Policy advice
MASTERCLASS

Paper 20

Presenting evidence

Given we're now witnessing the world of "alternative facts," it's even more important to consider how evidence is presented in advice papers, so we can avoid descending to these lows.

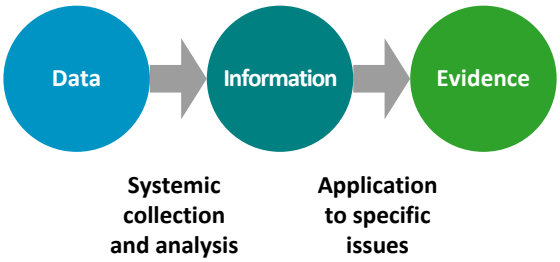
Of course, this has been a subject of debate for some time. It was Mark Twain who popularised the saying "lies, damn lies and statistics" in the early 1900s – attributing this to the British Prime Minister Benjamin Disraeli. This, of course, focussed on the selective use of statistics to help boost an argument. A tactic we've all no doubt seen, but hopefully not contributed to!

In this Masterclass, we focus not so much on the theoretical underpinnings of the science of knowledge (or epistemology), but on the practical issues of how to assess and present evidence in your advice papers. The trick is to present the evidence fairly, in a way which is easy to understand, but so as to identify its short comings.

Data, information and evidence…

These terms, and others, seem to be used interchangeably. So it's worth a description.

Figure 1 What is evidence?



Source: NZIER

The push for "evidence-based policy" is strong

The need for evidence based policy has been a key discussion point in New Zealand for a number of years now. Sir Peter Gluckman, in his role as the Prime Minister's Chief Science Advisor, has written and spoken on this topic in considerable depth (Gluckman 2011 and 2013). In these reports, he builds on the work of the UK Cabinet office in the 1990s.

This concept has also been picked up under the "Social Investment" banner. This has included a drive to evaluate programmes, and fund only those ones which have been proven to be effective.

Gluckman (2011) cites a number of examples in which policy decisions were made on the basis of little or poor evidence, and the adverse consequences of such decisions.

As well as just plain not fixing the problem, decisions based on poor evidence may cause more harm, and often more costs.

But it's not that simple…

Of course, improving the quality of evidence supporting policy is a huge challenge. Uncertainties abound. Evidence is not available on all issues; it may be conflicting; the quality is mixed; and the problems we are being asked to provide advice on can be complex and unique. Indeed, there is some truth in the crude view that most policy debate, being political, is in advance of careful enquiry, and so is likely to lack a secure research basis.

But, if there is a pressing problem, decisions still must be made. And decision-makers may have to make a move with whatever limited evidence they can muster.

And even if it is possible to carry out studies, amassing robust evidence can be expensive – especially where original data must be collected at source.

This is magnified in a small country with few academics working locally, and in which research budgets may be broadly proportional to overall wealth, but certainly never enough to fully investigate all important issues in the New Zealand context.

As well as these challenges, decisions made by politicians inevitably have an element of the political (as discussed in our first masterclass *Communicating with aliens*: Policy Masterclass 1, distributed in 2016). While one side of this is reflected in the way assessments are made (through the weights put on various aspects of the decision), it often also has an impact on other facets of the decision, such as the credibility of selected evidence, and the feasible set of solutions.

It can even affect the approach taken to the problem – so various judgements may become explicitly political and be made based on values ("No NZ government would condone such an action.") or "common sense", rather than strictly relying on the evidence itself.

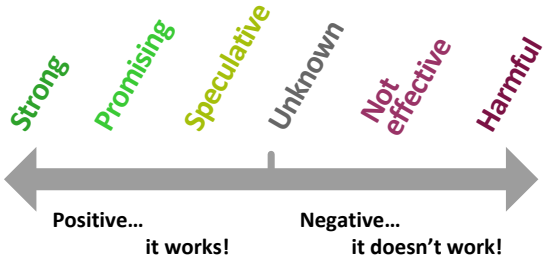
The quality of the evidence may vary

A way of addressing the evidence scarcity and probity problem is to be clear about the quality and reliability of the evidence actually used.

One of the early adopters of standards for evidence was Pharmac (see Pharmac 2016 for the latest guidelines) which developed standards for evidence needed to support applications for medicines to be made available. This sort of approach is common in the field of pharmecoeconomics. Treasury's (2015) guidelines look for a similar consideration of the strength of evidence in their approach to cost benefit analysis, and to Regulatory Impact Statements (2013).

Both the Ministry of Justice (MoJ) and the Ministry of Social Development (MSD) have developed a methodology for categorising evidence (cited in Superu 2016). This is based on a set of criteria for assessing the strength of evidence in support of a proposal – from very strong to dubious. MSD's categorisation also includes identifying evidence which does not support the proposal or is harmful.

Figure 2 Evidence continuum



Source: NZIER, adapted from MSD and MoJ work (Superu 2016)

Both appear to rely on fairly high standards of evidence – MSD looks to Randomised Controlled Trials (which are often considered the gold standard in research. They underpin medical research e.g. the Pharmac guidelines).

However, that can be near impossible to achieve. It's costly. Also it can be technically unfeasible in some situations. One example is where it is difficult to maintain a random control group. e.g. in public health where programmes can be accessed by all e.g. TV advertising campaigns; air quality improvement measures, fresh water; etc. That is, they are non-excludable.

Of course, there are situations where robust data and evidence is available, and it should be used to the full. This is more common in areas where physical or biological sciences are employed as part of the tool kit.

There are a wide range of sources of evidence

Many tricky public policy problems are "regulars" on the agenda. They are addressed by a sound programme but still not completely dealt with. So, they are back on the agenda regularly.

Given that well-designed monitoring and evaluation programmes should be part of the implementation of major policy initiatives, such data can be the evidence for the next round of policy advice. In this way, it becomes the backbone of the feedback mechanism within the traditional policy development cycle. It's important that policy analysts work with their research and evaluation colleagues in defining the research agenda and work programme to address these information needs.

Executed the right way, and after deft processing, such material can be shaped to form a critical part of the evidence base for decision-making. The same principles about being careful about the strength of evidence also apply here.

For example, it's important to acknowledge: sample sizes; whether submissions represent an individual, a group of individuals or an expert body (including whether they may have an axe to grind); and where possible to calibrate submissions against market research or survey results, if available.

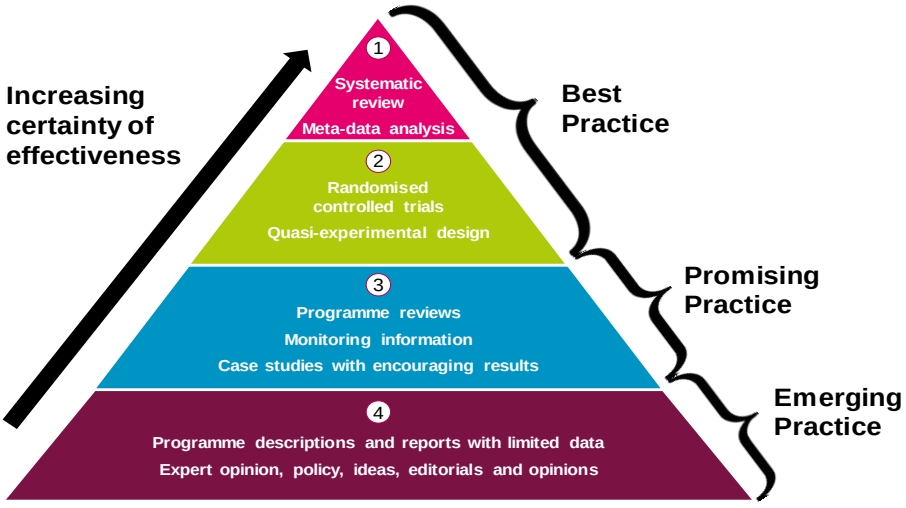
Fundamentally it must be realised and acknowledged that this data is not the only evidence. It should, wherever possible, be supplemented by evidence from other sources, and balanced accordingly.

Much of the evidence we see in policy analysis is based on:

- Official statistics[1] - including newer data sets like the IDI (Integrated Data Infrastructure).
- International comparative statistics – for example from the OECD or other international organisations.
- Information from the agencies' own (typically administrative) data collection systems (and when matched with that of others) – including trends over time.
- Literature reviews – picking up previous research findings (including overseas results for comparison).
- Market research techniques – including focus groups, surveys of service users
- Co-design processes with service users.
- Expert advice – e.g. from engineers, or scientists. This also includes using expert panels to assess all the evidence and draw conclusions.
- International comparisons of policy approaches and their outcomes.
- Comparisons with approaches adopted in other areas within New Zealand.
- Modelling – of various types from straight forward spreadsheet work to elaborate multi-equation models like those involved in general equilibrium research.

Figure 3 shows a simpler approach to categorising the standard of evidence. It can be used to help categorise and then explain the weight of evidence in support of a proposal (or otherwise).

Figure 3 Levels of evidence



Source: NZIER, based on material from the Oxford Centre for Evidence-based Medicine 2009

[1] Official statistics published by Statistics NZ are always accompanied by a discussion of the research methods and associated risks with the data.

Ensure that there are no surprises from the evidence

Explaining to decision-makers the uncertainties associated with the evidence you are presenting is an important part of advising.

As well as the quality or robustness of the evidence, you should highlight gaps in the data, and applicability to New Zealand. It's a core part of providing free and frank advice.

Not being clear about the strength of evidence can quickly get officials into the "damn lies and statistics" territory.

This sort of commentary is like "informed consent" in the medical system. It identifies the risk associated with the evidence and allows decision-makers to weigh those risks (and others) against the benefits they are hoping to achieve.

This can be woven into a risk assessment of the options (covered in Policy Masterclass 5: Taking chances with risk, distributed in 2016).

It also fits with the "no surprises" approach that Ministers demand of officials.

You don't need to go into too much detail in the advice paper itself. It is always worth indicating where any data used came from through a quick explanation or standard referencing. But, you should do your own assessment of the quality of the evidence and associated risks, and make sure this view is summarised in your paper. Depending on the quantity of evidence included a sentence or a paragraph will usually do the job.

Support is at hand...

There will be a range of people within your organisation who can provide expert advice on these matters, for example:

- Some organisations have appointed Chief Science Advisors e.g. MSD, DOC, and MPI.
- Those in specialist research and evaluation units.
- Colleagues with science or research backgrounds.

However, it's useful for all analysts to have a little bit of knowledge about these sorts of issues as part of their wider tool kit.

Most public policy programmes contain a relevant course; and some short courses are offered to brush up on your skills.

References and further reading

Gluckman, Sir Peter (2011) Towards better use of evidence in policy formation: A discussion paper. Office of the Prime Minister's Science Advisory Committee. http://www.pmcsa.org.nz/wp-content/uploads/The-role-of-evidence-in-policy-formation-and-implementation-report.pdf

Gluckman, Sir Peter (2013) The role of evidence in policy formation and implementation; Office of the Prime Minister's Science Advisory Committee. http://www.pmcsa.org.nz/wp-content/uploads/Towards-better-use-of-evidence-in-policy-formation.pdf

Kibblewhite, Andrew (2017) The E-I-E-I-O of people centred policy, The Mandarin, February 2017.

http://www.themandarin.com.au/75795-andrew-kibblewhite-the-e-i-e-i-o-of-people-centred-policy/?utm_source=The+Juice+-+combined+list&utm_campaign=f843b8dc8f-EMAIL_CAMPAIGN_2017_02_22&utm_medium=email&utm_term=0_d98f7edac0-f843b8dc8f-261390329

Janssen, Tania and Sharleen Forbes (2014) The use of officials statistics in evidence based policy advice, Conference Paper, International Conference on Teaching Statistics 2014. http://icots.info/9/proceedings/pdfs/ICOTS9_5A1_FORBES.pdf

Ministry of Primary Industries (2011) Research and Science Information Standard for New Zealand Fisheries, MPI, Wellington.

https://www.mpi.govt.nz/document-vault/3692

Oxford Centre for Evidence-based Medicine (2009) Levels of Evidence, Oxford University.

Pharmac (2016) Prescription for Pharmecoeconomic Analysis, Pharmac, Wellington.

www.pharmac.govt.nz/medicines/how-medicines-are-funded/economic-analysis/

Statistics NZ (2017) The Officials Statistics System. http://www.stats.govt.nz/about_us/who-we-are/home-statisphere/official-statistics-oss.aspx

Superu (2016) In Focus: Standards of Evidence for understanding what works; Superu, Wellington. http://www.superu.govt.nz/in_focus_standards_of_evidence

Treasury (2013) Regulatory Impact Analysis Handbook. http://www.treasury.govt.nz/regulation/regulatoryproposal/ria/handbook

Treasury (2015) Guide to Social Cost Benefit Analysis. http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis/guide

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