

# Leadership for systems change in preventive health -

Review of the literature and current  
activity



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activity

This review was managed by the Centre of Excellence in Intervention and Prevention Science.

This report was prepared by:

Dr Sally Fawkes, School of Public Health and Human Biosciences, La Trobe University

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## Contact

Enquiries regarding this report may be directed to:

Prevention and Population Health Branch

Department of Health

50 Lonsdale Street, Melbourne 3000

Phone (03) 9096 0395

Email: [prevention@health.vic.gov.au](mailto:prevention@health.vic.gov.au)

**For Department of Health users:**

To receive this document in an accessible format phone Prevention and Population Health Branch on 9096 0395 or email [prevention@health.vic.gov.au](mailto:prevention@health.vic.gov.au)

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# Executive summary

This review of the literature and current activity was commissioned by the Victorian Department of Health to inform an innovative approach to developing 'leadership for prevention' in Victoria. The brief for the project is described in Appendix 1. Literature in a range of fields was searched using several key search terms<sup>1</sup>. Insights were identified in relation to three key areas: changing the characteristics of systems; the role of leadership in bringing about change in systems; and interventions for developing leadership that transforms systems.

Overall, the review found that the research reflects an increasing appreciation of the dynamic and complex nature of social systems (such as organisations, sectors and communities) and the challenges this poses for understanding and developing leadership. Much of the work on leadership for transforming systems remains at the conceptual level however, and there is a serious lack of quality empirical evidence, reflecting a major research gap – and opportunity – in this area. Findings from the review in the three areas are summarised below.

## Changing the behaviour of systems

- While deliberate interventions can be used in an effort to change the behaviour and outcomes of complex adaptive systems, the nature of the changes is likely to be a mix of predicted and unpredicted changes that may or may not be observable in the short term. In the longer term, it may be difficult to attribute specific changes to the interventions. Changing the properties of a system so that it produces different behaviour and results is not a one-off exercise, but needs to be a continuing process that utilises appropriate monitoring and evaluation strategies.
- There is no recipe, formula, standard approach or evidence-based 'best practice' for bringing about changes in systems. Instead, the challenge appears to be to detect system components and connections between them, understand the behaviour of the system and identify points of leverage in order to drive transformation.

## Leadership for systems change

- Emerging research exploring leadership, and the roles of leaders, in complex adaptive systems builds on but departs from traditional ideas. Longstanding domains of research continue and new angles are being pursued - leadership traits, attributes and styles (who leaders are); leadership behaviours (what leaders do); and where leaders are found in systems.
- Recent research on styles of leadership point to the types of leaders that might be most effective in complex adaptive systems. Heroic leadership (where a known individual leader is viewed as having the answers) is thought to have no role in such systems, though there is a role for the 'servant' leader and the 'quiet' leader who exerts 'invisible leadership'.
- Leaders who successfully transform organisations and social systems are thought to cause disruption to inspire innovation, embrace and exploit the uncertainty that defines social systems, and make sense of events and phenomena going on in the changing system and communicate this. A

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<sup>1</sup> 'leadership', 'collective leadership', 'organisational change', 'complexity science', 'complex adaptive systems', 'systems change', 'system transformation', 'emergence'

'complexity leadership theory' is emerging from these new directions in research, and proposes three linked leadership roles - adaptive, administrative, and enabling leadership.

- *Leadership* – rather than one prominent leader – is a key concept: it recognises that the requisite knowledge, skills and fields of influence needed to transform a system will not be found in one individual.

#### **Interventions for developing leadership that can transform systems**

- Individuals and teams who participate in leadership development interventions are generally aiming to expand their capacity to effectively carry out leadership roles and tasks, better influence others and make a difference to the performance of organisations or different types of systems. As they move across new, complex situations they require innovative, dynamic tools so they can apply their knowledge, skill and know-how to good effect.
- There is inadequate research of a longitudinal nature to inform the design of a leadership development program for transforming a social system. An intervention with this purpose might be best viewed as a continuous social learning process that involves participants in a variety of program elements, from intensive self-awareness and knowledge development activities via strategic projects to communities of practice. Opportunities to build team-based or collective leadership through working on high value, system change projects may be of particular importance.

Work is well underway to recruit leadership teams to drive and deliver Healthy Together Communities across Victoria. Insights gained from this review suggest that key roles of these leadership teams will be in locating critical components of community systems and forging novel yet meaningful connections between them, and managing knowledge across the system in order to stimulate system-wide changes.

Mapping the prevention system landscape in the state and in local government areas (LGAs) will be an important foundation for the Leadership for Prevention initiative. Developing leadership in the initiative may be approached as introducing a continuous social learning process, comprising several elements (from information exchange via strategic action learning projects to mentoring). These would work in a synergistic fashion to develop knowledge and skills, deep understanding, foresight capacity, and leadership behaviour suited to working in a complex adaptive system, that is, leadership behaviour that enables others to participate, create and lead preventive action.

# 1. Introduction

In 2012, the Victorian Department of Health (the department) announced it was pursuing an ambitious and innovative initiative under a four-year funding grant from the Commonwealth Government's National Partnership Agreement on Preventive Health, which seeks to support work that will slow the growth of lifestyle-related chronic disease. The department will make key investments in system-building, reform and policy to support the delivery of preventive interventions, a new interactive website for prevention and the new healthy eating advisory service. The department will support the development of a Healthy Together Communities strategy that will fund 12 local consortia consisting of 14 local government areas (LGAs) and community health agencies. LGAs will be supported to 'deliver prevention' in alignment with their responsibilities under the *Public Health and Wellbeing Act (2008)* to deliver Municipal Public Health and Wellbeing Plans.<sup>2</sup> Within this larger project, the department has introduced a Leadership for Prevention initiative. This will grapple with critical questions concerning leadership (such as, what does leadership in a prevention system mean? how do we measure its effectiveness? what do we know about best practice in leadership development?) and support a leadership development process. The goal of the overall initiative is to make health and prevention of disease a priority for all actors in a community, within and outside of the formally described health system.

Prevention largely concerns action on social and environmental determinants of health, though some clinical and other health care interventions requiring the knowledge, skills and know-how of health care professionals (such as screening) have a role to play for chronic diseases. Accordingly, numerous stakeholders outside the formal health care system will need to be engaged in the process of leadership to transform existing arrangements and become advocates, champions and enablers of prevention in the local community.<sup>3</sup> Stakeholders likely to become central to the Healthy Together Communities strategy include early childhood centres, schools, recreation facilities, community organisations representing the interests of specific groups and social goals in the community, transport operators, housing agents, retail businesses, media groups and health services. Among the predictable challenges that lie ahead for LGA prevention leadership teams will be the reorientation of mindsets about what is involved in prevention, who does prevention and what those roles need to be if an organised approach to prevention is to emerge. Stakeholders will be challenged to participate in advocacy and action on issues that they may regard as properly sitting with the health sector. The health sector will be challenged on a number of levels, not least of which may be to play supporting, rather than directing, roles in prevention-oriented communities.

Leadership is a critical capacity in public health systems and will be pivotal to the creation of a system for prevention at state and local levels. In foundation documents for the Victorian Prevention System, leadership is recognised as a key area for capacity building and is represented as being concerned with "strategic policy frameworks combined with effective oversight, coalition building, regulation, incentives and attention to system design" (Victorian Department of Health 2011). This literature review will consider whether leadership is a capacity that can be 'added' or if there is another way of thinking about its development. Carr et al (2009), in a report of the UK's Leadership for Health Improvement Program, encouraged leadership development initiatives for prevention to embrace an innovative ethos but warned:

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<sup>2</sup> Victorian Department of Health (2011). *Building the Victorian Prevention System*. Accessed at [http://www.health.vic.gov.au/prevention/prevention\\_system.htm](http://www.health.vic.gov.au/prevention/prevention_system.htm) on 12 June 2012

<sup>3</sup> Drawn from material provided at Leadership for Prevention Workshop held at Department of Health, May 2012

...the leadership challenge in public health is altogether of a different order [than health care services] in terms of its complexity, especially in respect of its multi-faceted nature and the sheer diversity of stakeholders engaged in its pursuit. The fact that the public health field is riven with so many uncertainties and imponderables, together with matters of balance and political judgment, is what contributes to the enormity and complexity of the health improvement challenge. Developing and providing a programme for leadership for health improvement, and one that is grounded in understanding the policy context, is therefore a formidable challenge. (p. 200)

While recognising the challenge posited by Carr et al, the Leadership for Prevention initiative has potential to break new conceptual ground as well as drive a different way for government, non-government, community, business, industry and philanthropic sectors to understand the nature and purpose of, and players in, prevention. Importantly, it provides an opportunity to design, implement and evaluate a multi-sector, multi-centre leadership development process. If an effective longitudinal research approach is introduced, Leadership for Prevention will also contribute to the wider body of knowledge of leadership and leadership development research internationally.

## 2. This project

This review was commissioned to inform the Leadership for Prevention initiative introduced in Victoria in 2012. It was contained to exploring literature relevant to informing practical strategies for developing leadership that can build a prevention system. The review sought to identify papers from the literature in a range of fields not specifically related to health, such as management, leadership and systems change, as well as papers from within the health, public health and health administration literatures. These papers were scanned for key ideas, evidence and lessons that would meaningfully inform the Leadership for Prevention project. Key words combined to search for relevant papers (research and conceptual) were: 'leadership', 'collective leadership', 'organisational change', 'complexity science', 'complex adaptive systems', 'systems change', 'system transformation', 'emergence'.

Key starting questions for the review were as follows:

- How can systems be changed to bring about different outcomes? (see section 3)
- What is the role of leadership in changing systems? (see section 4)
- What options are available to the Victorian Department of Health Prevention and Population Health Branch to develop leadership for systems change in the Victorian context? (see section 5).

# 3. Changing the behaviour of systems

Leadership, in general terms, involves engaging with an existing system and playing a major influencing role in order to bring about change in that system. A [social] system may be a group, organisation, corporation sector or society. In this section, literature explaining systems thinking and complexity in general, and complex adaptive systems in particular, is drawn on to briefly depict key concepts. This provides background for the following two sections that explore threads in the leadership and management literature which relate complex adaptive systems theory to leadership and leadership development.

## 3.1 Understanding systems – from mechanical to complex and adaptive

A trend towards using systems thinking has come to the fore in a diverse range of fields including some that previously relied on mechanistic thinking – engineering, business, physics, military science, agriculture and weather forecasting. (Leischow et al 2008). From body systems (cardiovascular, respiratory, digestive) to the family and community as social systems<sup>4</sup> to society as a highly complex multi-faceted system (Buckley 2008), the concept of a system has also become fundamental in the broad fields of health care and public health (for example, see Mabry et al 2008; Mabry et al 2010). In its report, *Crossing the Quality Chasm: A New Health System for the 21st Century*, the US Institute of Medicine (IOM) (2001, p. 310) explained that a “system” can be defined by the coming together of parts, interconnections, and purpose ... While systems can be broken down into parts which are interesting in and of themselves, the real power lies in the way the parts come together and are interconnected to fulfill some purpose’. Based on reading across literatures, McLaren and Hawe (2005, p.13) defined a system as follows:

A comparatively bounded structure consisting of interacting, interrelated, or interdependent elements forming a whole, which can be described in terms of a coherent structure or function. Thus we have health systems, education systems, food systems, and so on. Systems thinking is central to ecological analysis. More recently in the health literature we are seeing acknowledgement of a differentiation between simple systems (those that can be decomposed into their component parts) and complex systems, those that cannot be decomposed in this way without losing an understanding of the system itself.

The systems perspective stands in contrast to a reductionist, linear perspective, the essence of which is that the whole of a system can be understood through identifying and analysing its constituent parts. While this has been perfectly useful for explaining the behaviour of systems that are akin to machines (mechanistic systems such as clocks, air conditioners), it has ultimately proven to be an insufficient model for understanding systems that have more in common with evolving biological or living systems. Mechanical systems have numerous component parts but when a given stimulus is applied in specific conditions, their actions, behaviour or outputs can be predicted in detail and there are few surprises. This property makes it possible for broken toys, clocks, ceiling fans and even old cars to be dismantled, fixed, reconstructed and tested with some measure of simplicity.

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<sup>4</sup> See, for example, Bronfenbrenner’s work

Tremblay and Richard (2001) observed that dissatisfaction in classical science with reducing complex problems to simple ones began around the mid-20th century and led to intense engagement with complexity across a number of scientific fields. Scientists studying natural phenomena found that mechanical, linear models did not adequately explain the 'fluctuations, bifurcations and instabilities at all levels' (Prigogine 1997, p. 55, cited in Plowman et al 2007) in real systems they were observing, so they generated different models that could account for these phenomena. Developments in information theory, cybernetic and systems theories underpinned the rise in complexity thinking.

A particular form of complex system, a complex *adaptive* system, has been defined as:

a collection of individual agents that have the freedom to act in ways that are not always predictable and whose actions are interconnected such that one agent's actions change the context for the other agent. (IOM, 2001: 312)

While there is no agreed definition of complexity (Edmonds 1995a; 1995b), there is broad agreement on core ideas underpinning complexity science: non-linear dynamics, chaos theory and adaptation/ evolution (Schneider & Somers 2006). Unlike mechanical systems, what each of the component parts of complex adaptive systems do in response to a given stimulus is not necessarily predictable. Their responses to stimuli may be varied and unpredictable. The resulting behaviours, outputs or events have been variously termed 'emergent', 'surprising', 'unpredictable', 'creative' and 'novelty'. In some systems these results can be either innovations or errors (IOM 2001, p. 310).<sup>5</sup>

Several features of complex adaptive systems must be understood to appreciate their relevance across different fields of science and their appeal to those looking for alternative frameworks to understand, explain and research particular types of systems. Complex adaptive systems (Dodder & Dare 2000; IOM 2001; Stacey 1995):

- are made up of a network of many agents which actively gather information, learn and adapt at the same time, in an environment that is shaped by the interactions of these agents. As such, the system evolves with its environment. Order emerges from this interaction between agents or components, rather than being pre-determined and fixed.
- operate at the so-called 'edge of chaos', that is, they are balanced between order and disorder, or anarchy, and are thus capable of generating new phenomena. They are always unfolding and always in transition, offering the opportunity for 'perpetual novelty', that is, new, surprising and/or unexpected events or phenomena arise.
- may host a 'tipping point', a critical point in the evolving system at which the system takes on a different character. As such, the system changes so much that the past can never be replicated.
- are distinguished by agents at one level being the building blocks for agents at the next level. The obvious example of this is cells, which form the basis of organisms, which in turn form the basis of an ecosystem.

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<sup>5</sup> In the field of futures studies, these are called 'wildcards' and refer to unforeseen and largely unpredictable phenomena.

Characteristics of complex adaptive systems are summarised in Box 1.

Change, in complex adaptive systems, occurs in response to forces that are internal or external ('disturbances' and 'shocks'). The nature and magnitude of change in a system may be related to factors such as when and how a force exerts an effect, and the magnitude of forces. Novel or surprising properties may emerge from systems due to the non-linear interaction of their components. Changes in components can, over time, drive change in other components and the larger system in which it is embedded – even if the components are relatively small. Importantly, and of some consequence to those aiming to change the properties and behaviour of particular systems, making small changes can yield significant overall changes in the system or can be as difficult to achieve as large changes if there are strong forces holding the relevant components in place.

**Box 1 - Complex adaptive systems:**

- are made up of many agents that act and interact with each other in unpredictable ways
- are sensitive to changes in initial conditions
- adjust their behaviour in the aggregate to their environment in unpredictable ways
- oscillate between stability and instability
- produce emergent actions when approaching disequilibrium
- are dynamic and non-linear and rarely explained by simple cause-effect relationships.

**Source:** [Plowman et al \(2007, pp. 342–343\)](#)

A distinctive feature of complex adaptive systems is that of emergence, or emergent self-organisation. The outcomes of a complex system - 'emergent outcomes' (Lichtenstein & Plowman 2009) - are produced through (or emerge from) the dynamic interaction of components over time, but are unlikely to be predictable.

## 3.2 Applying a complex adaptive systems approach

In social and economic sciences, there has been an increasing application of complex adaptive systems thinking by investigators, with a variety of phenomena having been explored using complex adaptive systems theory: from decision making during economic downturns to fluctuations on the stock market and crowd responses to emergency events in restricted spaces. An emerging body of work examining the applicability of complex adaptive systems theory to management and social systems research and practice spans diverse fields - such as education, health care, health promoting settings, community development and social reform.

In the management field (see Table 1), the move away from mechanistic ways of understanding organisations has been proceeding for some time (Anderson 1999) and represents a shift from more traditional ways of understanding the role of managers. Grant (2009) asserted that the prime concerns of managers tuned into complex adaptive system thinking will be structures, systems and management styles that will allow self-organising properties of organisations to generate the best outcomes. This approach contrasts with more technical-managerial preoccupations, such as designing and rolling out a tight new policy position through a hierarchical organisation in order to (perhaps falsely) gain or regain control over 'the system'. Olmedo (2010) scoped this shift in thinking towards ideas that are compatible with a complexity paradigm (see Table 1). This shift is reflected in strong threads of the published literature around the utility of complex adaptive systems thinking in improving the performance of work units, organisations and sectors.

**Table 1. Evolving ideas in the field of management**

	<b>Newtonian paradigm</b>	<b>Randomness</b>	<b>Complexity paradigm</b>
Theoretical background	Strong causation	Weak causation	Chaos, complexity, emergence
Organisation structure	Organisation is unique and isolated, rigid and hierarchical	Organisation is formed by different agents interrelated at different levels	Organisation is a complex adaptive system
Management	Cause and effect are linearly related, so perfect knowledge is possible. Success comes from managers' capacity to anticipate, making perfect forecasting and enumerate fixed rules to guide organisation	Cause and effect are related approximately linear. Increasing information is necessary to make forecasting so horizontal nets are fundamental. Success comes from groups rather than from individuals	Cause and effect are non-linearly related. Sensitivity to initial conditions invalidates perfect knowledge and forecasting. Organisations are unstable and dramatic changes can occur unexpectedly. Success comes from learning, emergence and adaptive properties
Sources of information and control	From top to down, anticipative	From down to top. Control emerges through habitualisation of routines and norms	From down to top and from top to down. There are general, simple adaptive guidelines, and rules that emerge from interactions.

**Source: Olmedo (2010)**

The IOM definition of a system, above, points to some of the key questions to be asked when trying to understand a system. For example, what are the component parts of a system? how do these come together and interconnect? what is the overall purpose of the system? how does the system change over time? Edgren and Barnard (2012), in a review of research about how a complex adaptive systems approach can be used to engender integration of health and social care, argued that complex adaptive systems theory provides managers in the health services field with an 'alternative mindset', one that may help people to 'rethink the functioning of the field, specifically to go beyond the present dominant but outdated machine model to one which encourages the cooperation of providers and users for better outcomes'. That an inappropriate model has been used to explain the behaviour and performance of systems is a point made frequently in the literature and there have been numerous calls for models to be developed that better approximate observed phenomena.

The value of adopting systems thinking<sup>6</sup> to understand complex phenomena in health care and public health has been increasingly recognised, with advocates arguing that it advances our thinking about, for example, the emergence of population health problems, community-level health promotion responses to priority health and social issues and the performance of health care services, organisations and systems over time (Anderson 1999; Best et al 2003; Best 2011; Jayasinghe 2011; Hunter 2009; Leischow et al 2008; McQueen 2000; Naaldenberg et al 2010; Rouse 2008). Work by the National Cancer Institute in the US (Marcus et al 2010) and UK Foresight, for instance, demonstrate the value – and potential – for harnessing the power of systems modelling to understand and design strategies to tackle major public health issues (tobacco and obesity, respectively).

In a series of articles in *British Medical Journal* in the early 2000s, a group of investigators sought to plainly explain complexity, complexity theory and complex adaptive systems theory in relation to health and health care (Plsek 2001b; Plsek & Greenhalgh 2001). Responses to these articles were mixed. Some correspondents welcomed the challenge to critically view health care practice and performance through the complexity lens and consider new ways of framing problems as well as solutions. Others expressed concerns that the concepts of complexity and complex adaptive systems are anchored in the physical sciences and have been too loosely appropriated and not necessarily applied correctly (Dattée & Barlow 2010). Notwithstanding these critiques, the papers signified that complex adaptive systems thinking was firmly on the agendas of health system researchers.

The metaphors associated with complex adaptive systems theory may be intuitively appealing, but the use of the theory to build robust models in social sciences has proven to have its difficulties. This problem seems to, in part, relate to the limitations of models and the modelling exercise (including gaps in knowledge about the agents or components of a system and how they behave (Boschetti, McDonald & Gray 2008; Trochim et al 2006). Despite the knowledge base around the field of complex adaptive systems, IOM noted that, in practice, system designers tend to fall back on ideas congruent with mechanical systems. That is, they:

design complex human systems as if the parts and interconnections were predictable in their behavior, although fundamentally, they are not. When the human parts do not act as expected or hoped for, we say that people are being “unreasonable” or “resistant to change,” their behavior is “wrong” or “inappropriate”. The system designer’s reaction typically is to specify behavior in even more detail via laws, regulations, structures, rules, guidelines, and so on. The unstated goal seems to be to make the human parts act more mechanical.(p. 311)

Overall, a number of fields seem to be in a transition between accepting the scientific basis and pervasiveness of complex adaptive systems and understanding how and when complex adaptive systems theory is relevant to the problems confronting them. On the one hand, there are investigators such as Mariotti (cited by Traverso-Yépez 2007, p. 2) who have argued that managers and leaders should embrace complexity because it is:

a fact of life [...] Even if we try, we will not be able to reduce this multi-dimensionality to simple explanations, rigid rules, simplified formulas or schematic ideas [...] This (concept) configures a new vision of the world that accepts and tries to understand the constant changes of the real and does not intend to deny contradictions, diversity, ambiguities and uncertainties, but implies learning to live with them.

On the other hand, investigators such as Plsek and Greenhalgh (2001) have cautioned that not all problems require a complex adaptive systems lens to be adopted to gain results. They argue for a measured approach to applying this theory, based on an appreciation of the nature of the system under scrutiny:

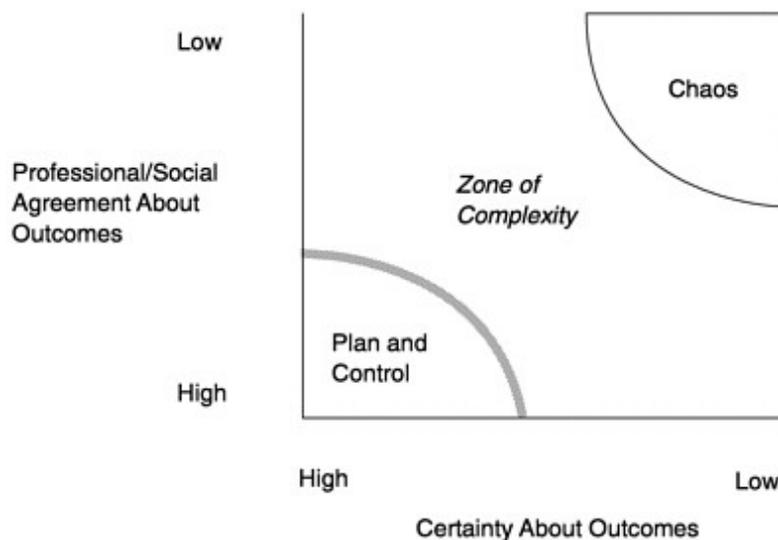
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<sup>6</sup> Systems theory has been traced to von Bertalanffy's work in the 1920s

Not all problems lie in the zone of complexity. Where there is a high level of certainty about what is required and agreement among agents (for example, the actions of a surgical theatre team in a routine operation) it is appropriate for individuals to think in somewhat mechanistic terms and to fall into their pre-agreed role. In such situations the individuals relinquish some autonomy in order to accomplish a common and undisputed goal; the system displays less emergent behaviour but the job gets done efficiently. Few situations in modern health care, however, have such a high degree of certainty and agreement, and rigid protocols are often rightly abandoned.

This 'zone of complexity' is represented in Figure 1, in relation to chaos on the one hand and order on the other.

**Figure 1: Correlations between certainty about outcomes and professional/social agreement about outcomes**



Source: IOM (2001, p. 312)

### 3.3 Changing the behaviour of systems

Based on an understanding of the nature of complex adaptive systems, the issue for people in positions of leadership and management is how to activate and sustain change in systems so that certain properties can emerge. A key concept here is the role of external events - 'disturbances' or 'shocks' - to systems that can stimulate change. Mitki, Sharni and Stjernberg (2008) explained the role played by activators of, or triggers for, changes in challenging the prevailing values, attitudes, beliefs and even worldviews in social systems. The point made about shifting mindsets has relevance for thinking about the potential role of leadership development as a trigger for driving a reorientation of social systems so that they support and enable prevention:

An event is viewed as a "triggering event" if due to its magnitude and potential system impact, it sets in motion a series of mental shifts as individuals try to understand and redefine the situation. Triggering events by their very nature challenge current thinking, practices and routines, and evoke conscious thought on the part of the system's members. They usually stir up feelings and emotions that effect

how people relate to each other and to the changes that are implemented. At the most basic level, triggering events create a dynamic that brings organisational members' mindsets into the arena of transformation.

Two ideas presented here are noteworthy. Firstly, that change is a human process and likely engages people's emotional responses as much as it does their logical and intellectual mind. Secondly, that an idea associated with the above process is that of a 'tipping point'<sup>7</sup> being reached. This term refers to a phenomenon whereby interactions between components in a system reach a threshold, making change at the system levels inevitable (whether or not it is desirable) and leading to sudden and possibly unexpected occurrences. An analogy for this phenomenon is where grains of sand are streamed onto a pile of sand and cause a sudden collapsing of one shape into another. It may or may not be possible to attribute this shift towards a threshold to a 'triggering event' as time will be a factor.

Table 2 reproduces Beauteament and Broenner's depiction of the state of a system that, in their terminology, is 'complexity worthy'. That is, the system has capabilities that allow it to adapt in an environment which has dynamics that are difficult to understand and predict. Some of the indicators concern issues examined in health systems research literature, such as the ability of organisations to rapidly form new and/or novel inter-organisational partnerships to solve problems when the need arises. In relation to the Victorian Prevention System project, the indicators of 'complexity worthiness' point to a range of potentially desirable qualities and practices among those who are, or will be, in appointed leadership roles in LGAs, who will work in local systems to drive the prevention agenda.

The concepts of emergence and tipping points have significance for, and relevance to, the process of changing the dominant character of a social system from one that, by and large, accepts health equity and the prevention of disease and injury as low social priorities. Over time and at any one time, many initiatives have been developed in Victoria and elsewhere that aim to achieve these goals. However, they have proven insufficient for changing the overall prevention orientation of the social system. The concept of a tipping point suggests that there need to be more components connected into the system, and greater connectivity made between components, if the system is to be brought to the point of irreversible change. These components may include institutions, organisations and networks in the health sector (health care and public health) and also outside it. Intensifying efforts to build intersectoral collaboration and generate healthy public policy, as argued in the Ottawa Charter for Health Promotion (WHO 1986), is consistent with this strategy. The complex adaptive systems framework suggests that a triggering event may be needed to stimulate new connections between system components. The collapse of government's ability to finance medical care costs and intense consumer demand for government to prioritise the prevention agenda have been raised as possible triggers for such change. The question is, what level of costs or demand would be enough?

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<sup>7</sup> The idea of a 'tipping point' was popularised by Gladwell (2000), who drew attention to the value of this phenomenon in describing trends. He called attention to three key aspects of trends - making contact with the right people, a 'sticky' (appealing) idea and the right context (which concerns place and timing).

**Table 2. Indicators of a state of being ‘complexity-worthy’**

Criteria	Context-dependent indicators of complexity worthiness
Governance	Able to change policies, adapt structures and adjust authorizations, obligations and permissions in near real time
Environment/ Scope/ Scale	Able to adjust ‘upward’ and ‘downward’ dependencies and interactions, work without predefined boundaries in multi-stakeholder and multidisciplinary communities and scale up/down dynamically
Operational dynamics	Able to form federations, agile groupings and communities of interest using flexible sets of procedures that can be ‘morphed’ as required
Requirements assessment	Comfortable with continually changing stakeholder values, needs, interests and viewpoints manifested as user-centred services
Risk	Open to change, can trade-off risk and opportunity, accepts that there is no ‘right’ answer and embraces learning-by-doing. Resilient
Training	Learns from experience and insights, is able to integrate what has been learned seamlessly, aims at non-process-following capabilities
Equipment	Supports human-machine learning – active, informal decision-making activities – is ‘process neutral’ and fundamentally user-configurable
Tools and techniques	Employs participatory techniques, is demand-driven and flexible in changing the employment of suitable approaches on-the-fly’.
‘Process’	Able to carry out informal sense making in the face of uncertainty and change, collaborates, generates transparency, builds trust, creates ownership, promotes the emergence of creativity, discovers, iterates
Personnel	Seeks out and enjoys working with confident, courageous people with open mindset and informal competencies, introduces diversity, promotes initiative and innovation
Information	Collects information and indicators from a variety of sources, weighs up hypotheses, uses contradictory, equivocal information
Doctrine and Concepts	Goes for agility from outset that creates options and wiggle-room. Seeks out degrees of freedom, transdisciplinarity, is integrative
Organisational Setup	Shows flexibility, takes adaptive stance, seeds space-of possibilities
Infrastructure	Designed to be flexible, adaptable ‘come-as-you-are’
Logistics	Able to deal with on-demand requests, change nature of service provision between <i>ad hoc</i> and predefined
Interoperability	Able to re-configure as circumstances/ expediency requires to enable accessibility
System Architecture	Able to be part of and adapt to federations with no single owner on-demand and as required
System	Provides elements which can be adapted/configured, on the fly at ‘run time’. Uses

Engineering	dynamic discovery, resource aware adaptation
Monitoring	Adjusts ongoing activities to circumstances, is flexible when unexpected events take place
Evaluation	Involves evaluators right from the beginning, captures actual change, queries whether a difference has been made, questions whether the appropriate thing has been done, deduces learning benefits

Source: [Beautement and Broenner \(2011, pp. 117–118\)](#)

### 3.4 Conclusion

Since the 1990s, investigators in diverse fields, including health, have increasingly looked to complex adaptive systems theory to better explain behaviours of systems they seek to change. Key features of complex adaptive systems are known to derive from non-linear dynamics, chaos theory and adaption/evolution: path dependence, feedback, scale-free networks, emergent behaviour and phase transition. Complex adaptive systems theory has been applied to gain insight into the behaviour of a range of systems, such as organisations and communities, and how it may be changed. On the one hand, change occurs naturally as a result of the dynamic interaction of existing components in a system. Stacey (1995) noted that:

The application of the science of complexity to organisational life leads to the proposition that changeable organisations are those in which the informal feedback networks are sustained away from equilibrium in a state of bounded instability. The disorderly dynamics of contradiction, conflict, tension, and dialog provide the driving force for changeability.

On the other hand, change can occur in response to forces that are internal or external ('disturbances' and 'shocks'). Novel or surprising properties may emerge from systems due to the non-linear interaction of their components. The nature and magnitude of change in a system may be related to factors such as when and how a force exerts an effect, and the magnitude of forces. Changes in components can, over time, drive change in other components and the larger system in which it is embedded – even if the components are relatively small. Making small changes can yield significant overall changes in the system or can be as difficult to achieve as large changes if there are strong forces holding the relevant components in place. Deliberate interventions may produce a mix of predicted (desired) and unpredicted (desirable and undesirable) changes. Changing the properties of a system so it produces different outcomes is not a one-off exercise but, like quality improvement processes, represents a continuing process. Significantly more empirical research is needed to understand how change is brought about in social (complex adaptive) systems.

That a need has been identified by the Victorian Government for growing a prevention system indicates that the existing system does not adequately enable prevention at state and community levels. Incremental changes to organisations and systems in the existing approach are unlikely to be sufficient in changing the nature and outcomes of the system – there are numerous, strong forces inhibiting connections being made across the system and new thinking and activities emerging. Drawing on complex adaptive systems thinking, the system will need to comprise a different constellation of components that are 'wired up' or connected differently. Where the distinction between mechanical and complex adaptive systems has resonance for the Victorian Prevention System project is in how the prevention system and its purpose are conceptualised, which component parts are thought to be included, what connections are made or enabled between them, and what approaches might be considered for driving development of the system.

# 4. Leadership for systems change

In this section, selected work from the vast literature on leaders and leadership is briefly reviewed in an effort to address the question, **what does leadership look like if our goal is to create a system for prevention?** It calls on concepts associated with complexity and complex adaptive systems theory that were elaborated on in section 3.

## 4.1 Themes in the leadership literature

A recurrent theme in the literature is: what is leadership? No consensus exists about a definition of the term 'leadership' although some core ideas have been evident in a range of definitions. For example:

- leadership is about influencing others
- leadership is a process
- the context for leadership is a group
- leadership is concerned with goals and how to achieve them
- leaders and followers share an understanding of goals.

The definition offered by organisational behaviour researcher, Gary Yukl (2006), embodies these key ideas and does not pin responsibilities for leadership to particular roles in a group, organisation or larger social system.

He proposed that leadership is:

the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives. (p. 8)

Northouse (2001) suggested that leadership is a process whereby a common goal is achieved by an individual influencing a group of individuals. Defining leadership as a process, according to Rowe and Yukl (2011), challenges a long-held idea that leadership is a personal characteristic or trait that one is born with and is held by a few. Rather, 'leadership is a transactional event that happens between leaders and their followers' (p. 1). Cogliser and Brigham (2004) argued that because these variations exist, it is important that researchers 'acknowledge that the purpose of their research and the nature of their research questions will have a strong impact on their choice of leadership definition' (p. 781).

A comprehensive review of published work on leadership by Aviolo, Walumbwa and Weber (2009) scoped trends in practice and research that have been identified across several other reviews. They found an evolving focus on:

- a holistic perspective of leadership
- the causal impact of leadership in the short and longer terms
- the notion that 'followers' can be part of leadership dynamics
- the value of leadership cascading through a system
- defining what actually makes a difference in developing leadership
- the nexus between 'e-leadership' and organisations; team-based, distributed and shared leadership in organisations

- the premise that, if organisations are complex adaptive systems, then leadership is an emergent property of such systems<sup>8</sup>.

Literature in the field of leadership is dominated by theoretical work, and there is a serious lack of empirical work. In 2000, a detailed and substantial qualitative and quantitative review of a decade of published papers in the prominent journal, *The Leadership Quarterly*, revealed that the ratio of empirical to conceptual papers was one to three. This literature has several streams, including the generation of concepts, theories and models, empirical investigation of leadership phenomena and meta-analyses of published research. Several topics have been studied in depth and from different perspectives: the person (who leaders are, their traits); their behaviour (what leaders do, their style); situations (where and when leadership occurs) and capability for development (ability to gain leadership capabilities through responses to circumstances). There has been an ebb and flow in the topics covered. For example, the trait approach to understanding leadership had been thought to be declining in appeal as the contextual or contingent nature of leadership came to the fore as a concept (as it did with organisational behaviour) and subsequently became a focus for research and published papers. Cogliser and Brigham (2004) observed that a trait approach to leadership has re-emerged, as recognition has been given to traits that may be central to a person being perceived as a leader.

While a detailed review of the major theories of leadership generated over the last several decades is outside the immediate focus of this project's brief, it is nevertheless important to recognise the foundations on which new thinking that is arising in this field is based. Indeed, it is likely that 'outmoded' ideas about leadership are alive and well in the organisations, networks and communities that need to be engaged in the Victorian Prevention System project.

Over time, many theories have been proposed, tested (to the extent they can) and debated, with some gaining currency and traction. The development of influential theories about leaders and leadership has been documented by Chemers (2000): the 'great man' theories (akin to a 'born to rule' approach), (individual) trait theories, behavioural theories, participative leadership theories, situational and contingency theories, and transactional/ transformational theories. The role of a central leader, or small group of leaders, has been replaced with leadership at all levels, an idea picked up in distributed leadership, shared leadership and collective leadership concepts (Denis et al 2001). Context, identified many years ago as an important aspect of leadership (Fiedler 1971), has gained traction as a critical factor in understanding the emergence and practice of leadership (Hickam 2009). For example, situational and contingency theories recognise that environment and context play an important role in styles of leadership and even in who emerges as a leader at particular times. (Leadership of an organisation or society at times of economic, political or social crisis is thought to be qualitatively different to leadership in relatively stable times.) A number of others have reviewed these theories and called attention to the development of ideas and gaps in what we know. For example, Northouse (2007) reviewed many of the same theories, but also discussed the path-goal theory, team leadership, and psychodynamic leadership theories.

Leadership for changing whole systems using complex adaptive systems theory has relatively recently emerged as a specific thread in the leadership literature, with contributions varying from empirical research (there are few of these) to original conceptual papers that develop perspectives on the topic as a basis for debate and future research (for example, see Dattee & Barlow 2010). Stacey's 1995 paper, *The science of*

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<sup>8</sup> A concept not explored here but worth capturing (as it may have potential application to thinking about leadership in a system) is that of a complex adaptive systems approach to governance - 'nodal governance'. Significant change in complex social systems, such as the health system, appears to rely in part on linkages being made across existing 'nodes' of governance in a system (Burris, Drahos & Shearing 2005) and ultimately the alignment of a wide variety of organisational actors with strong nodes (Burris, Hancock & Lin 2007).

*complexity: an alternative perspective for strategic change processes*, relates complex adaptive systems to organisations, in particular the strategy process, and provides insights into two themes (bounded instability and spontaneous self-organisation and emergent order). One of Stacey's major conclusions is that research in the field of management and leadership should shift to pursue questions about irregular patterns in systems and what these irregularities mean, in order to deepen insight into changing properties of systems. In respect to leadership, he asked 'what does leadership mean when powerful figures in an organisation may be able to choose, plan, and control the next interventions of large numbers of others but cannot choose, plan, or intend the long-term outcomes of those interventions?' (p. 492). According to Plowman et al (2007) the new thinking about organisations as complex adaptive systems challenges the 'fundamental premise of what leadership is'.

For the purposes of this review, literature related to two areas will be briefly explored further. The first area (given the recent investment by the Victorian Department of Health in LGA health leadership teams) is that of leadership styles that would be useful for transforming complex adaptive systems. The second area is the nature of leadership for changing or transforming complex adaptive systems (social systems including organisations and communities) into serving the goals of prevention and population health.

## 4.2 Leadership styles

Several concepts about styles of leadership have arisen over time, including authentic leadership, transactional leadership, transformational leadership and ethical leadership (Aviolo, Walumbwa & Weber 2009; Harms & Crede 2010). These draw attention to behaviours evident in leadership practice, which are underpinned by a wide range of values, attitudes and beliefs. Research is ongoing in relation to properly defining these constructs, being able to reliably measure them and apply them.

Studies that have investigated styles of leadership indicate that styles matter and certain styles have particular significance and meaning in particular contexts. Conditions in a social system are continually changing and specific situations will arise from time to time that may require heroic leadership. Researchers have argued that in complex adaptive systems however, there is no role for the heroic leader (a visible individual leader who is viewed as having all the answers). Rather, there is a potent role for the servant leader (Greenleaf 2002) or the quiet leader (Mintzberg 1999) and for the leader not to have all the solutions but to be able to ask questions (Grint 2005), thereby enabling others to engage in the process of finding solutions through co-production. These are leaders who recognise they do not to have all the solutions.

The idea of a servant leader was proposed by Greenleaf in 1970 and is concerned with the notion that leadership starts with a sense of being in service to others and having a commitment to serve, however these may be defined by an individual. This shifts over time to roles in leadership. Greenleaf (2002) linked this idea to the notion that with leadership performed in the service of a community comes health, wisdom, freedom, autonomy and greater engagement as a servant. It has been referred to as a paradigm for leadership in the 21<sup>st</sup> century, as it emphasises values that some believe have dissipated in our society and need to be reclaimed in the interests of the common good. It stresses connections between people and to community:

All that is needed to rebuild community as a viable life form for large numbers of people is for enough servant-leaders to show the way, not by mass movements, but by each servant-leader demonstrating his or her unlimited liability for a quite specific community-related group. (Greenleaf, 2002: 53)

Quiet leadership is depicted as creating conditions that are positive, inviting and encourage openness and trust. Quiet leadership and servant leadership are thought to be more relevant for evolving the values,

orientation, decision-making processes and performance of the existing prevention landscape towards a more participatory, relationship-based and multi-sector approach.

Summarising a range of aspects of leadership styles, Hannaway, Hunter & Plsek’s (2007) distinction between what makes for a successful leader and a successful improvement leader (Table 3) calls attention to the behaviours of a leader concerned with making change. This work is included here to highlight what might be the most valuable traits and styles of people engaged to drive leadership for prevention across LGAs in Victoria.

**Table 3. Leader behaviours**

A successful leader	A successful improvement leader
<ul style="list-style-type: none"> <li>• Communicates clear vision, direction and roles</li> <li>• Strategically influences and engages others</li> <li>• Builds relationships and works collaboratively across organisational boundaries</li> <li>• Challenges thinking and encourages flexibility, creativity and innovation</li> <li>• Demonstrates mastery of management skills</li> <li>• Enables others to drive for results and improvement</li> <li>• Practises political astuteness</li> <li>• Displays self-awareness and emotional intelligence</li> <li>• Manages personal and organisational power and values diversity</li> <li>• Nurtures a culture in which leadership can be developed and enabled in others</li> <li>• Ethically manages self, people and resources</li> <li>• Commits with passion to values and mission</li> </ul>	<ul style="list-style-type: none"> <li>• Sees whole systems and any counter-intuitive linkages within them</li> <li>• Brings in the experiences and voice of staff, service users and the community</li> <li>• Exposes processes to mapping, analysis and redesign</li> <li>• Encourages flexible, innovative rethinking of processes and systems</li> <li>• Sets up measurement to demonstrate impact and gain insight into variation</li> <li>• Facilitates reflective practice</li> <li>• Develops quality and risk management within an evaluation culture</li> <li>• Works constructively with the human dimensions (psychology) of change</li> <li>• Sustains and embeds past improvement and enables continuous improvement</li> <li>• Spreads improvement ideas and knowledge widely and quickly</li> </ul>

### 4.3 Leadership to change social systems – organisations and communities

Leadership to bring about change in whole systems is a frontier area of research, attracting attention among those with interests in various public policy domains (for example, food supply, urban development, education), social systems (for example, urban and rural communities) and different types of organisations. A number of researchers - including Marion, Uhl-Bien, Plowman, Lichtenstein and Leischow<sup>9</sup> - appear to be leading this new

<sup>9</sup> Relevant papers include: Provan, Beagles & Leischow, 2011; Lichtenstein, Uhl-Bien et al, 2006; Lichtenstein and Plowman, 2009; Marion and Uhl-Bien, 2001)

area of research and scholarship, which, broadly speaking, gains its focus from marrying leadership theory and complex adaptive systems theory. Ideas emerging from this work are challenging 'tidy' ideas about both the practice of leadership and the process of developing leadership. Plsek and Best are notable researchers leading conceptual work in the applied field of public health.

The literature on leadership, and developing leadership, is mostly in organisations and is substantial, multi-faceted, reflective of contextual differences (for example, leadership in different countries and settings) and, as a result of intensive research over several decades, mature. New ways of thinking about leadership in organisations continue to evolve from this foundation. Emerging models of leadership rely less upon the authority of managers and people in formal leadership roles (Schneider 2002) and more on the newer ideas associated with complexity theory that transcend the physical, biological and social sciences. Embodied in this literature is debate about the relationship between leaders and followers in leadership.

Of relevance to this review is the question of what leadership means if we seek to bring about the type of complex organisational change needed to embed health within 'everyone's' agendas. Here, 'everyone' refers to the organisations that influence the determinants of health and wellbeing in the community and have a role to play in the active prevention of health conditions. A central question is whether incremental change (to priorities and policies across many sectors, multiple workforces, knowledge-based resources and so on) will be sufficient to develop a system for prevention, given the paradigmatic nature of the shift required. Hunter (2009) and others have argued that to gear a system to prevention and health promotion, no less than a systemic shift in mindset, priorities, investments and action in both health and non-health sectors is required, given that there has been a long association between health care (where there are long-standing investments in policy, professional reputation and infrastructure supporting 'high tech', reactive individualised health care) and prevention. If incremental change is not sufficient, what might provoke a disturbance or shock to the system? Referring to the sphere of education, Fullan (2004) observed that:

. . . a new kind of leadership is necessary to break through the status quo. Systematic forces, sometimes called inertia, have the upper hand in preventing system shifts. Therefore, it will take powerful, proactive forces to change the existing system (to change context). This can be done directly and indirectly through systems thinking in action. . . . To change organisations and systems will require leaders to get experience in linking other parts of the system. These leaders in turn must help develop other leaders with similar characteristics. (p. 7)

The nature of leadership is all important. A number of assumptions about leadership have been longstanding and while they may have currency in some situations, are contested in an environment that is rapidly changing and where no one person can possibly have all the salient knowledge to know how to understand problems and develop solutions. These assumptions include (Wheatley & Frieze 2011, p.1): leaders can be relied upon for having 'the' answers - they know what to do; people generally do what they're told - they just have to be given good plans and instructions; and a situation where there is high risk requires the exertion of high control. As situations grow more complex and challenging, power needs to shift to the top (with the leaders who know what to do). Burns (year reference?) argues we need to abandon the 'leader-as-hero' and invite in the 'leader-as-host'.

Based on empirical evidence from studies of local level systems, Marion, Uhl-Bien and McKelvey (2008) argued that traditional theories of leadership need to be revisited given that more recent understandings of organisational behaviour have been generated through the application of complexity science.

Complexity science allows us to develop leadership perspectives that extend beyond bureaucratic assumptions to add a view of leadership as a complex interactive dynamic through which adaptive outcomes emerge. This new perspective, which we label Complexity Leadership Theory, recognises

that leadership is too complex to be described as only the act of an individual or individuals; rather, it is a complex interplay of many interacting forces. (p. 314)

Their studies indicated that leaders 'enable, rather than direct' change and that leadership can emerge from anywhere within a system. Leaders are enablers who work effectively in a complex adaptive (rather than machine-like) system because they tune into the dynamic social context in which they are operating. They change routines and ways of operating that are at odds with system-wide objectives; make what appear to be novel or unusual connections between people and entities (groups, networks, organisations, companies) to stimulate new ideas, behaviours and patterns, or introduce new agents into the system; appreciate the change or innovation-making potential of conflict and uncertainty; and establish simple rules that drive change in desirable directions through decisions.

This field of research is only just emerging, and much more empirical evidence is required to clarify what system transformation means, what happens when systems transform, and what actions are needed to transform them. Braithwaite noted that more research is needed to escalate insight into how distributed and shared leadership models work and what challenges there might be in using them, in particular (Bennett et al 2003, 2002; Bolden 2011; Hiller et al 2006) as a way of approaching the shared, multiple-interactive nature of the social phenomenon of leading. Senge's work on learning organisations offers some rich insights into changing organisations through continuous learning cycles (Senge 1990).

Drawing out from a focus on leadership practice and briefly looking at practice in relation to leadership context provides another angle on the nature of systems change required to build a prevention system and the task of leadership. Nissen, Merrigan and Kraft (2005) reported on a practice framework for 'strategic collaborative leadership' (p. 130) that arose from work in a variety of areas: collaborative leadership (Chrislip); working across boundaries (Linden); citizens and civic leaders' roles in leadership (Chrislip & Larson) and transformation failure (Kotter). The five aspects of the approach were:

- acknowledging community leadership precursors
- planning for collaboration
- emphasising key leadership tasks and functions during collaboration
- keeping a balanced eye on intermediate and long-term outcomes.

Of particular interest is the work of Linden (2002) who drew lessons from settings in which collaborations have succeeded, pointing to some factors that are likely to be critical success factors for creating a prevention system at state and local levels. These characteristics were:

- recognition that one leader or system cannot solve the problem
- patience with, or even gaining true pleasure from, solving problems in a collaborative, multi-sectoral, transdisciplinary manner
- the ability to self-examine, reflect and self-correct
- a sense of urgency
- seeing value in solutions rising from an empowered organisation or community
- seeing value in incorporating evidence-based approaches
- hopefulness
- creativity.

Both of these pieces of work examine the nature of leadership in the 'zone of complexity' (represented in Figure 1), that is, where leadership must develop infrastructure and capacity within the system (that is ordered yet adaptable) and drive the activities of the system (which may be driven by continuous learning about what is/is not working and for whom).<sup>10</sup> Given the importance of generating connections between actors (partnerships) in a prevention system, these pieces of work also suggest that there would be value in further examining the community development and related literatures<sup>11</sup> to gain practical insights into cultivating 'community readiness' for building a prevention system and the role of community members as key agents for change.

A particularly interesting and relevant area of emerging work tied in with the prevention agenda and offering considerable opportunities for cross-fertilisation of ideas, is climate mitigation and adaptation. In one of the few papers exploring the relevance of leadership and climate change, Stiller and Meijerink (2011) outlined the main leadership challenges in this domain, reviewed leadership theories pertinent to the challenges and proposed an integrative framework for analysing leadership for adaptation. An important contribution of this work is the identification of specific leadership tasks to drive particular functions. The investigators, referencing work by van Nieuwaal et al (2009), noted that adaptation to climate change requires broad-based engagement by diverse sectors - housing and other forms of infrastructure, primary production and agriculture, urban and regional planning and nature preservation and energy supply. In general, government actors at all levels will have to step up to critical and interdependent roles in developing and implementing policies supporting adaptation, although civil society/communities and private sector actors have important roles to play as well. The major challenges for leadership in this field have parallels in health promotion (WHO 1986) and prevention and include (Stiller & Meijerink 2011):

- influencing policy processes to build acceptance and support implementation of adaptation policies
- strengthening connectivity across different levels of policy making machinery, sectors and actors
- increasing the adaptive capacity of climate adaptation-related governance networks
- increasing the ability of communities and society as a whole to learn in response to feedback from natural environmental systems and anticipate the long term impacts of climate change.

Drawing on leadership concepts from four bodies of knowledge<sup>12</sup>, the integrative framework proposed by the investigators usefully sets out leadership functions, the locus of leadership (indicating responsibilities and roles) and leadership tasks. At the time of writing it had not been applied to empirical cases. Echoing best practice ideas about health promotion, this framework is worth exploring further as an input to shaping an approach to leadership for prevention.<sup>13</sup>

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<sup>10</sup> Osborn and Hunt (2007) explored this tension further in their paper on 'Leadership and the choice of order: complexity and hierarchical perspectives near the edge of chaos'.

<sup>11</sup> These literatures were not thoroughly examined in this review but are recognised as important to understanding leadership that is not 'top down' and is about change and transformation of larger social systems.

<sup>12</sup> These are: theories on leadership in the policy process such as policy entrepreneurship and ideational leadership; leadership for connectivity (this covers collaborative, catalytic or integrative leadership); complexity leadership theory (described earlier); and sustainability leadership theory ('eco-leadership' and leadership in socio-ecological systems) .

<sup>13</sup> Climate change adaptation is a key area for prevention in itself.

**Table 4. Leadership functions, their locus and associated tasks**

Leadership functions	Locus of leadership	Leadership tasks
Political-administrative	<ul style="list-style-type: none"> <li>Positional leaders</li> <li>Key individuals (elected politicians and/or managers)</li> </ul>	<ul style="list-style-type: none"> <li>Develop, communicate and monitor the realisation of a shared vision on climate adaptation</li> <li>Generate and allocate necessary resources for climate adaptation</li> </ul>
Adaptive	<ul style="list-style-type: none"> <li>Complex adaptive system</li> </ul>	<ul style="list-style-type: none"> <li>N/A (adaptive function is emergent property for climate change)</li> </ul>
Enabling	<ul style="list-style-type: none"> <li>Positional leaders</li> <li>Key individuals (sponsors, boundary spanners, policy entrepreneurs, champions)</li> </ul>	<ul style="list-style-type: none"> <li>Allow for and stimulate a variety of adaptation strategies and options</li> <li>Create a sense of urgency e.g. by setting deadlines</li> <li>Insert adaptive tension</li> <li>Foster interaction</li> </ul>
Dissemination	<ul style="list-style-type: none"> <li>Positional leaders</li> <li>Key individuals (sponsors, boundary spanners, policy entrepreneurs, champions)</li> </ul>	<ul style="list-style-type: none"> <li>Insert newly developed ideas (within the complex adaptive system) into the network of positional leaders</li> </ul>
Connective	<ul style="list-style-type: none"> <li>Positional leaders</li> <li>Key individuals (sponsors, boundary spanners, policy entrepreneurs, champions)</li> </ul>	<ul style="list-style-type: none"> <li>Promote problems and mobilise actors to search for solutions</li> <li>Bring people together/agree on a collaborative strategy</li> <li>Stimulate multiple action options/working together/ building trust and legitimacy</li> <li>Forge agreement/move to action/implement strategies</li> </ul>

#### 4.4 Principles of leadership for the Victorian Prevention System

Leadership and systems change literature from the last 10 years, in particular literature that reports research in which complex adaptive systems theory is applied, indicates several contemporary principles of leadership that could apply – or at least be tested with – the Victoria Prevention System. Table 5 presents a proposed approach to leadership in the Victorian Prevention System, based on findings from this review.

**Table 5. Leadership in the Victorian Prevention System – Proposed approach to best practice**

Leadership issue	Proposed approach
What role do leaders play in a prevention system?	<ul style="list-style-type: none"> <li>• Developing a prevention system will engage organisations and communities</li> <li>• Main role as enablers to generate dialogue, make connections, encourage innovation, embed new ways of working</li> <li>• Occasional role as directors where technical tasks and operations are required to be created and institutionalised</li> </ul>
Who are the leaders in a prevention system?	<ul style="list-style-type: none"> <li>• Leadership is already present in organisations and communities</li> <li>• Leadership can emerge from anywhere in the system – from those who have formal roles to lead and from those who work in the system at any level</li> <li>• Engage those already involved in leadership activities</li> <li>• Develop a ‘cascade’ of leadership at all levels (vertical development)</li> <li>• Develop leadership across all components (groups, organisations, networks) in the system (horizontal development)</li> <li>• Identify leaders emerging from any level within the system</li> </ul>
What types of leaders are needed for a prevention system?	<ul style="list-style-type: none"> <li>• A mix of leaders is desirable given the multi-faceted and ongoing nature of the social change process involved in building a prevention system</li> <li>• Embrace ‘servant leaders’ and ‘quiet leaders’</li> <li>• Include leaders who are ‘rational-legal’, ‘charismatic’ and ‘traditional’ leaders</li> <li>• ‘Heroic’ leaders have no role</li> </ul>
What behaviours should leaders in a prevention system have?	<ul style="list-style-type: none"> <li>• Leadership involves transforming a system so leadership behaviours will be concerned with creating change</li> <li>• Disrupt existing patterns</li> <li>• Create and highlight/surface conflict by encouraging new agents in the system, highlight conflict among existing agents</li> <li>• Acknowledge/embrace uncertainty in the nature of problems to be solved and how to solve them</li> <li>• Encourage innovation</li> <li>• Establish simple rules to guide decision making – <i>e.g. who has influence here? what is essential to preventing this from occurring in the next generation?</i></li> <li>• Encourage people to gather (‘swarm’) in order to solve problems</li> <li>• Promote interactions between agents (e.g. to share information) without expectation of outcome</li> <li>• Interpret external and internal conditions and events and act as a ‘sense-maker’,</li> </ul>

especially during times of rapid and disorienting change

- Foster shared understanding (of a problem, the identity and role of an organisation) to produce coherence by paying attention to language
- Accept the role of directing attention to what is important and what things mean

## 4.5 Conclusion

Established theories about leadership concern the role of a leader, or group of leaders, in articulating a desirable future state, gaining support, exercising influence and directing action within or across organisations to achieve this state. Complex adaptive systems theory has been applied to organisational and social systems research in recent years, prompting re-examination of the context for, and objectives of, leadership.

Frontier theoretical research on leadership in the context of complex adaptive systems suggests that attempts by a leader to control or coordinate change in an organisational or social system (for example, treatment-orientation to prevention-orientation) by using a mechanistic approach are likely to fail. Only certain parts of systems may be responsive to detailed plans and linear, hierarchical processes, so a different approach – and leadership mindset – will be needed if we are to change or transform whole systems.

Leaders and leadership teams are considered to be enablers (not directors) of change, communicating a direction and creating conditions where others can also step forward to produce innovations and changed states. The role of leaders may best be described as disrupting (not stabilising) existing patterns; encouraging innovation and novelty by applying simple rules (for example, what here is preventable?); creating clusters of activity; encouraging unusual and emotional connections among people; and making sense of actions emerging from the self-organising system.

Some empirical evidence exists that, when the context has the characteristics of a complex adaptive system, transformation can not merely result from the actions of people with formal leadership responsibilities ('professional leaders') but also people who are at different levels within and across organisations, networks, communities and multi-sector systems.

Salancik et al (1975) consider leadership to be an emergent property of constantly changing organisational and social systems, rather than something added to systems, and can emerge as shared meanings about problems, strategies and end-points are generated. Stakeholder and social network analyses would shed light on who to involve, and how, in transforming health and non-health organisations and communities into systems oriented to prevention.

Heroic leadership (where there is a visible individual leader who is viewed as having all the answers) has no role in complex systems but there is a role for the 'servant' leader and 'quiet' leader. These types of leaders recognise that they do not have all the solutions but that they are able to ask 'good' or potent questions, thereby enabling others to engage in the process of finding solutions through co-production. That being said, team-based or collective leadership (in which servant and quiet leaders are embedded) is what we might be looking to develop in Victoria, given the range of structures and institutions that shape population health.

There is a considerable leadership challenge ahead to build on assets of the existing approach to prevention and develop an effective system for prevention in Victoria. Many of the building blocks, nodes and champions required for a prevention system at the state and local levels do already exist in the health care system. For some of these actors, their endeavours will already play a role in prevention and they will naturally champion a stronger system for prevention. Other actors that need to be, but are not currently, engaged may be

disinterested, at best, and actively resistant to change, at worst. Their involvement in health-related activities may be limited to ensuring their organisation or company meets statutory occupational health and safety standards, so they will require more exposure to persuasive arguments and evidence for being involved. Strong and sustained leadership, to overcome resistance and build support and engagement within organisations and across a new type of system, will be needed.

# 5. Interventions for developing leadership that can transform systems

## 5.1 Developing leaders or developing leadership

A critical distinction is made in the leadership literature between leader and leadership as the focus for development initiatives. Drawing on research into leadership development programs since the late 1980s, Day (2001) proposed a set of characteristics that distinguish between these approaches (Table 6). This distinction is not mere semantics as the distinction does have important implications for what the program is expected to achieve and thus its objectives, learning strategies and evaluation model (Grove, Kibbel & Hass 2005) for a program.

**Table 6. Differences between Leader development and Leadership Development**

	Development target	
Comparison dimension	Leader	Leadership
<b>Capital type</b>	Human	Social
<b>Leadership model</b>	<u>Individual</u> Personal power Knowledge Trustworthiness	<u>Relational</u> Commitments Mutual respect Trust
<b>Competence base</b>	Intrapersonal	Interpersonal
<b>Skills</b>	<u>Self awareness</u> Emotional awareness Self confidence Accurate self image <u>Self regulation</u> Self control Trustworthiness Personal responsibility Adaptability <u>Self motivation</u> Initiative	<u>Social awareness</u> Empathy Service orientation Political awareness <u>Social skills</u> Building bonds Team orientation Change catalyst Conflict management

	Commitment	
	Optimism	

**Source: Day (2001): 584**

In the traditional approach of leader development, individuals in existing leadership roles or with potential to become leaders (however that may be appraised) are selectively recruited to participate in a program. The initiative, in effect, is responsible for ‘adding’ leadership (Aviolo, Walumbwa & Weber 2009) to organisations to improve their effectiveness. Leader development generates human (individual) capital and emphasises building knowledge, skills and personal capabilities of individuals who have formal leadership roles in organisations. Sometimes, assessments of these factors using psychological and other instruments (for example, 360 degree performance feedback tools) are undertaken in order to inform the relative emphasis of a program, establish baseline measures and motivate participants towards improving their ratings or assessments. This is known as a deficit-reduction model (Aviolo, Walumbwa & Weber 2009).

In contrast, a leadership development initiative that is considered to be contemporary responds to what is known about the field, is highly responsive to context, is informed by knowledge about the dynamics of complex adaptive systems and views leadership as an emergent property of social systems (Salancik et al 1975 cited in Day 2001). Leadership is regarded as emerging as ‘shared meaning’ between people unfolds (Day 2001, p. 605) and has the potential to be ‘transformative’, that is, capable of changing the overall character and direction of the system. (The desire to create change in the health system to the point where prevention is demonstrably the highest priority would involve transformative leadership.)

Drath and Palus (1994) explained the distinction in terms of the questions a participant might ask: **‘How can I be an effective leader?’** is the relevant question for an individually-focused leader development program while **‘How can I participate productively in the leadership process?’** is the relevant question for a leadership development program. In a program with this latter approach, participants are not necessarily in the top echelons of hierarchical organisations but might come from anywhere in an organisation, network or other social system.

## 5.2 Review of selected leadership development initiatives<sup>14</sup>

To inform thinking about what a Victorian Leadership for Prevention initiative might look like, a number of other leadership development initiatives were identified and explored in terms of their key features, target group and structure. Several of these are included in Table 7. The evaluation status of programs – whether or not a program evaluation has been undertaken and published – is also indicated.

Programs described in Table 7 vary markedly in terms of their strategic focus (why they exist), target audience (which individuals or groups of people are regarded as requiring exposure to leadership development processes), features and structure (from intensive one-off short term programs to multi-module programs implemented over a year). These variations point to the context-specific nature of

<sup>14</sup> Further work to develop and analyse a ‘living’ stocktake or observatory of leadership development programs, could be advantageous to the Victorian Department of Health as a strategy to identify cutting edge program models and elements and continually inform the Victorian Leadership for Prevention initiative.

leadership development programs, cost factors<sup>15</sup> and views about what constitutes an effective program in the absence of evidence-based best practice principles.

A common aspect of these programs is that they all currently operate, or were operating, in the public or not-for-profit sector. Program details and evaluation outcomes of private sector leadership development initiatives are generally much less available for scrutiny because of competitive advantage and other reasons, reducing the ability to learn from different assumptions about, and practices in, leadership, leadership development and strategies for leadership development. Alimo-Metcalfe and Lawler (2001), who conducted a study of 36 organisations<sup>16</sup> from both the private and public sectors, observed that public sector organisations (including in health systems) tended to turn to private sector organisations to tap into lessons about developing expertise. Interestingly, the findings were similar in organisations located across both sectors:

- leadership was found to be a ‘woolly’ concept and the term ‘leader’ is used widely but is not well defined
- many outdated assumptions about, and models of, leadership development are relied on by organisations, though the concept of ‘transformational leadership’ is being used more
- leadership development practices are in the early stage of evolution; the health sector may be able to offer lessons to the private sector as many programs operating there are ‘faulty’
- there is much ‘good practice’ and this tends to reflect the wider national culture
- leadership development should be seen as a set of activities and not as a self-contained and time-limited activity like job skill training courses often are
- successful leadership development initiatives tend to be linked to human resource management units that are robust and well regarded.

The programs in Table 7 fall into two broad categories – programs in which participants learn ‘about’ and also formally ‘practise’ leadership (California/Hawaii Public Health Leadership Institute Program, WHO Prolead) and programs where participants learn ‘about’ leadership only (all others). In the former, the programs tend to emphasise knowledge or technical skill development through structured learning activities that are highly goal-oriented, are trainer-designed, emphasise instruction and are underpinned by an assumption that a group of learners lack knowledge and skills in some key areas. In the latter, programs are highly applied and engage with real problems, situations and stakeholders.

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<sup>15</sup> Data on costs – of program elements and overall programs – were not able to be obtained in the time available, but would be a crucial aspect to investigate further.

<sup>16</sup> 30 organisations completed a postal survey and an additional 6 were involved in qualitative research.

Table 7. Selected leadership development initiatives

Provider	Program Title/ date initiated	Target group	Features/ Structure	Published program evaluation?
Leadership Victoria	Williamson Community Leadership Program	<p>Self-nominated individuals</p> <p>Above-average achievers who have 5-10 years of experience in the workforce</p> <p>Leaders in business, the arts, environment, welfare sector, unions, research, sport, agriculture</p>	<p><b>Program model:</b> 10 months program - 2 full days and one evening per month, culminating in an end-of-year retreat</p> <p><b>Strategic intent:</b> Develop and connect emerging leaders across sectors and generations</p> <p><b>Topics:</b> Past programs have covered topics such as creating a culture of innovation, developing a sustainable Australia, Australia in a globalised world, governing Australia in the 21st century, leading in a diverse community</p> <p><b>Elements:</b> Seminars from renowned leaders, field trips, case studies, end-of-year retreat</p> <p><b>Other activities:</b> Alumni that is supported and encouraged to maintain active involvement in developing the leadership capability of new cohorts</p>	<p>No evaluation reports located in the published literature</p> <p><a href="http://www.leadershipvictoria.org/">http://www.leadershipvictoria.org/</a></p>
Queensland Health	<p>Queensland Health Leadership Development Program</p> <p>(Published paper reporting short-term outcomes available)</p>	<p>Category 1: Clinical/non-clinical executives</p> <p>Category 2: Managers and supervisors</p>	<p><b>Program model:</b> 2-day residential workshops for clinical/non-clinical executives - based on action learning principles; 2-day non-residential workshop for managers and supervisors</p> <p><b>Skills sought:</b> individual reflection, art of listening, understanding the process of change, applying the factors of success in leading change, developing an action plan that leads to results, developing measurable results, creating a shared vision, creating a climate of hope and possibility, the importance of effective self-management and prioritisation, coaching your team for better results</p>	<p>Yes – impact evaluation Crethar et al (2009)</p>

			<p>and recognising your sphere of influence</p> <p><b>Topics:</b></p> <ul style="list-style-type: none"> <li>• 360 degree feedback tool (based on NHS Leadership Qualities Framework) for assessing leadership qualities</li> <li>• Personal action plans</li> <li>• Executive coaching</li> <li>• Online leadership learning modules – enhance understanding and application of qualities</li> <li>• Leadership website</li> </ul> <p><b>Indicators of success:</b> Absenteeism, formal grievances, bullying and harassment, consumer complaints, staff retention, recruitment (all were shown to be favourable in the follow up evaluation)</p>	
Tasmanian Health and Human Service Departmental Executive	Executive Leadership Action Learning Group (Published paper reporting short term outcomes available)	16 senior leaders from inside the state health department, the university, general practice and the community sector	<p><b>Program model:</b> Half-day meeting in 6–8 week intervals over 12–18 month period</p> <p><b>Strategic intent:</b> Encourage and speed the implementation of Tasmania’s Health Plan especially re integration between services. Several other workforce, system and organisational development strategies were also underway.</p> <p><b>Approach:</b> Open space methodology - Action learning – to establish networks of trust</p> <p><b>Topics:</b> Agenda set by group. Topics included values, personal leadership styles, social inclusion, motivating deeply cynical staff within organisations</p>	Yes - Process evaluation <a href="http://www.publish.csiro.au/paper/AH11022.htm">http://www.publish.csiro.au/paper/AH11022.htm</a>

University of New South Wales	LEAD Business Leadership Program	Select group: 60 postgraduate students	<p><b>Program model:</b> Intense one week program - series of workshops and a leadership residential camp</p> <p><b>Strategic intent:</b> Develop workplace skills and graduate attributes desired by top recruiters</p> <p><b>Leadership:</b> Develop leadership skills and enhance leadership potential</p> <p><b>Education:</b> Advance personal, professional and career potential</p> <p><b>Association:</b> Build personal and professional networks through association with other students and business community</p> <p><b>Development:</b> Build participants' self confidence and develop interpersonal skills.</p> <p><b>Modelled on:</b> Harvard University and Stanford University programs</p> <p><b>Workshop topics include:</b> Leadership and your Distinctive Brand; You as a Leader; NeuroLeadership; Power Communication for Leadership; Leadership and Internal Relationships and Effective Networking; Transformational and Change Leadership</p>	<p>Yes</p> <p><a href="http://www.asb.unsw.edu.au/currentstudents/studentlife/postgraduatestudentdevelopmentoffice/lead/Pages/LEADprogramstructure.aspx">http://www.asb.unsw.edu.au/currentstudents/studentlife/postgraduatestudentdevelopmentoffice/lead/Pages/LEADprogramstructure.aspx</a></p>
Durham University, UK	National Leading Improvement for Health and Wellbeing Program	<p>Directors from local authorities, including environmental health, education, police, fire service</p> <p>Directors of Public Health and public health specialists from Primary care Trusts (PCTs); leads</p>	<p><b>Program model:</b> 5 x 2-day residential learning events over one year period</p> <p><b>Principles:</b></p> <ul style="list-style-type: none"> <li>• Provision of link between theory and practice</li> <li>• Linkage of leadership with context</li> <li>• Recognition of the value of complexity thinking</li> <li>• Political astuteness</li> <li>• PDSA methodology</li> </ul>	<p>Yes</p> <p>Hannaway, Plsek &amp; Hunter (2007)</p> <p>Carr et al (2009)</p>

		<p>for Mental Health, Children &amp; Maternity Services, Prison Health; Strategic Regional Government Office;</p> <p>Public Health leads from voluntary organisations; leads from the Public Protection Agency; leads from NICE, Health Care Commission</p> <p>Lead from the Public Health Observatory</p>	<ul style="list-style-type: none"> <li>• Flexible, evolutionary, 'real-time' approach to program detail</li> <li>• Multidisciplinary and multi-level approach.</li> </ul> <p><b>Elements:</b> workshops, use of personal leadership diagnostic tools (optional 360 degree feedback, learning styles assessment); coaching feedback sessions</p>	
California/ Hawaii Public Health Leadership Institute	California/ Hawaii Public Health Leadership Institute Program	25 individuals from 12–20 health-related organisations per year	<p><b>Program model:</b> 3 x onsite learning retreats (7 days); 2 x 1-day regional meetings; 2 x leadership academies</p> <p><b>Strategic intent:</b> Develop a network of health leaders and organisations with the commitment and capacity to improve health equity by addressing the social determinants of health.</p> <p><b>Elements:</b> Health Equity Change project; action learning coaches; distance learning webinars; online social networking website</p> <p><b>Expected outcomes</b> (short term): Enhanced knowledge, skills and relationships to enable participants to effectively lead organisational change to reduce health inequalities in their communities or statewide; projects will influence their organisation's understanding of, and approaches to, reducing health inequalities; participants and their organisations deepen their relationships and</p>	Yes

			<p>communication with community organisations, other sectors, and policy makers in order to jointly address health inequalities, (long term) enhanced organisational capacity to improve health equity (e.g. community engagement methods, health equity data analysis and reporting, policy analysis and development, and use of innovative financing); support for successful policy change (in partnership with community-based organisations, health care and other sectors) enhanced state and local collaboration around health equity issues and approaches; improvements in health indicators in underserved populations</p>	
WHO	Prolead 2004 –	<p>Leaders in national governments (health department, other departments including planning, community development, education), health and other organisations in public, private and NGO sectors (participants nominated by national government, sometimes in consultation with WHO)</p>	<p><b>Program model:</b> 3 modules each of 3 to 5 days duration spread out over 9 months.</p> <p><b>Strategic intent:</b> Varies, for example, governance for health; autonomous financing and infrastructure for health promotion</p> <p><b>Topics:</b> Technical, political and personal skills required for leadership in health promotion – including stakeholder analysis, problem identification, solution generation, strategic planning to implement change, negotiation</p> <p><b>Elements:</b> Coursework, strategic change projects in area of significance for country, mentoring in support of project implementation by health promotion foundation or other (individual, organisation)</p>	<p>Yes – short term</p> <p>Paper available on request</p> <p>Descriptive paper: Fawkes and Lin (2005)</p> <p>Medium term evaluation underway</p>

## 5.3 Leadership development initiatives for changing or transforming systems

Beyond expanding a 'person's capacity to be effective in leadership roles and processes' (McCauley, Moxley & Van Velsor 1998, p. 25) the design of leadership development initiatives needs to account for ideas about the strategic leadership task they are expected to drive. In their paper on the implications of complexity theory for leadership research, Schneider and Somers (2006) argued that a shift from thinking about organisations as hierarchical, machine-like entities to viewing them as complex, adaptive self-organising systems means that the notion of leadership should also be re-conceptualised. That is, leadership should be concerned with changing systems and those involved in leadership 'need to be equipped with the insights and skills which will enable a complex adaptive systems improvement approach to become embedded and, in turn, allow transformational change to occur' (Hunter 2009, p. 203). The natural question flowing from this is: what does a leadership development initiative look like that seeks to drive system change or, indeed, system transformation?

In line with the concept of complex adaptive systems, a leadership development intervention may be considered an event in a system (Hawe, Shiell & Taylor 2009), a mechanism that instigates change or creates disruption in a context or a catalyst which deliberately disrupts the existing order of the system and contributes to the system performing differently and producing different and sometimes novel or surprising outcomes. Changes or actions directly catalysed by the initiative stimulate changes that unfold over time within the system and across actors (Van de Ven & Huber 1990) and build on one another. These ultimately have the potential to lead to fundamental shifts or unanticipated changes. Leadership development initiatives that are in large social systems would be expected to eventually be detectable at three levels of the system: individuals, organisations and networks, and community/society (Grove, Kibbel & Hass 2005).

## 5.4 Design guidelines for a leadership development initiative

In general, there are few comprehensive evaluations of leadership development programs to guide the design of a specific program. A scan of 55 leadership development programs in the US by Reinhelt, Foster and Sullivan (2002) has been a notable contribution to knowledge about the intent, design and outcomes (at individual, organisational, community and system levels) of leadership development programs. Similarly, an evaluation of programs enabled by the US-based National Public Health Leadership Institute (Umble, Baker et al 2011) identified program design features, successes and challenges across 15 years of leadership development work. The lack of insight from evaluation, particularly over the longer term and in different contexts, reflects in part the 'relative infancy' of leadership development initiatives (Alimo-Metcalfe & Lawler 2001). In general, evaluations tend to report short-term changes that may be associated with the program, especially changes in knowledge, skills and attitudes.

Given the applied nature of the task, developing leadership for system change is only partly an educational challenge. It is highly reliant on creating opportunities for in-depth social learning and recognises a variety of dimensions of leadership capability. While certain personal traits and attributes as well as content knowledge are relevant to leading change in systems, there is also a profound need for individuals and groups to have a high level of problem analysis and strategic thinking skills and, in particular, social skills (especially multi-level communication and cross-boundary/cross-organisational teamwork). McCauley, Moxley and Van Velsor (1998) described three facets of effective leadership development, each of which present challenges for the design of leadership development initiatives: development experiences, the ability to learn, and the organisational context.

Investigators who reviewed a Robert Wood Johnson Foundation program in the USA, Reclaiming futures: Communities Helping Teens Overcome Drugs, Alcohol and Crime, proposed that the best initiatives are those which are an integrated process, have solid support and which (Alimo-Metcalfe & Lawler 2001, p. 398):

have a strong action learning approach to development

use direct personal and business issues as the focus of activity and learning

encourage and expect participants to implement changes in their work environments during their participation in the initiative

have the strong support of senior management and the support of the participants' line managers.

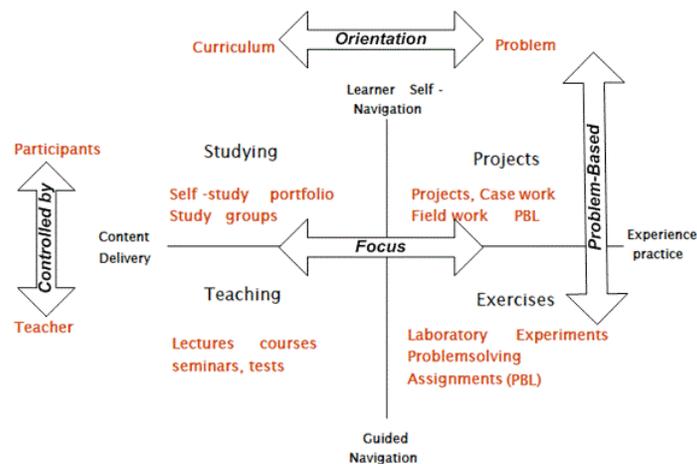
These characteristics are echoed in a number of other programs. They indicate the importance of an applied approach in leadership development, which connects the process of leadership development with real, tangible problems facing organisations, communities or other social systems in which they are located. (Interestingly, the investigators found that each of these features were difficult to achieve, especially (ironically) the provision of support to participate and mesh learning activities with issues and challenges with which their organisations were dealing.) From this, they concluded that leadership development needs to be appreciated as an organisation-wide philosophy rather than for a privileged few 'at the top'.) Insights from the literature into three key aspects of a program's design – approach, structure and program elements – are presented below.

### Approach

On the question of an overall approach to leadership development, peer reviewed (for example, Yeo 2007) and grey literature (for example, Lin & Fawkes 2006) indicate that there is considerable value in adopting a problem based learning approach that is controlled by the learner. Problem based learning (PBL) or action learning approaches (shown in the upper right quadrant of Figure 2) have been reported to have high value in leadership development. Yeo (2005, pp. 541–2) asserted that:

Problem based learning is a shift from the traditional didactic teaching where the core knowledge discovery process lies almost entirely in the hands of the learner rather than the teacher. The teacher who used to be the content expert now guides, advises and empowers the learner to take charge of his/her learning process. Learning is usually motivated by a real-life problem from which pertinent issues are identified, and potential solutions are discussed and explored.

**Figure 2: Learning strategies**



**Lauridsen (2012, p. 16) adapted from Bygholm (2009, p. 19)**

PBL is characterised by an 'interactive dynamism among learners' (Yeo 2007, p. 875). This provides assurance that the needs and objectives of the learner are front and centre, relevant, and promote a more effective and efficient gain in knowledge and skills (Wee 2004). Naming and confronting issues of ambiguity and complexity and collaborating with peer learners to examine and work with them are thought to escalate learning and personal development processes in leadership development programs.

The core elements of a PBL approach have been identified by Kolb (1984) as:

Phase 1: Reflective observation (problem analysis)

Phase 2: Abstract conceptualization (solution analysis)

Phase 3: Active experimentation (implementation analysis)

Phase 4: Concrete experience (situation analysis).

There is, of course, an unrecognised input to Phase 1 (problem analysis), and that is scoping, prioritising and selecting a problem to address. This is, in itself, a process that has potential to leverage significant gains in individual and group learning and leadership development.

These gains have been observed and documented for WHO Prolead, with Prolead Fellows reporting that using tools for situation assessment, stakeholder analysis, priority setting and strategic planning appeared to fast-track meaningful analysis, collaboration and planning because the ideas, expertise, experience and skills of group members are brought together in activities.<sup>17</sup> These benefits have also been identified in an empirical study of PBL by Yeo (2007).

### Structure

A structured and time-limited course, of varying duration, has been a commonly used model. Examples can be found of intensive one-week programs through to programs run in modules over one or more years. Given that participants benefit from gaining experience, developing their thinking around various challenges and engaging in proper reflection (Bass & Bass 2008), short courses are not regarded as an appropriate structure. Indeed, if leadership development is viewed as a longer-term project that aims to build team-based or collective leadership and develop people's capability to bring about change in a complex adaptive system, then suitable high-value elements need to be combined to build leadership capability and behaviour **over time** within the system. Programs such as the UK National Leading Improvement for Health and Wellbeing Program (Carr et al 2009) and WHO's Prolead both comprise modules that are implemented over several months because participants need time (as individuals and teams) to accrue, think about, debate and apply ideas and new knowledge. If PBL is incorporated in a program, adequate time is required for participants to develop, test and evaluate an initiative over a longer period (Yeo 2007).

### Program elements

Elements that have been combined in various leadership development programs are represented in Table 8. This table draws on data about leadership development programs and the work of Day (2000)<sup>18</sup>. In his review of leadership development initiatives and processes, Day called these elements 'leadership practices' and scoped a number of practices, identified the target of their development, discerned whether the element was oriented to human capital or social capital, and nominated their strengths and weaknesses.

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<sup>17</sup> This information was drawn from a draft evaluation report under development by Fawkes and Lin at the time of writing.

<sup>18</sup> The tabulation of these practices can be found in Day 2000, p. 588

**Table 8. Possible elements of a leadership development program**

Element	Strengths +/- weaknesses -
360 degree feedback tool (based on NHS Leadership Qualities Framework) for assessing leadership qualities	<ul style="list-style-type: none"> <li>+ Recognises that a person operates within a system and interacts with people at all levels</li> <li>+ Prompts conscious thinking about, and development of, personal attributes, skills and behaviour</li> <li>- Produces overwhelming amount of data but no guidance on how to change</li> <li>- Considerable time and effort required</li> </ul>
Online leadership learning modules – enhance understanding, application of qualities	<ul style="list-style-type: none"> <li>+ Provides opportunity for flexible learning, self-paced learning, repetition, reflection</li> <li>- Requires access to hardware and software</li> <li>- Some computer capability required</li> </ul>
Problem-based learning - Action learning	<p>(Core strategy for leadership development, supporting processes for deep learning)</p> <ul style="list-style-type: none"> <li>+Tied to business/strategic imperatives</li> <li>+ Action oriented</li> <li>- Time intensive</li> <li>- Leadership lessons not always clear</li> <li>- Overemphasis on results</li> </ul>
Leadership website	<ul style="list-style-type: none"> <li>+ Provides a tool for continuous learning, discussion/debate</li> <li>+ Reinforcement of identity in leadership activities</li> <li>+ Accessible across locations</li> <li>+ Low user cost</li> <li>- Requires minimum standards of computer literacy</li> </ul>
Community of learning or community of practice	<p>Form of ongoing social learning system that can operate in various sectors and at various levels of scale - local communities, single organisations, partnerships, networks, cities, regions. Has three main elements: domain, community and practice.</p> <ul style="list-style-type: none"> <li>+ Enables people at similar or varying levels to make connections across formal structures. The <i>domain</i> would be leadership for prevention; the <i>community</i> would include those leading organisational and community systems change; and the <i>practice</i> would be about experiences with organisational and community system change to embed prevention across sectors.</li> </ul>
Mentoring/coaching	<ul style="list-style-type: none"> <li>+ An advising/developmental relationship, usually with more senior manager</li> <li>+ Strong personal bonds can develop</li> </ul> <p><i>Could be drawn from the same or different sectors and</i></p> <ul style="list-style-type: none"> <li>- Peer jealousy may arise</li> </ul>

<i>environments</i>	- Potential overdependence
Secondments/exchanges	+ Provides opportunities for gaining skills and knowledge + Exposure to organisations with different geographic locations priorities, cultures, work practices, understandings and thus enhance critical perspectives
Involvement in other activities	Webinars, conferences, meetings, decision making simulations (such as rubber windmill exercises), additional training e.g. foresight/futures studies

## 5.5 A proposed model for a Leadership for Prevention Initiative

Table 9 sets out some proposals for key success factors to underpin a leadership development initiative to change, or transform, a system<sup>19</sup>. A number of these factors have been central to the WHO Prolead program, and their role is currently being investigated through a La Trobe University research project.

**Table 9. Proposed model for a Victorian Leadership for Prevention Initiative**

Domain	Include	Avoid
Strategic intent	Enable leadership to emerge, be developed and sustained within the Victorian Prevention System	Training of individuals in leadership positions only
Focus	Leadership for prevention across a system comprising organisations, sectors, settings	Health sector only
Principles	Prevention system is a complex adaptive system Shared or collective leadership – vertical and horizontal A leadership development initiative is a mechanism that disrupts a system to bring about change	Thinking about the prevention system as a mechanical, linear system that delivers technical interventions and services
Structure	One-year structured program comprising three multi-day modules Follow up - essential: continuous exposure to learning opportunities and support	One-off program Inadequate time for working relationships to properly develop across participant group
Components	Multi-element program 360 degree feedback tool Team-based project focused on a high value strategic issue Online leadership learning modules Structured program of workshops for gaining knowledge, individual and team skill development (e.g. managing knowledge across a system), reflection, discussion	Reliance on didactic approaches that primarily aim to transfer knowledge

<sup>19</sup> The development of a proposed model is not required by the brief, however, it represents one way to bring together findings from the review.

	Continued learning e.g. Community of practice, Peer to peer support Mentoring/coaching	
Participants in each program	The LGA Prevention teams People from health and other key sectors related to social and environmental determinants of health who have roles as leaders in groups, organisations, networks, companies People who emerge as leaders from any level, field	Health sector leaders/managers only
Other	Exposure to state, national and international learning opportunities via conferences, webinars	

## 5.6 Conclusion

A distinction between **leader** development and **leadership** development is pivotal to designing a leadership development intervention. The former emphasises human capital - individual attributes and capabilities – as a basis for increasing **intra**personal competence. The latter emphasises social capital - mutual obligations, commitments, trust and respect – as a basis for strengthening **inter**personal competence. Both approaches are necessary as leadership is a complex relationship between individuals and the environments in which they operate (for example, organisations, settings, communities).

The strategic intent, program model, learning and experiential components and content of leadership development programs have been as varied as the sectors and contexts in which programs have been implemented over the last 30–40 years. Leadership development programs have often been based on a deficit-reduction model, where gaps in knowledge, skills or personal performance are assessed and the program seeks to correct these ‘deficiencies’. An alternative is to adopt an asset-enhancing approach that builds on positive emotions and behaviours and existing knowledge and skills. Continuing investments in learning strategies, rather than on-off programs, are needed to develop these capabilities.

A variety of elements are typically combined into a leadership development program. There is little evidence to indicate which elements, and combinations of elements, are beneficial for developing leadership. Each plays a distinct role in learning by, for example, expanding cognition or skills, or exposing people to novel or ambiguous situations where decisions must be made. PBL and problem solving tasks undertaken in workshops, action learning projects and mentoring/coaching (if conceptualised appropriately and executed well) have proven high value because of their ability to foster team-based leadership, critical thinking and strengthening of analytical and decision-making capabilities. Over and above the design of an initiative, organisational research indicates that ‘consistent and intentional’ (Day 2001) implementation of an initiative is critical, as is opening up the initiative throughout the organisation, ensuring the initiative has strategic purpose in relation to the organisation’s goals, and employing a practice-to-theory learning model (starting where the participant or group is). These principles are likely to also have relevance to developing leadership in communities.

# 6. Summary

This project sought to complete a review of the literature in order to address three questions:

How can systems be changed to bring about different outcomes?

What is the role of leadership in changing systems?

What options are available to the Victorian Department of Health Prevention and Population Health Branch to develop leadership for systems change in the Victorian context?

A strong orientation has developed in the literature over the last decade to theoretical papers that draw on and explain concepts of complexity found in physics, biology and mathematics, and interpret them in relation to organisations, settings, communities and larger social systems. Through the conceptual work of Marion, Uhl-Bien, Plowman and Lichtenstein in particular, the potential to apply complex adaptive systems theory to more fully explain what happens in these social systems, and the role of leaders and leadership, is being explored. It would appear that people in leadership roles are observing diminishing impacts from traditional approaches to improving organisational and system performance from the top down, having relied on introducing new rules, symbols, ways of doing things or alignments between staff and roles to make a difference. New leadership theories are emerging that emphasise new ways of thinking about both context and leadership functions.

Key findings of the review may be summarised as follows.

Systems can be changed to bring about different outcomes by introducing a disturbance to the system. This may be an event, mechanism or intervention of some form that drives enough of an alteration to the way components in the system are connected and interact that the system as a whole develops different properties.

Leadership is essentially about influence. People involved in leadership influence agents, or components, of a system and the ways in which they interact in order to alter the behaviour of a system. Empirical evidence indicates that leadership can emerge from anywhere in a system (from those with formal leadership positions and others). As such, the role of leadership has greater relevance to changing a system than the role of a single leader. The role of leadership is to:

- disrupt existing patterns
- create and highlight/surface conflict by encouraging new agents in the system or highlight conflict among existing agents (to prompt learning)
- acknowledge/embrace uncertainty in the nature of problems to be solved and how to solve them
- encourage innovation
- establish simple rules to guide decision making – for example, who has influence here? what is essential to preventing this from occurring in the next generation?
- encourage people to gather ('swarm') in order to solve problems
- promote interactions between agents (for example, to share information, resources, questions, failures/successes) without expectation of outcome
- interpret external and internal conditions and events and act as a 'sense-maker', especially during times of rapid and disorienting change
- foster shared understanding (of a problem, the identity and role of an organisation) to produce coherence by paying attention to language
- accept the role of directing attention to what is important and what things mean.

It is important for those seeking to change a system to ground their efforts on an appreciation of the nature of the whole system and its components and their interactions in order to develop ideas for 'events' or interventions that might be able to bring about change. [Note: the field of social entrepreneurship was arrived at late in the review and there was inadequate time to properly scope and interpret the concept and evidence of its effects. Leadership to develop social entrepreneurship offers a potentially rich area to investigate in designing the Victorian Leadership for Prevention Initiative.]

The state and local level leadership task may be thought about as valuing and tapping into the existing components of a prevention system and enabling leadership to emerge that will evolve a system for prevention. The full spectrum of components within a system may not be known at the start of this process so part of the leadership task will be to map existing components and the relationships between them and consider what mechanisms might drive the system to be prevention-oriented. One mechanism that has been shown to be useful in bringing about systems change is a leadership development initiative. If pursued, this should be based on cutting edge thinking about what leadership is, who leaders in a system are, and what features have been shown to be important for developing leadership throughout the system.

The Victorian Department of Health Prevention and Population Health Branch has a number of options for a Leadership for Prevention program model. Some key elements that could be combined are represented below. This program could be run in each LGA to foster local level leadership for prevention. There are significant opportunities for activities to drive leadership across LGAs.

**Table 10. Proposed model for a Victorian Leadership for Prevention Initiative**

Domain	Include
Strategic intent	Enable leadership to emerge, be developed and sustained within the Victorian Prevention System
Focus	Leadership for prevention across a system comprising organisations, sectors, settings
Principles	Prevention system is a complex adaptive system Shared or collective leadership – vertical and horizontal A leadership development initiative is a mechanism that disrupts a system to bring about change
Structure	One year structured program comprising three multi-day modules Follow up - essential: continuous exposure to learning opportunities and support
Components	Multi-element program 360 degree feedback tool Team-based project focused on a high value strategic issue Online leadership learning modules Structured program of workshops for gaining knowledge, individual and team skill development (for example, managing knowledge across a system), reflection, discussion Continued learning, for example, Community of practice, Peer to peer support Mentoring/coaching
Participants in each program	LGA Prevention teams People from health and other key sectors related to social and environmental determinants of health who have roles as leaders in groups, organisations,

	networks, companies People who emerge as leaders from any level, field
Other	Exposure to state, national and international learning opportunities via conferences, webinars

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# 8. Appendices

## APPENDIX 1

The brief and the search strategy

Topic: Leadership for systems change

### **Purpose and audience**

This review of the literature was commissioned by the Victorian Department of Health to inform an innovative approach to developing 'leadership for prevention' in Victoria.

Literature in a range of fields was searched using several key search terms<sup>20</sup>. Insights were identified in relation to three key areas: changing the characteristics of systems; the role of leadership in bringing about change in systems; and interventions for developing leadership that transforms systems.

### **Review questions**

How can systems be changed to bring about different outcomes?

What is the role of leadership in changing systems?

What options are available to the Victorian Department of Health, Prevention and Population Health Branch to develop leadership for systems change in the Victorian context?

### **Search strategy**

Key words: leadership, transformational leadership, complex systems, emergence, leadership development

Databases: ABI/INFORM Global, ProQuest Central, ProQuest Health and Medical Complete, ProQuest Social Science Journals, APAFT (Informit), Business Source Complete (EBSCO), Emerald Fulltext (Emerald), Expanded Academic ASAP (Gale), Informit Business, Management: & Organisation Studies: SAGE, SAGE Journals Online, Science Direct (Elsevier), Sociological Abstracts (CSA), Web of Science (ISI), Wiley Online Library, GOOGLE SCHOLAR, GOOGLE

<sup>20</sup> 'leadership', 'collective leadership', 'organisational change', 'complexity science', 'complex adaptive systems', 'systems change', 'system transformation', 'emergence'



## Improving Victorians' health and wellbeing

September 2011

health

### Building the Victorian Prevention System

Australia has one of the best health systems in the world, but it is under pressure from a rapidly growing and ageing population, and increasing prevalence of preventable chronic diseases. In particular, an increase in people being overweight or obese is associated with worrying health trends in diabetes, cardiovascular disease, osteoarthritis and some cancers.

We can significantly reduce chronic disease by promoting healthy lifestyles and improving the environments in which people live and work. Programs for individuals are useful, but their benefits are often only short-term. To achieve sustained reductions in the growth of preventable chronic diseases, and to create lasting improvements in the health and wellbeing of people and communities, we need a prevention system that is coordinated, responsive, sustainable, and that complements our healthcare system.

Victoria is developing such a system. The *Victorian Prevention System* builds on the best available evidence, current strengths in preventive health, and a strong partnership approach. It will provide a solid foundation to meet our future challenges.

#### A national partnership

The Commonwealth Government has allocated funding over four years (2011-2015) through the National Partnership Agreement on Preventive Health (NPAPH) to help slow the growth of lifestyle-related chronic disease in Australia. A range of initiatives to promote healthy behaviours will be delivered in Victoria through our prevention system, supported by a significant investment by the State Government. Programs will be rolled out in early childhood settings, schools, workplaces and communities. They will specifically target the underlying causes of chronic disease including smoking, poor nutrition, alcohol misuse and physical inactivity.

The Commonwealth will develop the infrastructure to support, monitor and evaluate the progress of these initiatives across the states and territories:

- **Healthy Children** – policies and programs to increase physical activity and improve intake of fruit and vegetables in early childhood settings and schools.
- **Healthy Workers** – workplace health programs to decrease the rate of people being overweight or obese, increase physical activity and intake of fruit and vegetables, support people to cease smoking, and reduce harmful levels of alcohol consumption.
- **Social marketing** – a national, integrated social marketing program to raise awareness of and encourage healthy lifestyle choices, supported at the local level by states and territories.

*The Department of Health is redesigning its approach to preventive health to slow the growth of lifestyle-related chronic disease in Victoria.*

Department of Health

## Building the 'Prevention System'

*Reducing the chronic disease burden and maximising health and wellbeing requires a consistent, long-term approach - not quick fixes. We need an innovative and sustainable prevention system.*

Just as the treatment and management of illness demands a comprehensive and integrated system of care, so too does preventive health. The *Victorian Prevention System* is based on a solid and sustainable foundation that includes building on:

- **Workforce** – a responsive, linked and coordinated workforce with leverage across the determinants of health, not just 'traditional' public health areas
- **Information** – the production, analysis, dissemination and use of reliable and timely information on health, program evaluation and system performance
- **Financing** – strategic finance and resource management and allocation for prevention
- **Leadership** – strategic policy frameworks combined with effective oversight, coalition building, accountability, regulation, incentives and attention to system design
- **Partnerships** – dynamic relationships for working together and sharing resources, information and lessons.

### *Statewide investment*

Statewide investment will focus on system building, reform and policy to support the delivery of interventions, such as social marketing, a new interactive web presence for prevention and the new Healthy Eating Advisory Service. The state will also develop models and policies to promote health across schools, workplaces and community settings.

### *Community action*

The Victorian approach focuses on supporting local government authorities (LGAs) and community health agencies to partner via local networks. This Prevention Community Model will fund 12 local consortia (prevention areas) consisting of 14 LGAs and community health agencies. Partnership agreements will reflect local infrastructure, networks, programs and planning processes to ensure we achieve the greatest possible impact. Importantly, these LGAs will be supported to deliver prevention in alignment with their responsibilities under the *Public Health and Wellbeing Act (2008)* to deliver Municipal Public Health and Wellbeing Plans.

*Intense work with over 40 different communities across the prevention areas will aim to improve health and reduce health disparities in identified high needs areas.*

In the 12 prevention areas, existing health promotion efforts will be strengthened through alignment to the new prevention system and access to:

- a significant new prevention workforce and a workforce development strategy

- tailored interventions at the community level, including significant funding to implement healthy living programs
- support for the implementation of health promoting policies in schools and workplaces
- community level and statewide health promotion networks
- support for the establishment of local partnerships for health
- innovation in community engagement and social marketing
- research and evaluation support via the newly established Centre of Excellence in Intervention and Prevention Science (CEIPS).

Local partnerships will build Victoria's Prevention System from 2011 to 2014–15, with staged system development continuing as new areas and prevention issues become incorporated.

### A 'Whole of Government' approach to prevention

The Victorian Government's new *State Public Health and Wellbeing Plan* provides a blueprint for developing the *Victorian Prevention System*. It is designed to ensure all government investments in prevention are strategically aligned and incorporate:

- the NPAPH and Victoria's implementation plan
- existing programs, structures and processes
- evaluation and research.

### Evaluation

A key feature of the NPAPH is the establishment of infrastructure to monitor and evaluate the progress of the key components of the partnership. The Australian National Preventive Health Agency will support the development of evidence and data on preventive health in Australia and the effectiveness of preventive health interventions, and will establish national guidelines and standards to guide preventive health activities.

The Victorian Government recently established the Centre of Excellence in Intervention and Prevention Science (CEIPS) to support Victoria and its local governments in assessing the success of their prevention efforts in communities, and to rapidly feed this back so that improvements can be made quickly. This knowledge, combined with expertise available through our partnerships with universities, will ensure that existing evidence and emerging theory are integrated into all aspects of the Victorian prevention system.

### For more information:

#### Factsheets

Promoting health at the community level  
 Promoting a healthy workplace  
 Promoting children's health  
 Healthy Eating Advisory Service  
 Centre of Excellence in Intervention and Prevention Science

#### Websites

About the Department of Health's work in prevention: [www.health.vic.gov.au](http://www.health.vic.gov.au)  
 About the National Partnership Agreement on Preventive Health: [www.coag.gov.au](http://www.coag.gov.au)

#### Contact us

Prevention and Population Health Branch: telephone (03) 9096 1487 or  
 email: [prevention@health.vic.gov.au](mailto:prevention@health.vic.gov.au)

[www.health.vic.gov.au/prevention/healthytogether](http://www.health.vic.gov.au/prevention/healthytogether)

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