How-to guide to undertaking analysis:

learnings from the project on young Māori women who smoke

Version 1.0 June 2017

NOOS Consulting & Ministry of Health

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Authors

This how-to guide and the other outputs from the project on young Māori women who smoke was created through collaboration between NOOS Consulting and the Ministry of Health. The project team consisted of:

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Using this guide

Purpose

Sets out a method for anyone who would like to adopt/adapt the approach, method and process we used for future projects.

Finding out more

A full suite of written documents were produced as part of the project on young Māori women who smoke. This includes reports and summary pages from the analytics and co-design teams, and a how-to guide to doing co-design.

This guide covers

- Information about the project
- The role of analytics in putting together a fuller picture
- The aspects of the project our work covered
- Our approach
- The skills and roles in the project team
- A step-by-step guide process map
- Key learnings and tips

The project: young Māori women who smoke

Our project seeks to identify the variables that have intervention power. In other words, what are the things we can change?
- Ministry data analyst

Purpose

To understand what we can see in the data about the lives of young Māori women who smoke; and to understand how to use a similar process effectively for future projects of a similar nature.

Length

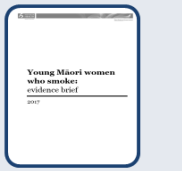
The project ran for 13 weeks: from 3 April to 30 June 2017.

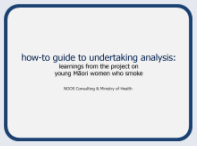
Proof of concept

From a social investment perspective, this project had five components. The data analysis process we went through in this project is a proof of concept for components 1 and 2:

- **Component 1: Data foundation.**
- **Component 2: Understand the population.**
- Component 3: Evaluate service effectiveness (out of scope).
- Component 4: Calculate value (out of scope).
- Component 5: Make decisions (out of scope).

Outputs





EVIDENCE BRIEF
contains a summary of what we already know about young Māori women who smoke from previous research

SUMMARY A3
contains high level summary of what we learnt about young Māori women who smoke in this project

TECHNICAL REPORT
contains details about processes taken and our analytical results from analysis on data about young Māori women

HOW-TO GUIDE
contains information about resources needed, processes to take and other tips to adopt/adapt for future projects of a similar nature

If we look at this group of people... what are the other common factors that are also present in their lives?
- Ministry policy analyst

How we work: bringing ‘who’, ‘what’ and ‘why together

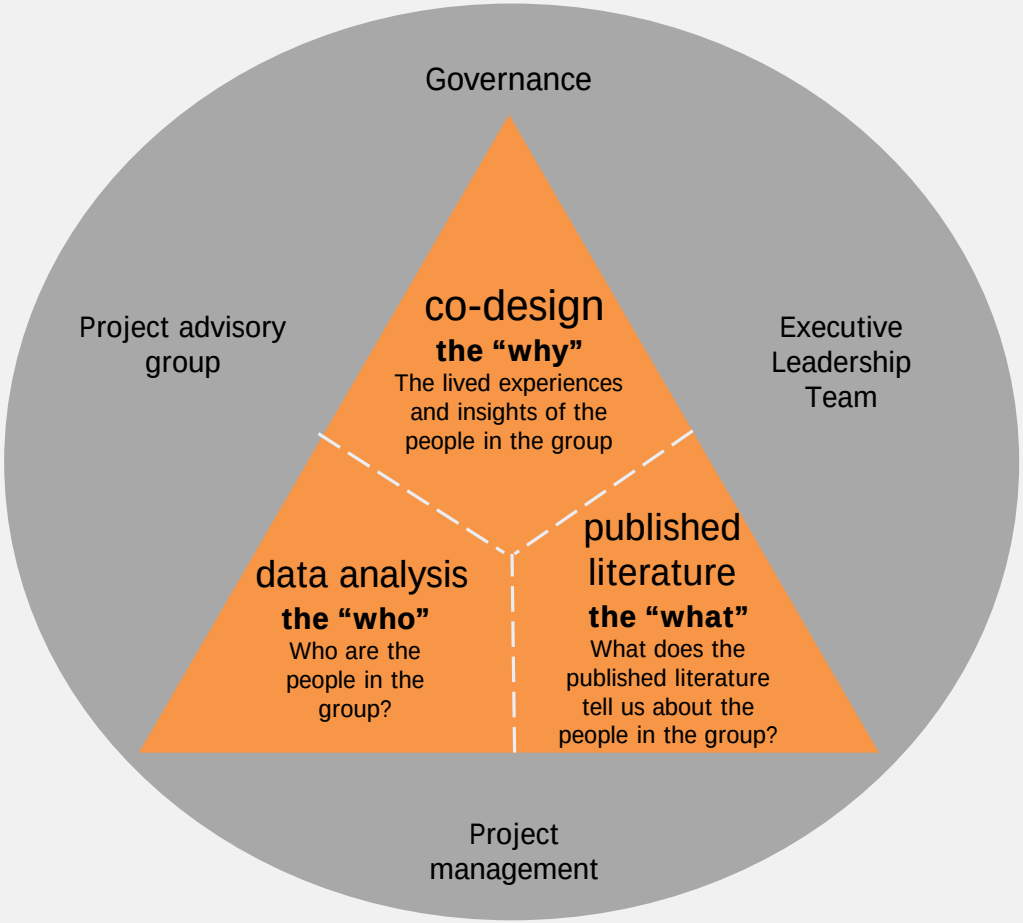
In this project, we worked together in a new way

These 3 perspectives needed to come together:

- the people
- the literature
- the data

‘Why’

The co-design component of the project gathers rich qualitative data directly from the group in order to gain insight into their lived experiences and reasons for and feelings about their smoking behaviour



Enablers

These 3 perspectives are enabled by project management from the ground up and governance from the top down.

‘Who’

The data analysis component of the project identifies the experiences in the lives of our chosen population that can be seen in the data.

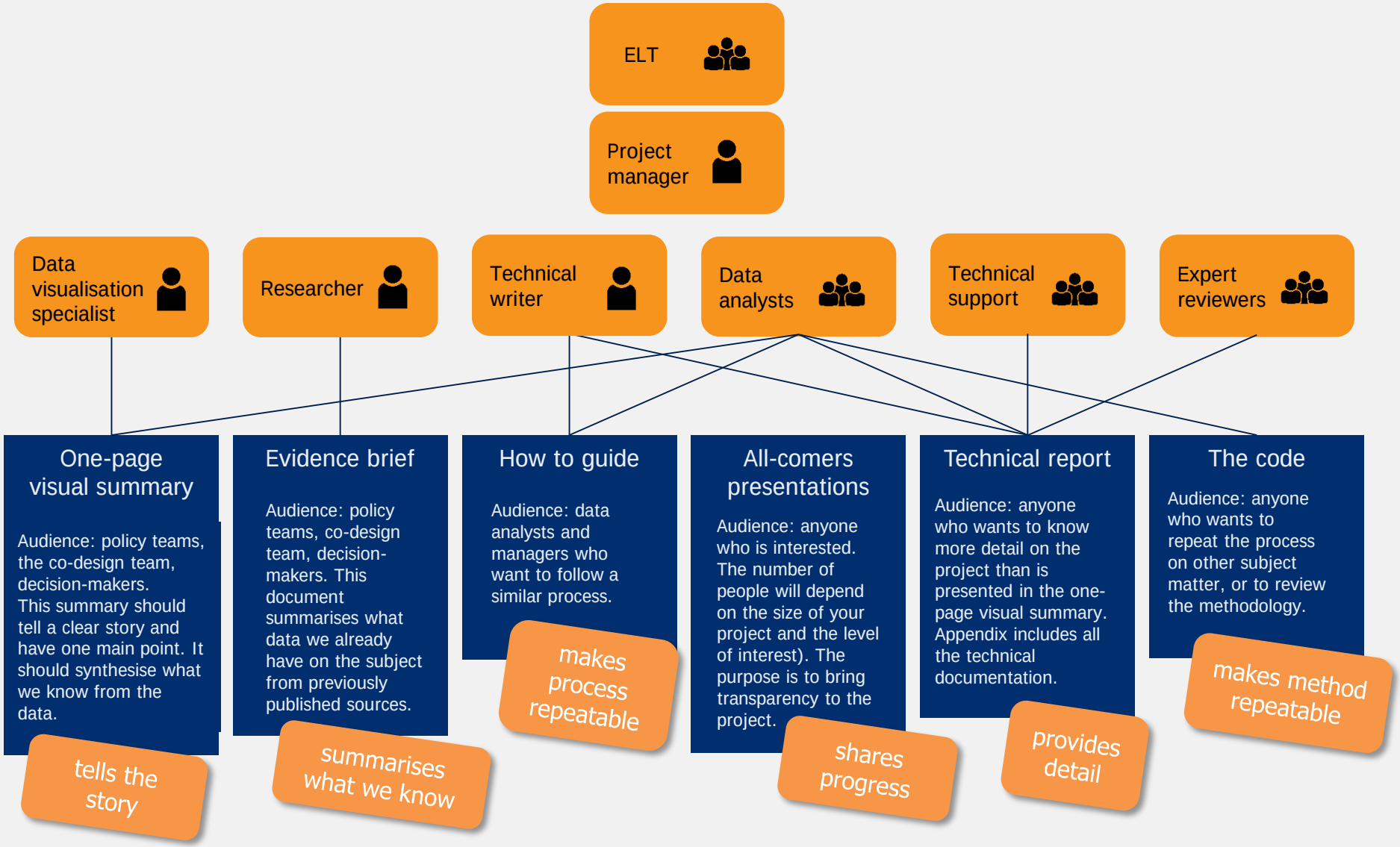
We need robust data on our chosen population as a basis for analysis.

people-centric data analysis

‘What’

In order to be meaningful, data analysis needs context. Gathering what we know about the chosen population from previously published literature.

We used a cross-disciplinary team to produce a range of outputs



Our approach

Think big

Ambitious: we tackle tough problems

Innovative: We bring many different expertise areas together to build new insight

We built a cross-disciplinary team

We communicate findings and ways of working across the whole organisation and beyond

All-comers meetings, workshops, advisory group, symposium

Test small

Have clear timelines, monitor against them, and stick to them

We had 13 weeks from project kick-off to the final presentation of findings

Have a clear purpose and tight scope

The purpose of the analysis was to understand (in the data) who our chosen population were “what were the other common factors that are also present in their lives”

Move fast

Use project management disciplines

We made the deliverables clear and kept them achievable in timeframes

We had regular planning sessions. This made progress visible and created accountability

Take a feedback-driven approach to work, and be flexible and adaptive to changes gathered from feedback

We planned time in for robust internal and external peer review, and time to implement feedback

Learn by doing

No-one in the project team from the Ministry had used the IDI before the project started

Build knowledge incrementally

Share ideas and results, early and often

All-comers meetings were sessions where any interested parties were invited to follow along with our progress

Bring our stakeholders along on the journey, using transparency to build trust

Regular briefings to our advisory group

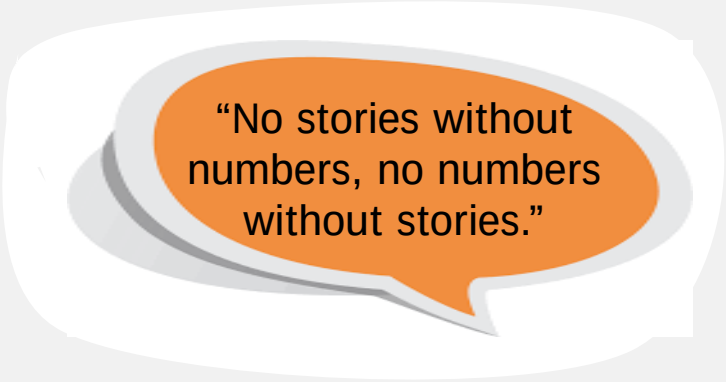
Keep the leadership team up to date; no surprises!

Workshops with the co-design team to share findings

Combining our respective findings to present a fuller picture

Symposium to share findings with the sector

Communicating the story is key



written outputs

presentations

symposium

to the people who will use it

policy decision-makers and influencers

service providers

stakeholders and partners

to make change

Here’s how we did it, step by step

Month 1: Data foundation

Month 2: Data analysis and interpretation

Month 3: Collation of analytical results and integration

	Week 1	Week 2	Week 3	Week 4	Week 5
Data analysis	Identify potential data sources Decide which data sources to use	Draft a statistical approach and receive feedback Identify the study population Put together an initial draft of variables and circulate with the wider team	Select target population Select variable shortlist Plan out what the initial results may look like	Create a test dataset and build first statistical model Confirm statistical approach	Refine variable selection and categories Data exploration
IDI	Apply for access to the IDI Identify who needs data access, when, and submit all names Arrange access to a data lab	Follow up with IDI access to ensure it will be available in a timely manner		Submit 1st step for IDI phase 1 checking IDI confidentiality training	
Words & Pictures		Request a literature search from research services		Start research for evidence brief	
Project management	Weekly project meeting Define the project goal Appoint the project team Identify expert reviewers	Weekly project meeting Appoint technical support and expert reviewers	Weekly project meeting	Weekly project meeting	Weekly project meeting
Communication	Identify interested parties	Weekly email updates	Weekly email updates	Weekly email updates Advisory group meeting	Weekly email updates

	Week 6	Week 7	Week 8	Week 9
Data analysis	Create frequency table for additional variables not yet checked Complete more detailed planning for the analytical work Summarise / graph information and interpret results Complete second analysis Input the newly refined dataset into the model Start sense making from IDI output to date in order to be ready to present at the next all comers meeting	Start the analytical peer review Send off chi-square tests for phase 1 checking Put together the initial results and start noting trends and findings	Look at the results together and identify data story Complete third stage of analysis (determinants) Technical expert to review the first part of the model output and send recommendations Data analysts prepare data story to share at the 2nd all-comers meeting	Decide on which methods to use for logistic regression Discuss and agree on next steps to take to decide which outputs are needed from logistic regression Use the modelling results to inform the order of importance and presentation of the findings
IDI	Submit 2nd step analysis for IDI phase 1 checking	Tranche 2 (results of model) for IDI phase 1 checking	Submit 3rd step analysis for phase 1 checking Submit all-comers presentation for phase 2 checking	
Words & Pictures	Plan out a structure for the report and the required components	Complete literature search for the evidence brief Technical writer to start writing up the methodology	Plan structure of evidence brief and begin writing Technical report writing continues	Circulate draft of Evidence Brief to initial group for review Begin collating the group's learning into a How to Guide
Project management	Weekly project meeting	Weekly project meeting	Weekly project meeting	Decide on a limited group for review (need representatives from policy, clinicians, service design, Maori health research, services commissioning) Draft the review requirements – what feedback do we want?
Communication	First all-comers meeting Weekly email updates	Weekly email updates	Data analysts prepare data story as a presentation Weekly email updates	Second all-comers meeting Weekly email updates

	Week 10	Week 11	Week 12	Post-project
Data analysis	Send technical report out for review with wider group Send A3 out for review with wider group Modelling results are back from phase 1 checking	Discussion of feedback : make decisions on whether to incorporate, note for next time, or do nothing Put together results to present at 3rd all-comers meeting		
IDI	Send drafts of A3 and technical report to Stats NZ for phase 2 checking	Make final amendments. Send finals of A3 and technical report to Stats NZ for phase 2 checking		
Words & Pictures	Revisions to evidence brief Revisions to technical report, wrapping it up, finishing it Finishing A3 – thinking about the 'story'	Evidence brief goes to wider group for peer review 'How to guide' goes to internal group for peer review		
Project management	Weekly project meeting Collating feedback and ensuring all outputs ready for release	Weekly project meeting Discussion of the next steps and recommendations from the project		Post-project review: capturing lessons learned
Communication	Weekly email updates Send commentary and graphs from descriptive statistics to the wider interest group as a FYI	Create briefing document for the advisory group by picking out excerpts from the technical report into a briefing	Third all-comers meeting	Co-design symposium: Opportunity for sharing and sense-making across the data and people insights

What we learnt

Be realistic when setting goals and timeframes

Limiting the study population can help you make decisions about including variables and datasets. You can exclude those don't make sense in the context of your population (eg, school data if you're looking at 2-year olds). This makes analysis simpler.

Be disciplined about limiting the analysis to a key set of variables (you can always add more later). Ideally, keep it to less than 20 to make the analysis manageable.

Use these criteria when choosing datasets to include:

- **Ready for use**: Is the data available for use now?
- **Person-specific**: Is the data at an individual (and event) level?
- **Sufficient coverage**: Does the data cover a large enough sample of your target population when broken down by three or more variables?
- **Current**: Does the time period cover the last five years?

Hint: Use the IDI!

- There are a large number of health and non-health datasets already available.
- Linkages have been done.
- Analysts have a good chance of gaining access within a relatively short timeframe.
- Use the Social Investment Measurement Map to find measures available in the IDI.

Data scientists: record the methodology used and decisions made as you go.

Branding the outputs needs to be considered as part of the partnership process

It takes up to 10 working days for phase 2 output from the IDI to be approved for release, which means that the project has to be done 2 weeks before delivery of outputs.

Set common definitions

TOP TIP

Be aware of IDI sign out timeframes and requirements:

The IDI has very strict rules around who can see output, when. This is to protect confidentiality and the integrity of Statistics NZ. The challenge for data analysis projects is that the IDI processes take time. Projects like this have short timeframes, and a commitment to sharing early and often. This may mean delays in our ability to share output.

Take an iterative approach to statistics

This manages project risk and enables you to deliver summary statistics regularly (eg, each week). For this project we broke the project into three steps:

Step 1: simple rates/percentages
Step 2: odds/rate ratios
Step 3: determinants

It's an iterative process – don't aim for perfection first time round!

It’s an iterative process

The project process becomes stronger every time we repeat it, document it, and learn from our work.

1st time round: learning to use the IDI, learning to work together in a new way

2nd time round: building on IDI knowledge, developing replicable and repeatable processes and reusable code

3rd time round: teaching others the new skills and knowledge