

# Measuring the effectiveness of 'whole-of-system' response to prevent family violence

## RESEARCH SUMMARY

DECEMBER 2015

### 1. Purpose

The Social Policy Evaluation and Research Unit (Superu) commissioned the Institute of Environmental Science and Research Limited (ESR) to develop and test a systems approach<sup>1</sup> to measure the effectiveness of the 'whole-of-system' response to prevent family violence.

The purpose of this paper is to support discussions on the use of systems approaches to better understand complex social issues. We do this by:

- i. summarising what we learned from this proof of concept project
- ii. considering, either separately or concurrently, other options to improve our understanding of how best to measure the 'whole-of-system' response to prevent family violence.

This was a *demonstration* project and a 'proof of concept'. The system dynamics model developed as part of the 'proof' is *illustrative* only and is not representative of any future system dynamics model developed as part of this project. This in part reflects the short timeframe, and limited resources, in which the model was developed.

This project was commissioned to support current efforts to design and implement a whole of government approach to prevent family violence.

#### 1.1 Why the need for a systems perspective?

New Zealand and international evidence show that only a small proportion of family violence is reported to the authorities. There is also limited evidence as to what works for whom when seeking to address

family violence. This leads to uncertainty about the effectiveness of the government's investment in response to family violence.

Evaluation of interventions to prevent family violence has largely focused on the efficacy of individual activities and the effectiveness of particular programmes. This tells us little of the effectiveness of the system as a whole. However, when the unit of interest is the whole system, there is no useful comparator. Conventional evaluation designs cannot simply be transferred to estimate effectiveness. Although parts of the family violence system have been assessed, the results may not be applicable to the whole system.

Improving our understanding of the 'whole-of-system' response to prevent family violence will help us to:

- > consider the appropriate mix and spread (and dose) of interventions across the system
- > consider how intervention options are likely to affect outcomes *across* the system in the short and long term
- > identify and assess effectiveness measures across a level, field and/or sector of the 'system', and
- > prioritise indicators to assess the performance of the whole system at the national and local levels including identifying any barriers or limitations that may exist.

<sup>1</sup> The 'proof of concept' measurement methodology proposed by ESR draws on a number of systems thinking methods, including Systems Dynamics (to make explicit how various aspects of the system interact, including time delays), Balanced Scorecard (to consider multiple dimensions of effectiveness), and Sense-Making (to assist decision-makers in developing an informed assessment of effectiveness). For more information about the systems approach developed for the 'proof of concept', please see the final report by ESR – *Measuring the effectiveness of 'whole-of-system' response to prevent family violence* (December 2015).

## 1.2 Structure of the paper

The next section briefly sets out the context for this project. Section 3 describes the systems approach developed for the 'proof', while section 4 discusses what we have learned (including strengths and limitations of this approach).

## 2. Context

Assessing public sector effectiveness is as much a political as a technical issue. Assessment results are contingent on what the system to prevent family violence is understood to include. There are different perspectives on the goals of the system, and therefore on what it should be doing.

Investment decisions on complex social issues must be assessed on cost effectiveness, not just effectiveness alone. It is also important to anticipate the impact and outcomes of realising an option in the context of an interconnected family violence prevention system.

Family violence in a population is a complex system, involving:

- > actors, such as perpetrators, direct victims, collateral victims
- > various states of families (families at risk of violence, families where violence occurs and various states of transition between these)
- > various risk and protective factors for families, such as poverty, family history, substance use, community and whānau support
- > interventions by government and non-governmental organisations (NGOs)
- > factors influencing the effect of interventions, such as their efficacy, implementation, and resourcing.

Not all these elements can be measured. Where there are metrics, data are often scarce, subject to bias, and include problems such as variable definitions and changes in reporting requirements. Any assessment of the system's performance needs to take account of multiple perspectives.

The Government has agreed to develop a whole-of-system approach to prevent family and sexual violence. The proposed work programme intends to address the current fragmentation and lack of co-ordination of the family violence system through a co-ordinated, cross-agency approach that brings together all relevant inputs from across the system.

ESR was commissioned to inform this wider review by developing and testing a systems approach to measure the effectiveness of the whole-of-system response to prevent family violence.

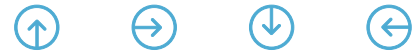
## 3. An integrated systems approach – the 'proof'

Systems approaches take account of multiple interacting factors, multiple perspectives and critical boundary judgements, making them seem well suited to assessing the overall effects of interacting initiatives. Such an approach makes the whole system visible and discussable, with a view to learning about what will shift the system towards desired outcomes.

This way of thinking recognises that the whole system has properties that are more than the sum of its parts. The *Public Health Framework* was used to categorise responses to family violence, in terms of prevention, early intervention, crisis response, and longer term care and rehabilitation. A systems approach focuses on how the parts of the system interact so that we can investigate how interventions bring about positive change and influence outcomes. It can also highlight unintended consequences of interventions (whether positive or negative).

Systems thinking can be conceptualised in terms of inter-relationships, boundaries, and perspectives:

- > **Inter-relationships:** How do you conceptualise the complex relationships between various family violence prevention policies and programmes? Multiple temporal relations have to be considered, including intergenerational perpetuation of violence and annual contracting cycles.
- > **Boundaries:** How do you select meaningful indicators of effectiveness, given 'messy', incomplete datasets; unclear cause and effect relationships between policies, programmes and outcomes; structural inequalities; and long delays between action and results?
- > **Perspectives:** How do you tell a plausible and credible 'performance story' from selected indicators, when there are significant uncertainties and data challenges, and no single, uncontested understanding of family violence and its impact? Effectiveness will be understood differently by different communities and from different perspectives.



An effective monitoring approach will observe how these three dimensions change over time for the key stakeholders.

### 3.1 Systems methodologies

The 'proof' developed by ESR primarily drew on three methodologies for interpreting complex systems<sup>2</sup>: system dynamics, the balanced scorecard (BSC) approach and sense-making.

#### System dynamics

System dynamics modelling is useful for demonstrating the effects of internal relationships and feedback in a system. The family violence system was modelled to understand its components' interactions, including its purpose, boundaries and feedback relationships. A computer simulation of the 'stocks', 'flows', and 'converters' in the particular system was developed. System dynamics models can take several forms, such as influence diagrams, causal loop diagrams, and stock and flow models.

Within a stock and flow model:

- > stocks are quantities – for example, the numbers of relationships marked by family violence and of those free from it
- > flows are changes to stocks over time – in the model, risk and protective factors, recovery, recurrence, death
- > a converter is a factor that affects a flow – for example the birth rate.

#### Balanced scorecard (BSC)

There are multiple perspectives on what would indicate effectiveness in assessing family violence. The balanced scorecard is designed to take account of a broad set of indicators. The 'proof' combines the balanced scorecard with system dynamics modelling to create a "dynamic balanced scorecard". A simple balanced scorecard offers a snapshot of key indicators from multiple perspectives, while a dynamic balanced scorecard can show the behaviour of key indicators over time. Thus the relationship between indicators and delays in effects can be taken into account.

#### Sense-making

The final component is collaborative sense-making. The indicators from the dynamic balanced scorecard need to be interpreted before the results can be applied. The aim is to come up with a plausible, defensible narrative to explain the effectiveness of the system for reducing family violence, and to propose improvements.

ESR trialled collaborative sense-making with an Expert Advisory Panel<sup>3</sup> using simple scenarios. In practice, scenarios would be based on policy options and feedback from stakeholders and a proposed expert panel. Modelling with the expert panel would foster discussion on understanding and interpreting the key dynamics of the system.

### 3.2 The 'proof'

Describing family violence prevention as a system involved identifying and mapping variables and their interrelationships. The boundaries of what was inside and outside the model were determined early in project when defining and structuring the nature of 'the problem'. Though the goals of New Zealand's Family Violence Prevention system are currently being reviewed, it was assumed that goals laid out in *'Te Rito: New Zealand Family Violence Prevention Strategy and Taskforce for Action on Violence within Families'* were relevant. Likewise the boundaries, as to what the "whole system" is, are a matter of judgement. For example, are general practitioners and other non-emergency health providers part of the system? If not, what are the practical implications in terms of assessing effectiveness?

The objective of the mapping is to build a composite model to improve understanding of family violence prevention as a whole system (see Figure 1). There is no absolute measure of performance, but the variable "effectiveness" is included in the mapping to assist in appraising and evaluating performance. Effectiveness of secondary prevention is the rate of converting the outputs of the secondary system (crisis response workload) into outcomes (recovery).

<sup>2</sup> Critical Systems Heuristics was also used to help clarify the change that is desired, supporting critical reflection on judgements and perspectives.

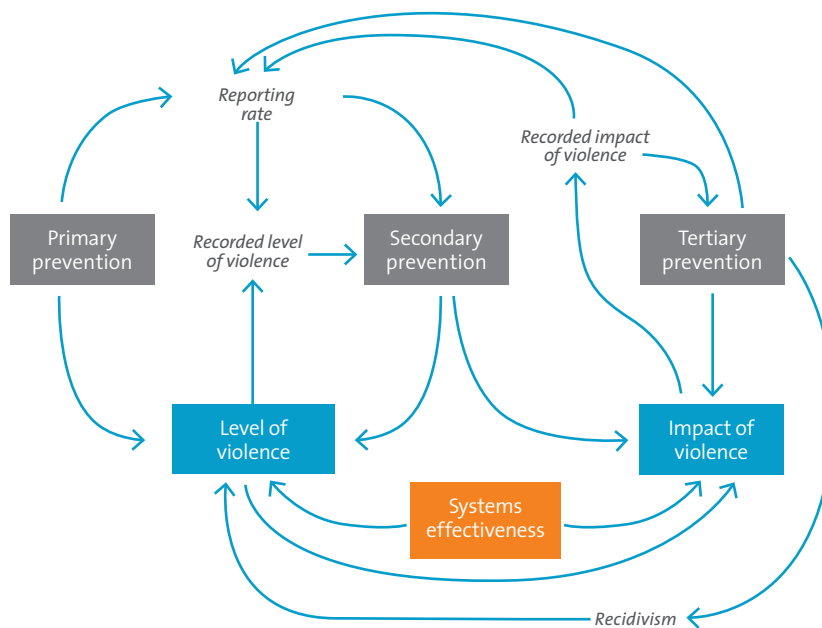
<sup>3</sup> Members included:

- Professor Angus Hikairo Macfarlane, Director of Te Rū Rangahau, the Māori Research Lab, School of Teacher Education, University of Canterbury.
- Yvonne Crichton-Hill, Head of Department, Human Service and Social Work, member of the Pacific Advisory Group for the Taskforce for Action on Violence within Families, and member of Te Awatea Violence Research Centre.
- Associate Professor Annabel Taylor, Director of the Queensland Centre for Domestic and Family Violence, Central Queensland University, Australia.
- Professor Gerald Midgley, Professor of Systems Thinking, University of Hull, United Kingdom.

A more detailed description of the process used to develop these models is provided in the final report and includes the assumptions and limitations.

**Figure 1** Initial influence diagram mapping out broad structural features of the Family Violence Prevention system

The grey background indicates family violence prevention activities; the blue background represents the family violence system; and the orange, measures of family violence system performance.



It is well documented that the family violence prevention system shows changes in behaviour over time, in particular in the secondary prevention sector. Information from administrative sources, such as Child Youth and Family (CYF) data, shows a significant increase in notifications and substantiated levels of abuse, such as physical abuse, over recent years. An analysis of CYF data suggests that the increase in their workload (notification) was primarily due to changes to the family violence protection system itself (e.g. changes in practice or reporting behaviour), rather than exogenous factors such as social or demographic change driving up the levels of violence.

After a series of iterations the final output of the mapping process was a systems map in the form of a causal loop diagram (Figure 2). At its centre is the level of family violence as a subset of interpersonal violence.

The definition of family violence includes behaviours which are regarded as violence within the context of a specific form of relationship. Other forms of violence, such as interpersonal violence outside the context of

family violence, self-harm and collective violence provide context or risk factors for family violence, but are not included as family violence.

Familial relationships can be thought of in one of three mutually exclusive states with respect to violence:

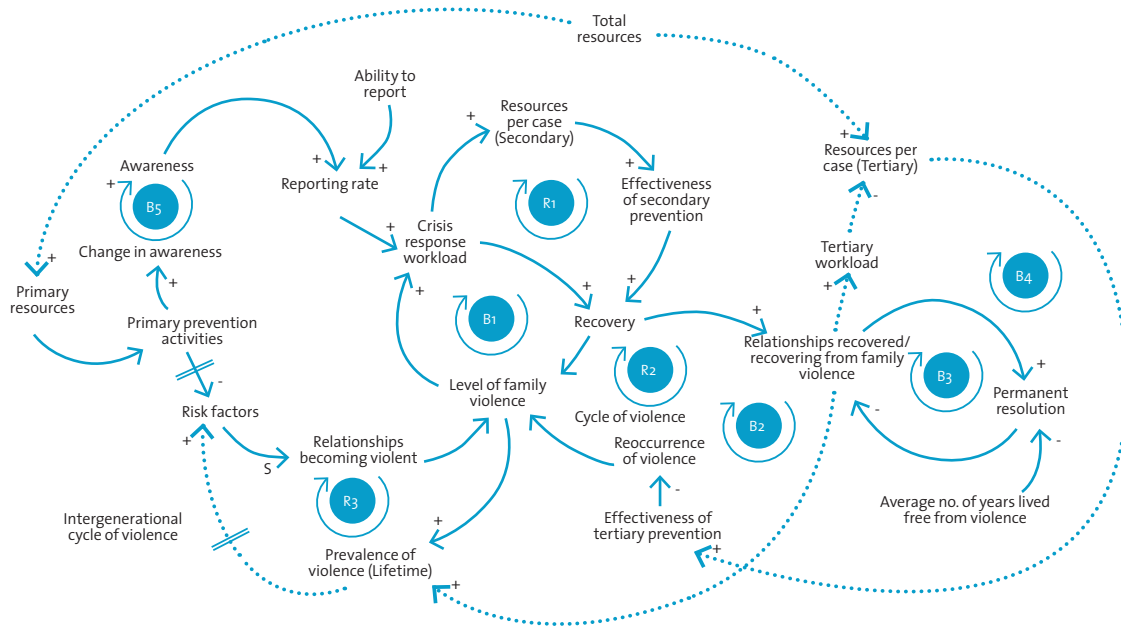
- > Never experienced violence
- > Violent relationships (level of family violence)
- > Recovering or recovered from violence.

The ‘proof’ modelled the last two (level of violent relationships and level of recovering or recovered from violence) as states or stocks.

The reason for considering relationships rather than individuals is twofold. Firstly, it is behaviour within the context of relationships that is the problem. Secondly, people have multiple relationships – it is possible for people to have relationships in multiple states, with respect to violence. People, therefore, have multiple needs in terms of the primary, secondary and tertiary public health model.

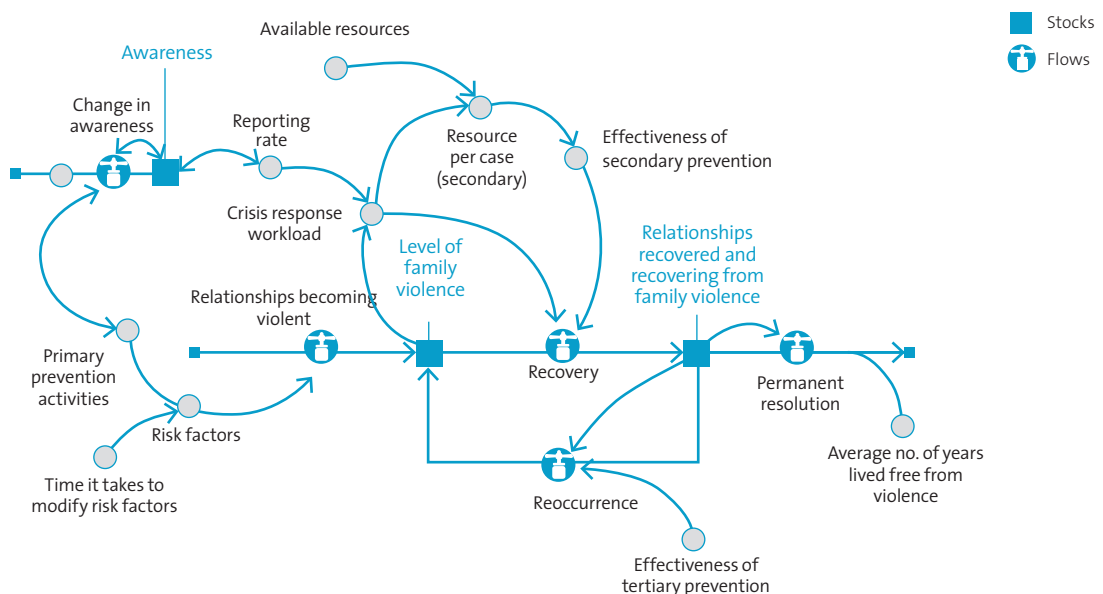
Absence of violence does not imply that there is no impact of family violence. The cost of pain and suffering due to the failure to clean up after violence is significantly higher than the direct costs of dealing with crisis<sup>4</sup>. The majority of the resources in the system are currently directed towards the immediate impacts of violence.

**Figure 2\_Causal loop diagram of the family violence prevention system**



The relationship with solid lines in the causal loop diagram (Figure 2) was converted into a stocks and flow model (Figure 3). The causal loop diagram is based on a mental model. The values of the model's inputs have been estimated on the basis of the literature, and input from the Experts Advisory Group, and is very much a first attempt at describing the family violence prevention system.

**Figure 3\_Stocks and flow model**



<sup>4</sup> Kahui, S. and S. Snively, *Measuring the Economic Costs of Child Abuse and Intimate Partner Violence to New Zealand*. 2014, Glenn Inquiry .

There is considerable uncertainty around the long and short-term prevalence of family violence. By definition, the level of long-term or lifetime prevalence of family violence is greater than the short-term prevalence of family violence. Approximately 55% of ever-partnered women had experienced Interpersonal Violence (IPV), and 18% had experienced IPV in the previous year<sup>5</sup>. In the case of family violence within a child-parent relationship, the relationship tends to become free of violence with time, so for the ‘proof’, instead of choosing a ratio 1:3<sup>5</sup> for Level of Family Violence: Relationships Recovered and Recovering from family violence, a 1:4 ratio was chosen.

It is important to note that the system dynamics model developed as part of the ‘proof’ is illustrative only and is not representative of any future system dynamics model developed as part of this project.

The collection of detailed information about the value of each indicator/ variable and their interrelationships is beyond the scope of this project, as is a sensitivity analysis and validation of the model.

The dynamic balanced scorecard developed for this project identified four perspectives specifically relevant to reducing family violence in New Zealand:

- > prevalence, incidence and impacts of family violence
- > stakeholder and service user perspectives
- > processes and activities
- > continuous improvement.

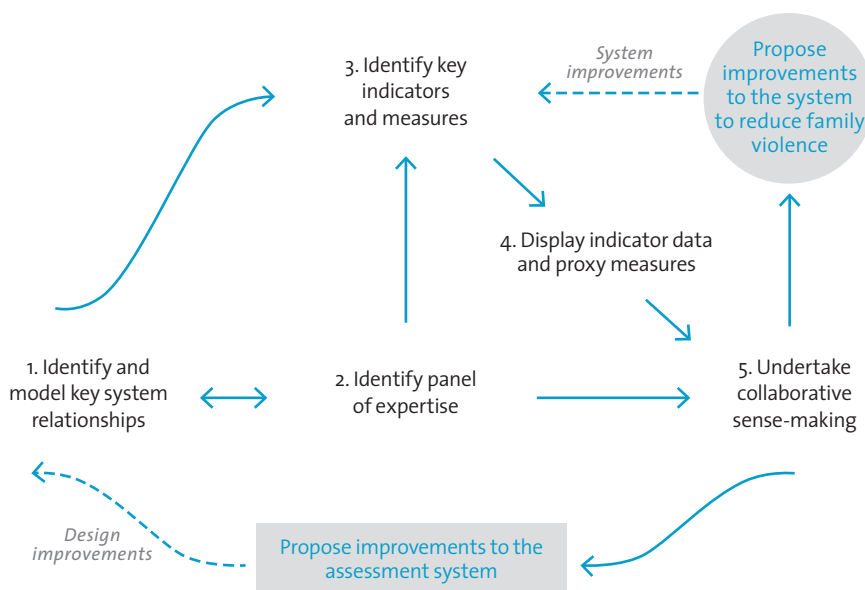
This enables current data and proxy measures for each indicator to be seen as part of a whole picture that represents system performance. The system dynamics model interacts with the scorecard to demonstrate behaviour of the modelled system over time and under different conditions.

An integral part of implementing the proposed approach is that selected metrics are chosen, modelled for behaviour over time, and presented in a form that enables discussion. A prototype of a dynamic balanced scorecard was developed as part of the ‘proof’, which includes potential indicators for inclusion in the model (see Appendix 1).

### 3.3 The proposed integrated approach

ESR’s proposed approach is intended to assess the whole system, be iterative and generate improvements to the system to reduce family violence, and improve the design of the assessment approach. The approach is summarised in the figure below:

Figure 4\_A proposed integrated approach



<sup>5</sup> Fanslow, J. and E. Robinson, *Violence against women in New Zealand: prevalence and health consequences*. New Zealand Medical Journal, 2004. 117(1206).





The proposed approach involves five core activities, with subsidiary processes:

**1. Identify and model the key system relationships:**

draw on expertise to create a qualitative model of the system to reduce family violence, and then develop a system dynamics model.

Models are simplifications of stakeholders' perceptions of how something works in the real world. Additional stakeholder consultation is needed about the purpose of the model, the aspects of the system to be incorporated, the key policy questions to be answered, and the indicators to be calculated. The goals of the system need to be explicit. Possible policies for improvement need to be proposed, and the intended end-users should be identified. Stakeholder engagement can be used to refine the system dynamic modelling.

To ensure that the system dynamics model is robust, input from subject area and modelling experts is needed. Maintaining and improving the model is an iterative trial and error process. Informal model testing occurs throughout the entire model development process. Formal model testing is based on its face validity (common sense), historical behaviour, and extreme behaviour (under stress testing to see whether the model produces results which are too large, too small, or negative). Such testing also involves sharing the model and outputs with stakeholders to perform a 'reality check' on the plausibility of the results.

**2. Identify a panel of experts:** The selection of appropriate expertise for the panel needs to reflect the modelling, and the framework for sense-making, and be salient, credible and legitimate. The members of the panel should reflect various perspectives – those of statutory and NGO agencies, people directly affected by family violence, and policy analysts and academics. The validity of the model would be improved by including quantitative risk modellers and public health surveillance expertise on the panel.

**3. Identify key indicators and measures, using four processes:**

- > agreeing the goals of the system and defining metrics accordingly
- > using the four perspectives within the proposed customised dynamic balanced scorecard

- > using critical systems enquiry to bring to bear different perspectives
- > using the system dynamics model to understand the dynamics of the system.

**4. Display indicator data and proxy measures:** metrics are chosen, modelled for behaviour over time, and presented in a form that enables discussion.

**5. Undertake collaborative sense-making:** A panel of experts discusses plausible interpretations of the indicator data and measures. Alternative scenarios are run to analyse the current state of the system in terms of stocks and flows, and thus the performance of the system. The aim is to monitor changing patterns in the data, and interpret them from different perspectives.

## 4. What we have learned

ESR's report demonstrated the *potential* of using a combination of systems approaches to measure the 'whole-of-system' response to prevent family violence.

The use of *qualitative system mapping* is used to gain a sufficient understanding of the core influences on system effectiveness. *System dynamics* modelling is used to demonstrate likely behaviour of the system over time given certain starting points and scenarios. And a *dynamic balanced scorecard* is used as a way to enable a panel of experts to collaborate in making sense of the indicators and trends, and particular system behaviour over time. In short, the value of the proposed approach is that complexity and uncertainty are managed to produce a usable consensus on how well the system is performing to reduce the problem of family violence, and on likely impacts of any proposed action.

New Zealand and international literature does support the *promise* of systems approaches, specifically with regard to:

- > monitoring system effectiveness relative to changes in policy or interventions
- > making informed judgement about what may be influencing effectiveness
- > ensuring that judgements about effectiveness and influence are credible, salient and legitimate in the eyes of stakeholders
- > undertaking targeted enquiries and thought experiments to inform policy and action.

The ‘proof’ has shown that the proposed approach can make the complex family violence prevention system comprehensible and discussable, helping to engage stakeholders with different levels of understanding of interconnections within this system. This is an important and necessary step in seeking to measure the whole-of-system response to prevent family violence.

System dynamics modelling will also allow simulation of the family violence prevention system, and thus policy experiments to inform decision making. Modelling feedback loops can reveal counter-intuitive and perverse effects, and give insights into the whole system that are not available from isolated indicators or expert opinion alone. However, the value and potential use of these policy experiments is not yet proven. With limited time and resources, the ‘proof’ was only able to run very simple, high-level simulations, or scenarios (e.g. increase in secondary workload).

ESR also recognises the limitations of the ‘proof’, which has been derived from theory, published examples and only limited testing. At this point it is unclear to what extent and over what timeframe a purpose-built measurement methodology would be ready for implementation.

If this work was taken forward, ESR estimates a 12-18 month project involving further development and refinement of the integrated approach, together with comprehensive piloting and testing for an agreed geographic location. The development phase of any new work would seek to build a model that is iterative, generates improvement to the system to reduce family violence, and proposes to improve the design of the assessment approach itself. The detail of a potential proposal is outlined in Appendix 2.

Piloting the approach would provide feedback for refining perspectives and indicators, and modelling scenarios. Feedback would remain a part of full implementation to ensure continuous improvement through iterative cycles.

The approach does provide a framework for indicators to be interpreted and monitored in the context of the whole system. Again, however, this would need to be further tested and validated.

ESR recognises that issues with current datasets present a challenge for choosing appropriate indicators, and that it will take some time to improve the data. The impact of this in the interim on the types of policy experiments that can be run is unclear.

While undertaking this project, Superu was unable to identify examples of where systems approaches are being regularly used by government departments to help understand and measure complex social issues. Where they have been tried, they have tended to focus on specific, often operational, issues or appear to have failed to achieve buy-in from policy and other decision-makers.

Should any further work occur using the approaches developed during this proof of concept project, it would be necessary for Superu and other Government departments to strengthen their capability in using systems approaches and more broadly, in how they go about developing and implementing policy.

Effective implementation of this approach would require resourcing, in particular:

- > sector engagement to establish a suitable panel of experts
- > a small secretariat to gather and present indicator data for consideration
- > access to expert system dynamics modelling
- > access to expert systems-oriented design and facilitation for sense-making workshops
- > provision to convene a panel of experts at agreed intervals for sense-making
- > capacity and capability in the public service to understand and support the approach and interpret it to senior officials and Ministers.

In summary, this proof of concept project has confirmed the potential of using systems approaches in seeking to better understand complex social issues, but Superu cannot be certain of the efficacy or practicality of using this approach for the current purpose of measuring the effectiveness of the family violence system.





## Appendix 1\_Dynamic balanced scorecard – a provisional chart

Perspective	Enquiry/data sources	Outcome measures (LAG indicators) <sup>6</sup>	Outcome drivers (Lead indicators)	Modelling input
<b>Prevalence, incidence and impact</b>	<p>Survey and administrative data (e.g. NZCASS, Police, CYF, Age Concern, hospitalisation data, service utilisation)</p> <p>Performance against Better Public Service (BPS) targets</p>	<p>Indicators of seriousness</p> <p>Disability Adjusted Life Years</p> <p>Type of violence</p> <p>Gender/ethnicity/age analysis</p> <p>Geographical analysis</p>	Levels of reporting	Exploration of the behaviour of the system through the interaction of the variables from various balanced scorecard (BSC) perspectives (e.g. between levels of prevalence, incidence and impact, and processes and activities) and their resulting feedback loops
<b>Stakeholders and service users</b>	<p>Population surveys and surveys of experts (e.g. NZCASS, attitudes surveys, health surveys and statistics, quality of life and wellbeing data, service user satisfaction surveys)</p> <p>Studies of stakeholder experience and perspectives</p>	<p>Satisfaction levels</p> <p>Service expectation</p> <p>Qualitative indicators of wellbeing for specific communities</p> <p>Health indicators (physical and mental)</p>	<p>Evidence of barriers and drivers for service uptake and service experience (e.g. cultural fit)</p> <p>Community attitudes to violence</p> <p>Equality of outcomes across populations</p>	Exploration of the behaviour of the system through the interaction of the variables from various BSC perspectives (e.g. between levels of prevalence, incidence and impact, processes and activities, and perspectives of stakeholders) and their resulting feedback loops
<b>Processes and activities<sup>7</sup></b>	<p>Workforce and service capacity and capability data (e.g. workforce qualification levels and rates, investment in learning and development, workforce numbers and distribution)</p> <p>Number, spread, focus and creation of services and interventions</p> <p>Funding and contracting data (e.g. cost of services)</p> <p>Analysis of where funding is allocated</p> <p>Existence of, and experience of, sector-wide information gathering and flows to decision-makers</p> <p>Existence of, and experience of, national strategy and supporting policies and legislation</p>	Changing patterns of service provision	<p>Workforce and service capacity and capability</p> <p>Changing patterns of service provision</p> <p>Changing patterns and levels of resourcing – including: the spread between prevention, early intervention, crisis response and recovery initiatives, spread between the five VSM functions</p> <p>Equity and application of resources for particular communities or populations</p> <p>Efficiency and effectiveness of information gathering and information flows for decision-makers</p> <p>Stakeholder perceptions of relevance, credibility and legitimacy of national strategy and supporting policies and legislation</p>	Exploration of the behaviour of the system through the interaction of the variables from various BSC perspectives (e.g. between levels of prevalence, incidence and impact, and processes and activities) and their resulting feedback loops

<sup>6</sup> Lag indicators are ways of measuring the focus on what has already happened. Lead indicators are ways of assessing if strategies and processes are in place that would change outcomes.

<sup>7</sup> Processes and activities need to be assessed at each level of the system.

Perspective	Enquiry/data sources	Outcome measures (LAG indicators) <sup>6</sup>	Outcome drivers (Lead indicators)	Modelling input
<b>Continuous improvement</b>	Existence of, and quality of, research and evaluation of interventions and strategy (at all levels of the VSM)	Intended and unintended outcomes from investment decisions	<p>Research and evaluation that is relevant, credible and legitimate for key stakeholders</p> <p>Utilisation of research and evaluation findings in policy development, resourcing decisions and operational activity</p>	Exploration of the behaviour of the system through the interaction of the variables from various BSC perspectives (e.g. between levels of prevalence, incidence and impact, and continuous improvement provisions and activities) and their resulting feedback loops

## Appendix 2\_Developing the 'proof' – what next?

Component	What is established	What is not established	What is needed
<b>Clarifying the focal problem</b>	The focal problem has been assumed to be known if the problem of family violence is increasing or decreasing in response to the suite of policies and interventions prevailing.	What outcomes from the whole system are considered desirable from various perspectives, and what outcomes might be agreed between key perspectives to assess system effectiveness?	Stakeholder analysis and engagement to clarify what matters to whom, and, therefore, what question or problem to focus on. Stakeholders need to include key decision-makers and those significantly affected by decisions.
<b>Choice, synthesis and adaptation of methods to be fit-for-purpose</b>	<p>Robust international support for applying systems methods for understanding and assessing system effectiveness.</p> <p>Methodological critique by systems and sector experts that our methodological choices were likely to be fit-for-purpose.</p>	The detail of how to tailor and implement the suite of methods will require further work, including piloting.	Piloting an application of the methods and approach, and subjecting the pilot not only to the internal feedback produced by participants but also systematic developmental evaluation and peer review.
<b>Understanding the system</b>	A credible systems map has been developed illustrating key influences and relationships. This map has been derived from sector experience and literature, and has been refined by engagement with experts from different perspectives.	The engagement and range of perspectives to inform the understanding of the system has been limited and therefore the system map is not as robust as it could and should be.	Stakeholder engagement to collaboratively map the system and develop one or more robust system map(s).
<b>Choosing Balanced Scorecard perspectives for assessing effectiveness</b>	An initial fit-for-purpose selection of perspectives has been made for a customised balanced scorecard.	The four perspectives have not been 'pressure tested' by trialling their utility for sense-making.	An important outcome from running a pilot implementation is to test and refine the four BSC perspectives.



Component	What is established	What is not established	What is needed
<b>Choosing indicators for each BSC perspective</b>	Initial judgements have been made for illustrative purposes only.	No assessment has been made of the full range of available data that might serve as effectiveness indicators for each BSC perspective.	Officials and other stakeholders need to collate potential indicators and these need to be subject to trial use before and during the pilot phase.
<b>Choosing the range of expertise for making sense of indicator data</b>	Guidance has been included in the report on the range of experience and expertise to include in sense-making. A limited example of this was approximated through the use of the project EAP.	The optimal range of expertise, and the most credible and legitimate way of selecting people to represent that range, has not been tested.	Stakeholder analysis and engagement is required to test and refine the assumptions about expertise for sense-making, and who might represent that.
<b>Choosing scenarios of system behaviour over time to interpret data using SD modelling</b>	Illustrative scenarios have been developed and reported.	No attempt has been made to identify all the useful scenarios that could, if modelled, shed light on how effective the system is.	Initial scenarios need to be developed and modelled in response to questions framed by decision-makers and key stakeholders. Further scenario development and modelling will result from piloting and implementing the approach.
<b>Building and testing system dynamics models of selected scenarios</b>	As above	As above	As above
<b>Operational design for a pilot implementation</b>	A structure or framework for assessing system effectiveness has been outlined.	Many issues would need to be addressed before a live pilot could be launched. These would include addressing all the matters above, and situating the pilot within the appropriate organisational setting with appropriate resourcing, oversight and evaluation.	An implementation plan and evaluation plan need to be developed, and organisational support established.





## Our purpose

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To increase the use of evidence by people across the social sector so that they can make better decisions – about funding, policies or services – to improve the lives of New Zealanders, New Zealand's communities, families and whānau.

## What we do

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We work across the wider social sector to:

- **promote** informed debate on the key social issues for New Zealand, its families and whānau, and increase awareness about what works
- **grow** the quality, relevance and quantity of the evidence base in priority areas
- **facilitate** the use of evidence by sharing it and supporting its use in decision-making.

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**Peer reviewers:** Dr Rob Lake, Dr Bob Cavana.



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