

Policy Brief:

# Systems Thinking for Health



ANTICIPATORY  
CARE PROJECT



The Anticipatory Care Action Learning Project research team acknowledges the palawa people of lutruwita upon whose lands we have conducted our research.

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The research reported here was produced by a collaboration between the lead organisations and communities of the four project sites, the Tasmanian Government Department of Health, the University of Tasmania, and the Australian Prevention Partnership Centre. The report was prepared by the University of Tasmania Anticipatory Care research team: Dr Susan Banks, Dr Robin Krabbe, Ms Miriam Vandenberg and Ms Thérèse Murray. We wish to thank Professor Richard Eccleston, Dr Therese Riley, Ms Flora Dean, and Ms Sarah Hyslop for their insights and support throughout the project.

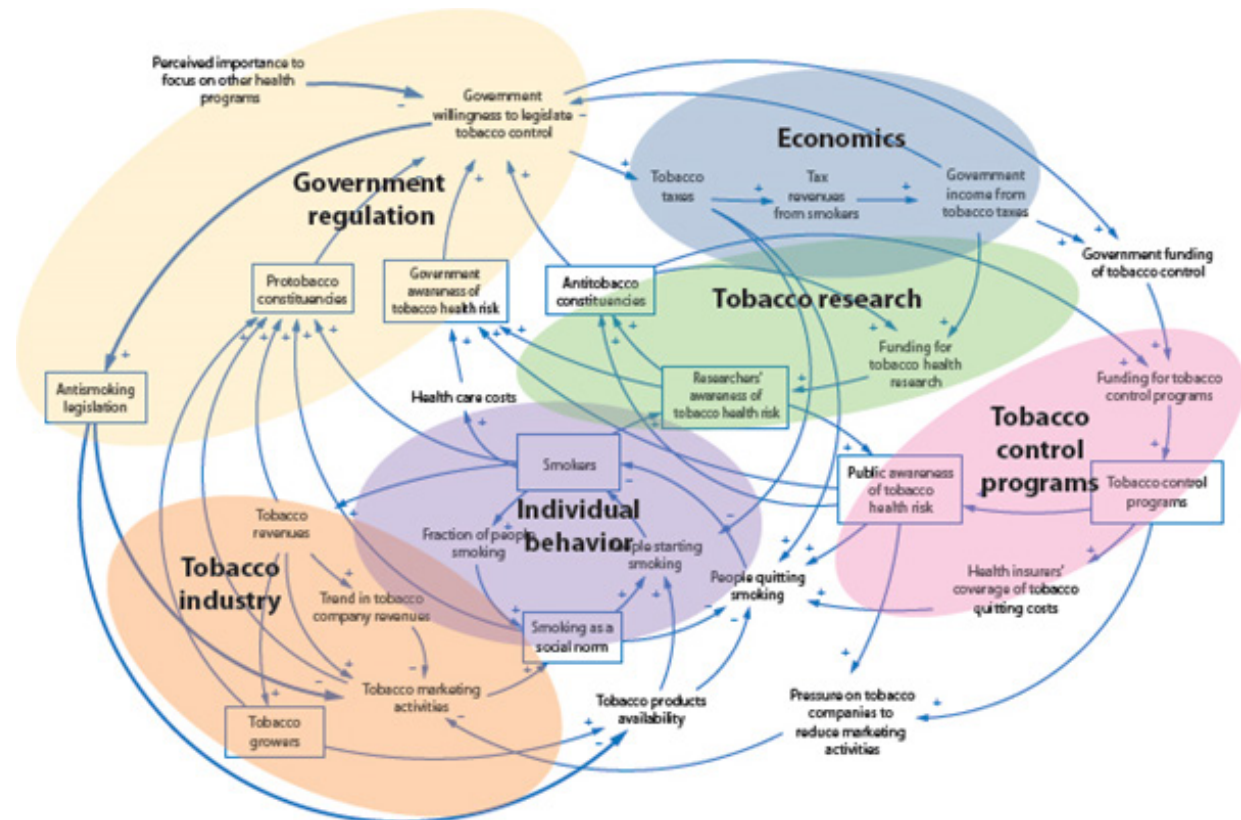
# Chronic disease prevention as a complex health problem

Chronic disease prevention, infectious disease pandemics (e.g., COVID-19) and the impacts of climate change are all examples of **complex public health problems**. Complex public health problems have multiple, layered and interconnected causes and outcomes.

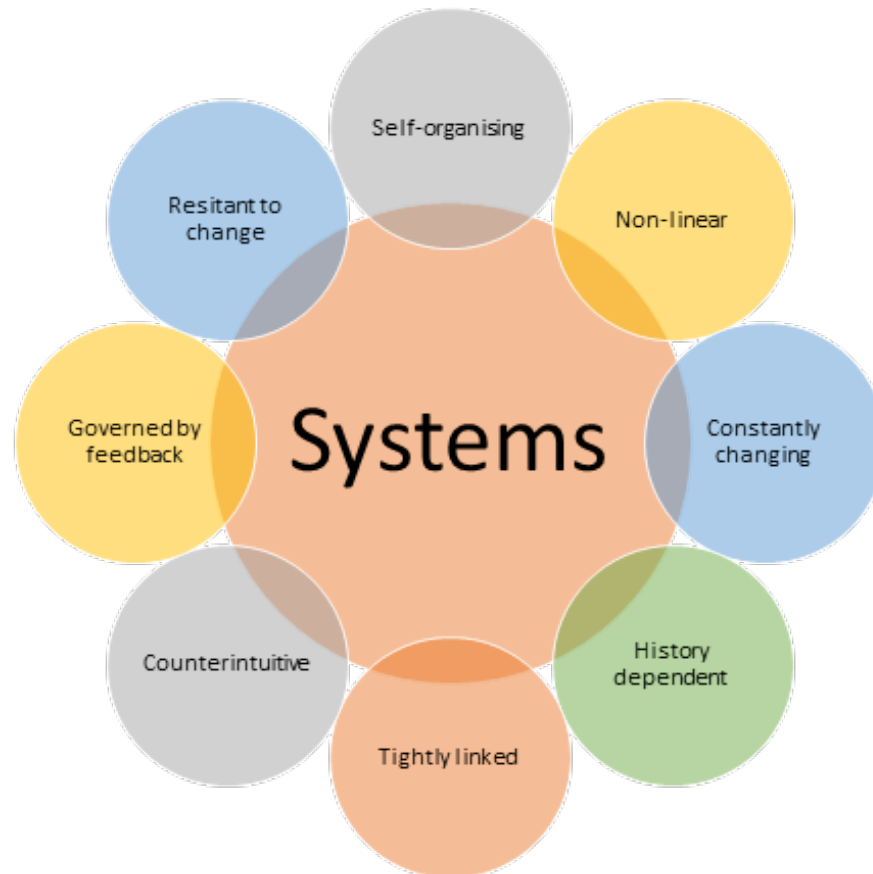
Increased recognition of the **social determinants of health** reflects the growing understanding of complex public health problems. The social determinants of health are the conditions in which people are born, grow, work, live and age; and include the wider political systems, policies, agendas and norms, which shape the conditions of daily life.<sup>1</sup> These determinants are the underlying causes of poor health, varying across time and accumulating throughout the life course.<sup>2</sup>

**Figure 1** is a visual representation of smoking as a complex public health problem and illustrates how government regulation, the tobacco industry, economics, research, tobacco control programs and individual behaviour interact to create a **system** around the health problem of smoking.

Complex problems require innovative, multidisciplinary and comprehensive approaches to understand and address that complexity, and **systems thinking** is an approach that can help.<sup>3</sup>



**Figure 1: The system surrounding the health problem of smoking<sup>4</sup>**



**Figure 2: Systems Thinking: Common systems characteristics<sup>5</sup>**

In relation to health, a system includes all “organizations, people and actions whose primary intent is to promote, restore or maintain health.”<sup>6</sup> Systems behave as a series of events over time and are shaped by the different components shown in **Figure 2**.<sup>7</sup>

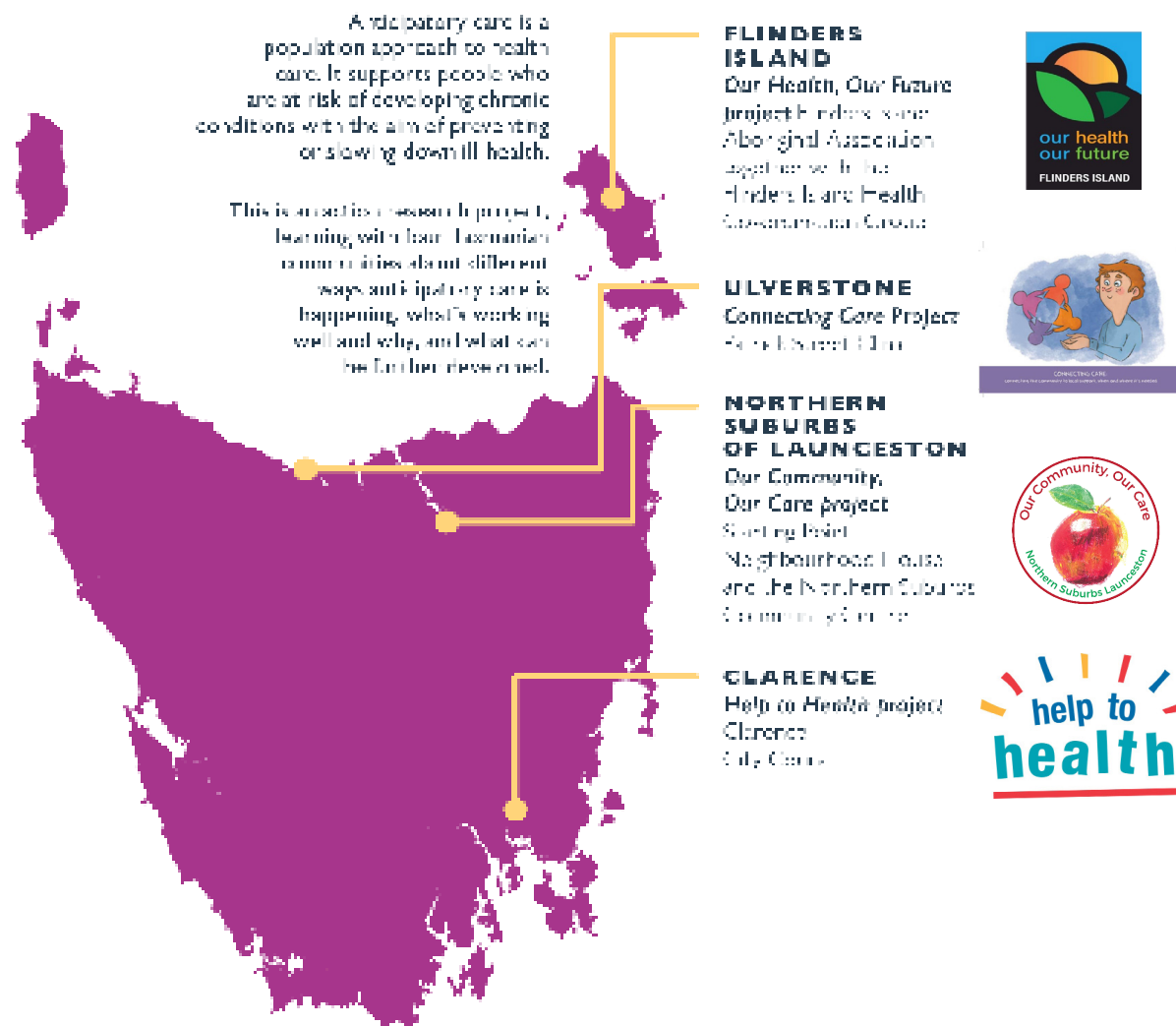
Systems Thinking is a powerful tool that can help decode and analyse complex public health problems. Systems approaches can then be applied to designing better solutions to strengthen health systems and improve community-level health and well being.<sup>8</sup>

Systems Thinking processes allow us to uncover the multiple perspectives and recognise shared priorities and goals. On this foundation, ongoing cycles of acting, reflecting and learning support the identification and adaptation of actions designed to strengthen local systems and respond to change and, over time, deliver improved health outcomes.

# The Anticipatory Care Action Learning Project

Chronic disease is a major cause of ill-health and avoidable hospitalisations in Tasmania, and this burden is not equitably distributed.<sup>9</sup> Chronic disease is linked with the social determinants of health: risk is reduced when people have reliable access to economic resources, secure and good quality housing, good diet, hygiene, health services, social networks and education. We need to reduce the risks for chronic illness and find better ways to manage existing conditions to keep people well.

Anticipatory care is an approach that identifies who is at risk of developing an illness and works to improve their current and future health. An effective anticipatory care system relies on a combination of accessible, locally-appropriate services and facilities, and collaborative, trusting relationships between services and between services and citizens.<sup>10</sup> Effective anticipatory care may reduce the use of expensive health and social services.<sup>11,12</sup> The Anticipatory Care (AC) Action Learning Project (2018–2020) used a Systems Thinking approach to explore whether building a more effective local anticipatory care system could start to address this problem, in four Tasmanian sites (see **Figure 3** for the locations of the sites).



**Figure 3: Map illustrating the four Anticipatory Care Project sites**

# Research findings and insights

## Be prepared to let go and do things differently

Systems Thinking is most useful when stakeholders are open to finding the best way to address public health problems, and are prepared to rethink the way different parts of the system interact and influence one another. Systems Thinking can help identify potential points for intervention and change. In some cases, this may mean scaling up what works, but it is also likely to involve changing established ways of doing things. Systems Thinking challenges us to think in a critical way about “**what works, for whom and under what circumstances.**”<sup>8</sup> It can help practitioners to identify more precisely where some of the true blockages and challenges lie.

In the Anticipatory Care Project, we found that Systems Thinking worked best when communities worked together to understand the many and varied stakeholders in the system, to brainstorm what the system looks like, and to conceptualise the effects of actions and processes on the system.

## Collaboration is key

Working collaboratively with stakeholders from a range of sectors is central to Systems Thinking. Many of the factors that influence health lie outside of the health system, and therefore ongoing dialogue between stakeholders—communicating, sharing and collective problem-solving—is essential to strengthening the system.

In the Anticipatory Care Project, we found that sector diversity among stakeholders was beneficial for identifying system parts and understanding the behaviour of these parts in relation to each other. Communities that collaborated with a range of stakeholders were more effectively able to question existing approaches and start the process of thinking about how to tackle some of the harder issues.

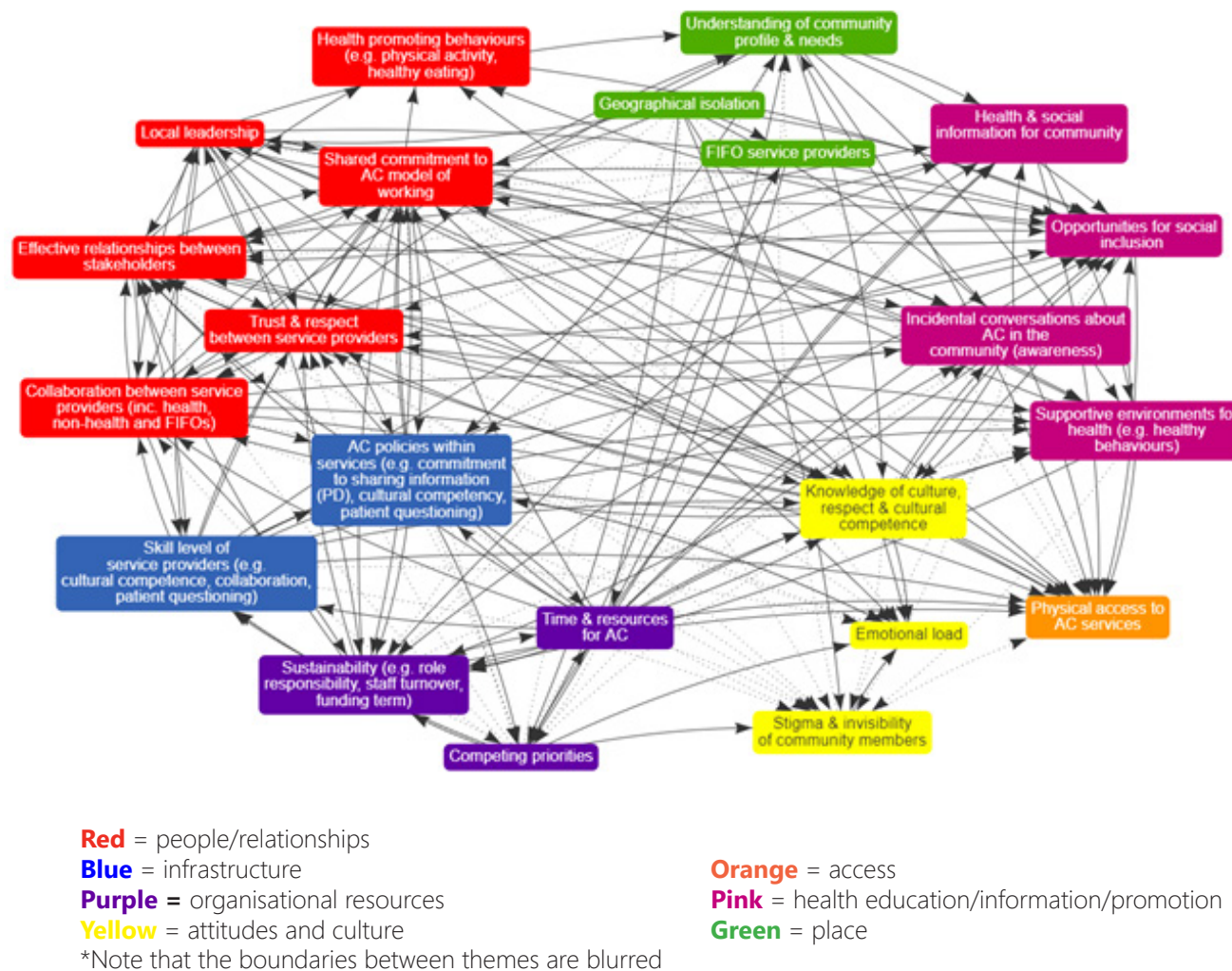
### Case study: Our Health Our Future on Flinders Island

On Flinders Island we worked with community members and Aboriginal, health, education and community organisations to understand what the anticipatory care system ‘looked like’. Together, we developed a deep understanding of the system, and identified both barriers and enablers to chronic disease prevention.

Based on insights into how the system behaved, we identified strategic opportunities to intervene. Local practitioners applied the Systems Thinking tools to their work in the project, which they called Our Health Our Future; they acknowledge the strengths for creating locally-driven solutions.

Through this process, the project team was able to develop actions to help address social norms, stigma and racism, and the challenges associated with their remote location. These included alcohol risk awareness, cultural competency training and new collaborations between service providers. Through Systems Thinking processes we were able to identify early signs of positive change.





**Figure 4: Flinders Island causal loop diagram,**

The diagram was developed with the Flinders Island Our Health Our Future team and depicts a summary of the key components of the anticipatory care system on Flinders Island. We can see that there are many connections, and literally thousands of loops linking different parts of the AC system.

## Systems Thinking and action learning

Action research is an approach to research that emphasises collaboration, co-design and action. Systems Thinking complements the action research principles of “developing collaborative, equitable partnerships, promoting capacity building and co-learning among all partners, disseminating results to all partners and involving all partners in the dissemination process”.<sup>13</sup> Systems Thinking provides opportunities for social learning; continually learning about the system is necessary because systems react to action, adapting and evolving over time.

We used action research principles in the four Anticipatory Care Project sites. Action research helped us to understand these distinct anticipatory care systems, and to rethink approaches to chronic disease prevention. The approach also enabled communities to build a shared ownership of the system, direct initiatives at the underlying causes of health problems, and realise how small shifts in practice can have profound system effects.

### We can't do it without resourcing and capacity building

Systems Thinking in public health has gained increasing recognition over the past 10 years but its application at the community level is still developing. Embedding Systems Thinking as a norm in the design and evaluation of public health strategies and interventions will require ongoing, appropriate levels of resourcing. Resourcing can enable designated staff to provide Systems Thinking leadership within communities and drive this agenda towards more systemic and evidence-informed developments for better health. Importantly, resourcing also relates to the knowledge and skills needed to implement a Systems Thinking approach, which may already exist in the community or require investment in capacity building.

In the Anticipatory Care Project, we found that Systems Thinking worked best when communities were given dedicated resources to take a Systems Thinking approach. We also found that organisations and workers with a prior commitment to addressing the social determinants of health and health inequities were more ready to work in this way. A Systems Thinking approach by its nature requires new and more sophisticated approaches to funding and evaluation which emphasise collective impacts and longer-term community outcomes.



**Figure 5: Members of the Flinders Island Our Health Our Future project team**



# Policy implications

The Tasmanian Government is at the forefront of investing in new approaches to the prevention of chronic disease, informed by research and translation methods developed with the University of Tasmania. In light of this, we recommend that the follow principles should inform the development of policies designed to address complex health challenges in our community.

- An authorising environment is necessary in which:
    - Place-based governance is emphasised; the funder sets broad strategic goals (e.g., 'improve health and well-being in our community') and allows communities to define their own priorities and measures of success, according to their definition of the 'problem'<sup>14</sup>
    - The funding, contracting and project design environment explicitly values and supports a Systems Thinking and action learning approach
    - There is recognition of the ongoing work required to build and sustain relationships, i.e., the network of connections within the project team (as broadly understood) and between different parts of the system
  - A network of relationships is necessary in which:
    - Multiple perspectives are present, recognised and valued; tackling complex public health problems requires transdisciplinary and intersectoral teams
    - Trust is developed through shared effort
    - Risks are identified and managed collectively
    - Power, decision making, and expertise are decentralised and shared
    - Work is done to identify shared priorities and goals
  - An action learning approach is necessary in which:
    - There are cycles of observing, reflecting, planning, and acting
    - The cycles take place simultaneously and at various scales across initiatives
    - Multiple forms of knowledge and evidence are valued and incorporated
    - There is time for multiple cycles
  - Capacity building is necessary in which:
    - A learning culture is operating and fostered across all partners
    - Local knowledge and strengths are acknowledged and built on
    - All partners are supported to acquire skills and knowledge of the application of Systems Thinking tools and methods
- Initiative, design and implementation emerge from these processes.

- <sup>1</sup> World Health Organization (WHO). (n.d.). Social determinants of health. Retrieved from <https://www.who.int/gender-equity-rights/understanding/sdh-definition/en/#:~:text=Social%20determinants%20of%20health%E2%80%93The,global%2C%20national%20and%20local%20levels>
- <sup>2</sup> Toivanen, S., & Modin, B. (2011). Social determinants of health at different phases of life. *Int J Behav Med*, 18: 1-4.
- <sup>3</sup> Leischow, S. J., Best, A., Trochim, W. M., Clark, P. I., Gallagher, R. S., Marcus, S. E., & Matthews, E. (2008). Systems thinking to improve the public's health. *Am J Prev Med*, 35(2 Suppl), S196-203. doi:10.1016/j.amepre.2008.05.014
- <sup>4</sup> Luke, D., 2013. 'Systems science and tobacco control.' Presentation at 13th annual American Academy of Health Behavior Scientific Meeting, March 17-20, 2013, Santa Fe, NM. <http://aahb.wildapricot.org/Resources/Documents/Luke%20AAHB%202013%20Tobacco>
- <sup>5</sup> Information adapted from de Savigny, D., & Adam, T. (Eds.). (2009). *Systems Thinking for Health Systems Strengthening*, Alliance for Health Policy and System Research. Geneva: WHO, p. 40.
- <sup>6</sup> World Health Organization (2007). *Everybody's Business: Strengthening health systems to improve health outcomes: WHO's framework for action*, 2007, Geneva: WHO.
- <sup>7</sup> World Health Organization (2010). *Monitoring the building blocks of health systems: A handbook of indicators and their measurement strategies*. Retrieved from [https://www.who.int/healthinfo/systems/WHO\\_MBHSS\\_2010\\_full\\_web.pdf?ua=1](https://www.who.int/healthinfo/systems/WHO_MBHSS_2010_full_web.pdf?ua=1)
- <sup>8</sup> de Savigny, D., & Taghreed, A. (Eds.). (2009). *Systems Thinking for Health Systems Strengthening*, Alliance for Health Policy and System Research. Geneva: WHO.
- <sup>9</sup> Department of Health (2019). *The State of Public Health Tasmania 2018*. Hobart, TAS: Department of Health, Tasmanian Government.
- <sup>10</sup> Watt, G., O'Donnell, C., & Sridharan, S. (2011). Building on Julian Tudor Hart's example of anticipatory care. *Primary Health Care Research & Development*. doi:10.1017/S1463423610000216
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- <sup>13</sup> Israel, B. A. (2012). *Methods for Community-based Participatory Research for Health*. (2nd ed.). San Francisco, CA: Jossey-Bass.
- <sup>14</sup> Sabel, C., & Simon, W. (2011). 'Minimalism and Experimentalism in the Administrative State'. *The Georgetown Law Review* 100: 54-93.



