

2.2 Q2: ISSUE: What issue does the evidence describe?

Each occurrence of evidence was also categorized by the issue it described. This provided an overview of the issues that councils deemed important for health and wellbeing in their local area. Semi-inductive categorisation (i.e. categories derived from the data themselves) was used, with the following five parent categories; A) *General / nonspecific*; B) *Demographics* ('who people are'); C) *Epidemiology* ('what people have'); D) *Health behaviours* ('what people do'); and E) *Domains of Public Policy*.

Two of these categories - *Epidemiology* and *Health behaviours* - were coded using further inductive categorisation (see Table 4). The fifth category, *Domains of Public Policy*, was used to capture occurrences of evidence that described civic society's role in health. It was further categorised into 11 domains established by Lowe and colleagues to be determinants of health and well-being (see Table 4 (Lowe *et al.*, 2013, Lowe *et al.*, 2015)). The categories *Land use and urban design* and *Resource Efficiency* were added because evidence on these issues did not fit into those developed by Lowe and colleagues. This resulted in the 'taxonomy' of categories shown in Tables 2 & 4 (Appendix 1). If an occurrence of evidence described more than one issue, it was coded across multiple issues, which resulted in different totals for the three questions.

2.3 Q3: SPECIFICITY: How specific is the evidence?

The evidence in MPHWP can range from very general (e.g. describing broad health trends) to very action-specific (e.g. providing evidence to support a particular action). Determining the specificity of evidence is useful for judging the merit of MPHWP's content, assertions and particularly, rationales actions. To do this, an adapted version of Armstrong, Pettman and Water's (2014a) typology of increasing specificity was used; with the following categories: Type 1 - evidence of a general, regional or global situation, Type 2 - evidence of the municipal situation, Type 3 - evidence for possible solutions, Type 4 - evidence for local solutions with Types 3 & 4 falling into Haby and Bowen's (2010) definition of "intervention-level research evidence".

Two examples of how the codes were applied are shown below:

Example 1: "19.6% of residents consume soft drink on a daily basis" (Ararat MPHWP, p.44)

- 135 Q1 Source: LG Profiles / VicHealth / Victorian Government
Q2 Issue: Nutrition ('Health behaviour' parent category)
Q3 Specificity: Type 2: Local situation

Example 2 *"Promoting safety and safe practices within the community can contribute to increasing the confidence of residents about safety"* (Glen Eira MPHWP, p.29)

- 140 Q1 Source: Victoria Police / Victorian Government
Q2 Issue: Crime & Safety ('Domain of Public Policy' parent category)
Q3 Specificity: Type 3: Possible solution

145 For all three questions, coding subjectivity was reduced with a comprehensive coding guide and flow chart. Coding reliability was increased by reviewing the way that one MPHWP was coded, subsequently revising the guide, and then recoding that MPHWP. Nvivo 10 was used to apply the method to all documents. Once coding was complete, intra-reliability was assessed by the same coder (GB) randomly selecting one of the documents and coding it a second time five months later. Given the high number of categories, a joint-probability of agreement method was used (Dunn, 1989). No variation in the way Q1 was coded was found. For the other two questions, the variation in coding
150 ranged from 0% to 6%, with a mean of 0.6%; a level that was deemed within tolerance. Finally, descriptive analyses were performed on the results using excel.

3 Findings

3.1 Sources of evidence

155 Overall, 11,112 occurrences of evidence were recorded in 116 documents. The source of 26% of these occurrences was unable to be determined. The remaining (≈ 8000) occurrences were drawn from 256 evidence sources that were then sorted into a taxonomy based on type of institution with 11 main categories. Figure 1 shows the 10 most frequently used evidence source categories and Table 1 shows the 10 most frequently cited organisations.

160 **Insert Figure 1 here**

Figure 1: Evidence sources by category.

Table 1: The 10 most frequently cited sources.

Insert Table 1 here

Figure 1 shows that while the ABS, a Commonwealth government agency was the most frequently cited source, State government departments and agencies are highly cited. Indeed Table 1 shows that the 3rd, 4th, 5th, 8th and 10th most frequently cited sources fall into this group. Of interest is the large proportion of internally (i.e. council) sourced evidence and community consultation. Other notable sources are *Community Indicators Victoria* (CIV) (419 occurrences), the most frequently cited academic source, and *.id The Population Experts* (303 occurrences), the most frequently cited private source. Both these sources are specifically geared to providing descriptive (rather than intervention-based) evidence to local government. However while the evidence provided by *.id* is positive, CIV, as a community indicator program, is more normative: it defines what is considered important for health and wellbeing according to its framework, which aligns with a social determinants approach (Levett, 1998, Dluhy and Swartz, 2006, Rydin, 2007).

3.2 What does the evidence describe?

The greatest proportion (46%) of evidence cited in MPHWP described an aspect of the *Domains of public policy* that determine health (Appendix, Table 2). Within this category, the highest frequency (17%) of occurrences was the sub-category *social connectivity, cohesion and democracy* (E.g. ‘The Australian Social Inclusion Board found that although strong social networks, such as family and friends, are an important form of support and assistance, external support services also play an important part’ Yarra City Council, citing ASIB, a former federal agency). The lowest was *Land use and urban design* (1%). Within the *Epidemiology and Health behaviours* categories, the highest frequencies of evidence cited were *Mental health* (18.0%) (e.g. ‘Families reported 'high'/very high' stress levels over past month’ (Bayside City Council citing DEECD evidence)) and *Nutrition* (21%) respectively. A significant proportion (21%) of epidemiological evidence cited was not disease-specific, but described issues such as life expectancy, rate of hospital presentations and disability-adjusted life year data (Appendix 1, table 4).

3.3 How specific is the evidence?

Notably, most of the evidence in MPHWP and their supporting documents described the situation, rather than what might be done to improve health and wellbeing (see Table 3). Further analysis of evidence on interventions (i.e., categories 3 and 4) showed that most evidence on proposed local solutions was council-generated (sourced internally - 38 occurrences), or from the community via consultation (221 occurrences). Examples are “All new developments and/or projects consider access for people with a disability” and “Need more reduce smoking campaigns” respectively. In contrast,

state government sources of evidence on possible solutions were cited only 71 times and academic sources only 17 times. Notably, there was only 1 occurrence of evidence for an intervention sourced from a health promotion non-government organisation (NGO); “A recent workshop held at Council on Food Sensitive Planning and Urban Design (FSPUD), highlighted benefits that a local food coalition could generate.” (Mildura City Council, citing the Heart Foundation).

205 **4 Discussion**

4.1 Evidence sources and evidenced issues

The results show that while MPHWP are evidence-rich, a high percentage (26%) of the evidence is not cited, a finding that is not atypical for grey literature which is often developed in a dynamic policy space and by organisations whose primary activity is not publication. As such, it is not controlled by commercial publishing interests and is often not subject to academic-like standards (Aina, 2000). While grey literature itself is generally regarded as a valuable component of the evidence base, the absence of referencing can call into question the credibility of assessments of health status and actions based on them (Lawrence *et al.*, 2014).

The remaining occurrences of evidence were sourced from a large number of different organisations (n=256), reflecting the breadth of health issues and their determinant policy areas relevant to local government’s health planning role. These sources ranged from academic journals, to Victorian government departments and agencies, professional associations and industry groups, and included privately-owned data brokers. Community consultation was also an important source of evidence (483 occurrences). This is not surprising in Victoria, where the Act requires that MPHWP be developed in consultation with the community. A significant proportion of this community evidence was suggestions for interventions (Type 3 - ‘evidence for possible solutions’, under Question 3). There is debate about the validity of such suggestions (Minkler and Wallerstein, 2011). Although they are often unsubstantiated, they can provide a starting point for LG to undertake further research. In any case, a community that ‘knows itself’ and is actively involved in health planning, including via action research (Minkler, 2000) can also drive an LG to experiment with innovative, ‘bottom-up’ interventions. Even if such interventions are limited in effectiveness, they can nevertheless empower a community, thus indirectly improving health and wellbeing (Barten *et al.*, 2010).

Notably, evidence that describes health behaviours or the incidence of disease did not constitute the greatest proportion of evidence. Rather, the greatest proportion (46%) of evidence used in MPHWP describes areas of civic life that are domains of public policy that play a role in determining health and wellbeing. This demonstrates that Victorian LGs are going beyond traditional demographic,

epidemiological and health behaviour data to describe health via its determinants, with an emphasis on the upstream areas of civic life where the causes of health originate. Such an approach is reflected in the new State Health and Wellbeing Plan (Victorian Government, 2015), where a focus on environments and on place-based approaches is taking on greater importance.

4.2 Evidence for describing or solving problems

Evidence to describe the demographic profile of communities and the health issues they experience was widely used by Victorian LGs. In contrast, evidence describing effective interventions was notably deficient (4% of over 11,000 occurrences of evidence). This confirms Armstrong and colleagues' (2014b) findings that the majority of evidence used in health planning describes situations or problems. While descriptive evidence is useful for assessing the health and wellbeing status of citizens, it has been called 'the tip of an iceberg' in the policy development process (Talbot and Verrinder, 2009, Davern *et al.*, in-press). In isolation it provides no indication of how to reverse negative health trends. In contrast, evidence that supports planned interventions is valuable, if not essential, for ensuring effectiveness of actions, particularly given councils' economic constraints and community expectations. For example, the evidence, '14.4% of adolescents had an eating disorder ... which is significantly higher than the Victorian average ...' (Darebin City Council, citing the *Attitudes to School Survey*) describes a situation, and implies that increasing efforts at promoting health and nutrition literacy would be beneficial. However, this evidence provides no indication of how to achieve this. The same council has 9 actions related to the issue that are intended to encourage healthy eating, including 'Consider social enterprise models for healthy food provision for people who experience food insecurity' and 'Ensure and increase healthy food alternatives into all community events'. While quite possibly developed from officers' experience of successful programs, the effectiveness of these proposed actions is not supported by documented evidence.

The reasons for the dearth of intervention evidence documented in LG plans warrant further research. There are a number of possibilities: First; this evidence, particularly locally relevant evidence, might not exist. Second; it exists but is inaccessible to LG. Third; it might be available and used, but not documented. Each of these possibilities is explored.

A principle challenge in identifying effective interventions is that social determinants do not affect health linearly, but are the result of complex interactions between factors (Butland *et al.*, 2007, Kickbusch, 2010a). Ideally, to effectively understand and address poor health, each stage of the aetiology of a health issue would be illustrated with evidence. This would include describing the magnitude of the problem, who is affected, what the causes are and most importantly, what (if anything) has been shown to be effective (Villanueva *et al.*, 2015). In reality however, the relative influences of social determinants on health are inherently difficult to demonstrate, and thus, it is

inherently difficult to create conclusive evidence for effective interventions (Petticrew *et al.*, 2004, Haby and Bowen, 2010).

270 Even when such evidence exists it may be inaccessible to, or inappropriate for LG. In the health sciences, knowledge on effective interventions comes from a range of sources including ‘natural experiments’ (Petticrew *et al.*, 2005), randomised controlled trials or from multiple studies that demonstrate consistent findings and consider magnitude and direction of associations (Victora *et al.*, 2004). Such methods are often too reductionist for interrogating the social determinants of health issues, and so in isolation their findings are not appropriate as evidence for LGs’ actions. When it is relevant, this sort of evidence is often only available via journal subscriptions not held by LG
275 (Moodie, 2009, Hurley and Taylor, 2014, Stoneham and Dodds, 2014). Moreover, even if accessible, systematically reviewing all such evidence related to the myriad of health issues that LG is charged with addressing, is beyond the capacity of even well-resourced councils. In view of the challenges, councils themselves should not be underestimated for their importance in creating relevant evidence. Many councils’ health programs have the characteristics of natural experiments, or at least case
280 studies, and so reliable program evaluation methods, that enable a record of ‘what works’ to be developed, should be a priority (Sanderson, 2002).

In terms of making evidence more accessible, leading Australian health promotion NGOs (E.g. National Heart Foundation Australia, Cancer Council Australia & Diabetes Australia) are taking on a greater role in translating evidence for use in policy development, via submissions to State and federal
285 Policy and via development of resources about ‘what works’ in health promotion (Clark, 1992). Many such resources, such as *Healthy by Design* (2004) adopt a social determinants approach and are targeted to LG. It was therefore surprising that only nine occurrences of intervention evidence were sourced from NGOs. If difficulty accessing these resources is the reason, then NGOs may consider the development of alternative resources, that more explicitly summarise and evaluate the effectiveness of
290 interventions, similar to that which *Beyond Blue* has prepared for anxiety disorders (Reavley *et al.*, 2010).

4.3 In-house evidence, in non-traditional forms

Thirdly, in addition to the likely dearth of available and accessible evidence directly supporting actions, that which is available may simply not be documented in the MPHWP. The interactive model
295 of research utilisation (Weiss, 1979) suggests that research permeates into policy through indirect means (Rütten *et al.*, 2003, Estabrooks *et al.*, 2006). As observed by Stoneham and Dodds (2014) in Western Australia, policy is based not just on assessments of the issues and of scientific evidence, but also on a combination of community and political input, bureaucratic momentum (‘doing what we did last time’), and undocumented exchanges between colleagues within Councils. In regard to Victorian
300 MPHWPs, it is plausible that a combination of peer-to-peer communication, informal networking and

advice from population health experts in State agencies plays an important role. In particular, it is possible that program logic and in-house feasibility analyses of proposed interventions are where any evidence that supports them might be found, rather than in the publicly available MPHWP Further research is needed to explore whether and where evidence regarding effective interventions is derived and used.

4.4 Limitations

This study categorised evidence by the cited source, and identified over 200 sources accessed by LG. However it is acknowledged that in turn, much of the evidence provided by these organisations is obtained from a small number of primary sources such as the *Australian Bureau of Statistics*, the *Victorian Population Health Survey* and *VicHealth* (Victorian Health Promotion Foundation), which has been either re-branded or further analysed for specific purposes. Additional analyses would be needed to determine which primary sources are the most frequently used. It is acknowledged that LGs are likely to have additional health and wellbeing documents that were not accessible for this study. Such documents might contain additional evidence, which would have changed the results had they been available for analysis. Given the large sample of documents (n=116) and that all 79 MPHWPs (i.e. the core document) were included, it is argued that the sample is adequately representative of all evidence used by councils during preparation of their Plans. Nevertheless, it would be beneficial to analyse all MPHWP-related documents, particularly ‘in-house’ documents such as meeting minutes, feasibility studies and program logic models for how any evidence therein is used, and compare the results with this study. This would be most feasible by working closely with only one or two councils over the policy cycle.

In addition to the lack of adequate referencing in MPHWPs that is noted above, the non-academic way in which government documents are prepared may be producing bias that results in threats to the validity of MPHWPs. Issues such as staff inexperience with public health issues, topics that are ‘flavour of the month’, undue pressure from councillors or ‘squeaky wheel’ members of community may all skew the way in which evidence about issues is sought and represented(Cuthill, 2001). However, with reference to epidemiological research, this analysis can be used as a starting point to assess the extent of, and to make recommendations for addressing such bias. This method was developed for a particular use, and the questions that were used were not designed to reveal all characteristics of the evidence. Alternative typologies that categorise evidence by different criteria would provide results that are useful for other purposes. For example, categorising evidence by population sub-group would enable judgements on how adequately LG assesses health equity between populations (Marmot and Bell, 2012). In particular, this study did not identify why evidence from particular sources, on certain issues, and of certain types of specificity was used. Although several reasons for this - particularly in regard to specificity - are hypothesised, further studies that are

designed to establish exactly why this is the case would be valuable. They could contribute to understanding how better evidence could be created and used to inform MPHWP, which would in turn contribute to MPHWP making a greater contribution to public health.

5 Conclusion

340 This study demonstrated that content analysis can be used to identify and categorise evidence used by LG against three criteria; source, issue and specificity to the policy development process. Results suggest that the development of MPHWP is based on evidence from a wide range of sources and on a wide range of issues. Ideally, in order to qualify as evidence-based, each decision point leading to the development of an action should be documented and supported with evidence. However, in reality
345 as shown in this study, evidence that describes problems was most commonly used. Although the community was an important source of suggested interventions, the study identified a deficiency of documented evidence being used to support effective interventions, a fact which may be contributing to LG being limited in making progress in health promotion. The next step will be comparative analyses of evidence used and actions taken (c.f. Browne *et al.* (2015)). This will reveal more about
350 the influence that evidence, both cited and uncited, has on the 'active' part of LG policies.

Results support previous research that identifies a need for research translation that makes relevant intervention research evidence available to LG. It also raises the idea that LG may benefit from using evidence typologies that assist in characterising and critically assessing evidence for suitability to the range of tasks undertaken during development of an effective MPHWP. In addition, LGs could
355 benefit from being resourced with a suite of evidence-based options and case studies shown to be effective in community settings that can be used depending upon local circumstances. Leadership and guidance of this type would be a valuable contribution from the State health department and other organisations that support local government.

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8 Appendix

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Insert Table 4 here



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