Choosing Wisely
Australia
An initiative of NPS MedicineWise

Choosing Wisely
Implementation Toolkit
Design

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CONTENTS

DESIGN

Ballarat Health Services – What they did

Hannah Ryan-West was the Choosing Wisely project officer at Ballarat Health Services. She was confident that there were two main causes of the unnecessary testing of venous blood gases (VBG) in the Emergency Department (ED) that had been identified as the project's clinical problem.

In addition to being project officer, she was still a clinical nurse specialist in the ED and knew the ins and outs of the daily work.

However, she also knew that she was just one person and couldn't rely on confidence alone. A process needed to be put in place to confirm the causes.

The project working group decided that the best method was for Ms Ryan-West to conduct face-to-face interviews with the medical and nursing staff in the ED. She interviewed around 50 nurses and 20 doctors, which was 50% of the staff.

And indeed the interviews confirmed what she had thought - that there were two main causes for the unnecessary testing; 1) a systems-based cause and 2) lack of information.

The systems-based cause was "the ease of accessibility to the blood gas machine and the syringes. The blood gas machine was in our ED, so it was so simple and quick to get results and the syringes were in every IV [intravenous] trolley. There was no incentive to not do one," says Ms Ryan-West.

"The other cause was that no guidelines existed on which patient groups were appropriate to have a VBG sample taken and run," she says.

What is design?

Design is the creation of a plan for the implementation of interventions. It involves using data and feedback from people to develop an accurate and full understanding of the clinical problem that your Choosing Wisely project is tackling.

This is done over three stages:

💬 Choose the right clinical problem.

💬 Identify the causes of the clinical problem that you've chosen.

💬 Develop an approach to which interventions will be implemented and measured for impact.

Clinical problem

Clinical problem is defined throughout this toolkit as the test or treatment that's being performed unnecessarily in your health service.

Design and Evaluation

Design and Evaluation are two separate chapters, but they overlap significantly.

They both use methods to measure and analyse. The main difference is that:

💬 Design only occurs during the set up stage of a project.
Its purpose is to help plan and determine which interventions (eg education, audit feedback etc.) will be implemented.

💬 Evaluation occurs in all three stages of a project; set up, deliver and sustain.
It has two key purposes, which are to:

1. assist with the Design to identify the causes of the clinical problem to help determine which interventions (eg education, audit feedback etc.) will be implemented

2. assess the progress and success of a project.

Why is design important?

Choose the right clinical problem

Your health service may have already chosen a clinical problem for your Choosing Wisely project – or you're still looking for a clinical problem to tackle.

Either way, it's essential to firstly confirm that the clinical problem is the right one for your health service.

The clinical problem may seem obvious to you at the start, but it is important to confirm you're on the right track - or whether, in fact, another clinical problem is better suited for your project.

Making the decision involves gathering a mix of quantitative and qualitative information that answers questions including:

Q. Is the clinical problem supported by the evidence?

If it is a Choosing Wisely Australia recommendation, it is already regarded as evidence-based. However your health service can review the evidence again.

Q. Is the timing right?

For example, a project for bronchiolitis in children should ideally be designed in a way that allows the implementation of interventions to be delivered in winter when the condition is at its peak effect.

Q. Does this clinical problem align with strategic objectives?

Particularly, will the sponsor or steering committee champion the clinical problem?

Q. Does the data demonstrate that this area is actually a problem?

For example, can the clinical problem be adequately measured for baseline and outcomes data.

Q. Is the clinical problem large enough to be fixed?

It may be a problem, but if data shows that the difference between current and ideal performance outcomes is small, then showing an impact may be too difficult.

Q. Which units are affected by the clinical problem?

Does it affect multiple units such as pathology and general medicine? Or just one unit such as the Emergency Department (ED)? This can help you decide the size of your project.

Q. Which clinicians does the clinical problem affect?

For example, is it only nurses? Or both doctors and nurses? This will help you identify the clinicians that are impacted by and can change the problem.

Royal Children's Hospital – What they did

When the Royal Children's Hospital (RCH) transitioned from a mainly paper-based to a fully electronic medical record (EMR) in 2016, their ability to design quality improvement projects such as its Choosing Wisely Campaign, was dramatically transformed.

The RCH Choosing Wisely Campaign had initially decided to address clinical problems based on the five recommendations made by the Royal Australasian College of Physicians (RACP) Paediatrics & Child Health Division.

"The EMR enabled us to pull large data sets incredibly efficiently," says Dr Joanna Lawrence, consultant paediatrician and medical lead for the Choosing Wisely Campaign at Royal Children's Hospital.

"We were able to rapidly interrogate our practice... and found that we weren't performing too badly against 3 of the 5 recommendations," says Dr Lawrence.

The project could then choose the clinical problems it should focus on.

"We chose to target bronchiolitis, as this was both a recommendation from the college but is also the commonest reason for hospital admission in infants...so we see a lot of it," says Dr Lawrence.

"We found that we were ordering chest x-rays at a rate of 11 to 12%, when international benchmarks suggested we could reduce this to 4%. As a consequence of over-ordering chest x-rays, we were also prescribing oral antibiotics more frequently, which is not good for patients and not good for antibiotic stewardship," she says.

"Finally we were ordering salbutamol [Ventolin] at a rate of 9% despite guidelines recommending against the use of Ventolin in bronchiolitis."

Identify the causes of the clinical problem

Identifying causes is like finding the key that opens the door to what's actually going on with the clinical problem you have chosen.

In healthcare we can fall foul to the assumption that people and people-driven systems are always rational and predictable.

We often expect that education and training packages will provide the solution.

However there are many different potential causes of a clinical problem. In general terms, they may be described as skills, attitudes, habits, culture, structure, availability of resources, as well as awareness and knowledge.[1]
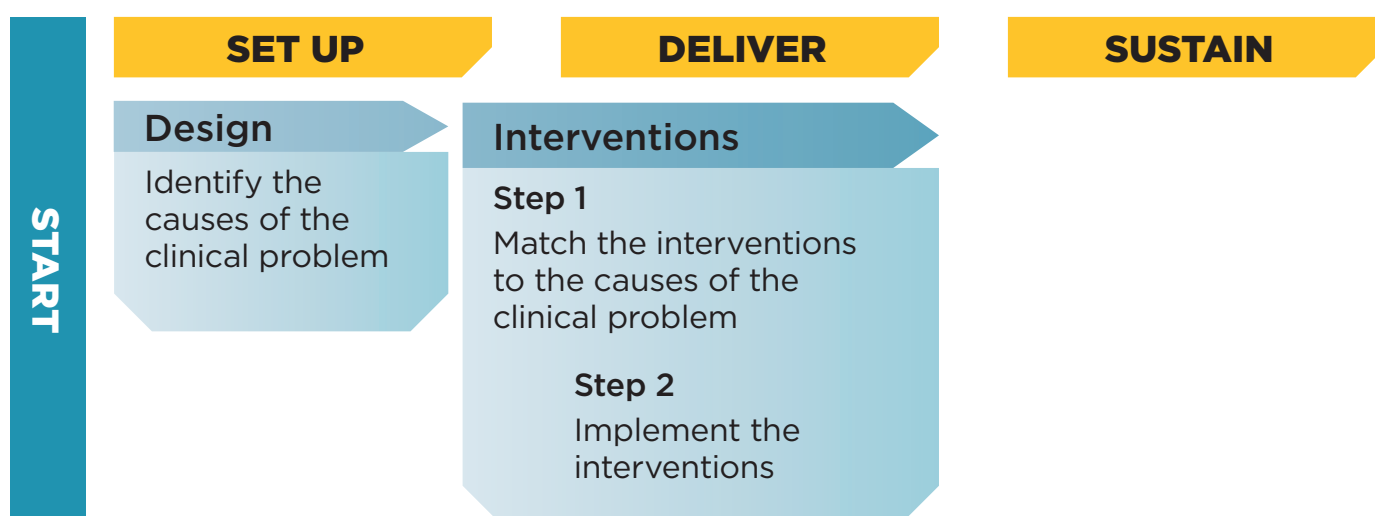
As a result, it's important not to confuse the clinical problem (what outcome are we trying to achieve?) with the behavioural factors (why is the behaviour that causes the clinical problem happening?).

Analysing behavioural factors:

- 💬 focuses on the various people and structures involved and the role they have in reinforcing the status quo

- 💬 considers a problem from a range of perspectives to better understand why it occurs

- 💬 enables you to understand the broader environment in which this problem exists — what will help you, what will hinder you

- 💬 finds things you can leverage or take advantage of, such as previous programs/campaigns or potential partnerships

- 💬 scopes people's beliefs, skills, assumptions and the emotional and attitudinal drivers that influence what they do (or don't do).

What happens once you find the key that opens the door?

The ultimate aim is to help you match interventions to the causes you have identified.

START	SET UP	DELIVER	SUSTAIN
	Design Identify the causes of the clinical problem	**Interventions** **Step 1** Match the interventions to the causes of the clinical problem **Step 2** Implement the interventions	

For example, if lack of knowledge isn't the cause of the clinical problem, rather some clinicians are fearful of missing a diagnosis, then this fear needs to be addressed for your project to be a success.

Matching interventions to causes is explained in the Interventions chapter.

When to design?

START	SET UP	DELIVER	SUSTAIN
	Design		

- 💬 It's recommended that design begins at the start of the set up stage and concludes before the set up stage finishes.

What to do

The recommendations on what to do for the design of your Choosing Wisely project apply to all three stages:

- 💬 Choose the right clinical problem
- 💬 Identify the causes of the clinical problem that you've chosen
- 💬 Develop an approach to which interventions will be implemented and measured for impact.

| Understand | ➕ | Test with data | ➕ | Define |

These recommendations are based on three key areas for the clinical problem:

Understand the clinical problem

Unfortunately there's no single way to break down a problem and examine its constituent parts. This is due to the dizzying number of factors including; mechanisms, people and processes involved in health care.

However, there are behaviour change models that describe elements such as individual motivation, organisational structures, quality drivers, behavioural barriers and more.

Here are 4 validated models recommended to help better understand the possible causes of the clinical problem:

1. Systems; Ferlie and Shortell quality improvement framework.[2]
2. Behavioural drivers; Michie theoretical domains framework.[3,4]
3. Motivation; Proschaska and Diclemente transtheoretical model.[5]
4. Pre-requisites to implementation; Glasziou evidence to practice pipeline.[6]

📖 Read the following:

- 💬 *Choosing Wisely Collaboration Implementation Toolkit Workshop 1*

  Four important perspectives – Pages 9–17

Using data to test the clinical problem

Once you have an understanding of the clinical problem, the next step is to gather information that is divided into two categories:

1. Qualitative; such as a survey asking why and when a test or treatment is being performed.
2. Quantitative; such as a data extract that shows how often a test or treatment is being performed.

More often than not, a mixed methods approach that uses both qualitative and quantitative methods is best.[7]

The population being evaluated can include:

- 💬 clinicians; individual, team, unit (department), hospital or health service
- 💬 patients/consumers.

Keep in mind that we usually come at a clinical problem with confidence and assumptions that we know what's going on, and it is important to test them with a range of different roles and personalities in your health service.

This can be done in very formal and structured ways or in less formal ways, depending on the time that you and other people have available for the project.

Qualitative

Qualitative information usually explores experiences, behaviour, perceptions, thoughts and feelings through gathering non-numerical, textual data about individuals and groups of people you are trying to influence.[7] The recommended methods for gathering qualitative information include surveys, interviews and observation.

Quantitative

Quantitative information explores patterns, trends and impacts through gathering numerical data. It is usually made up of data extracts from the health service medical records and test ordering systems.

Define the clinical problem

This involves making a clear statement about:

- 💬 what is the clinical problem
- 💬 what are its causes
- 💬 what is the proposed change to the clinical problem that is your project's aim.

The proposed change can be stated both as qualitative and quantitative goals, such as a percentage reduction of the test being ordered or percentage increase of prescribing a treatment according to guidelines.

With the clinical problem defined, you can plan your interventions to address it and design an evaluation approach to measure the impact of your interventions.

St Vincent's Hospital Melbourne – What they did

One of the clinical problems tackled by the St Vincent's Hospital Melbourne *Choosing Wisely Collaborative Project* was unnecessary observations and arterial blood gases (ABGs) testing for patients in the department of critical care medicine (DCCM) who were deemed 'ward ready'.

A root cause analysis of why the clinical problems were happening was conducted.

It involved small workshops with frontline DCCM nursing staff and completing a *Cause and Effect Diagram* (also called a 'fishbone tool'), where staff were encouraged to discuss their thoughts around contributing factors to the completion of unnecessary ABGs and observations.

"The fishbone tool allowed staff to focus their thoughts around key areas such as process, environment, equipment and more," says Clare Hammer, continuous improvement coach at St Vincent's Hospital Melbourne.

"In addition to this, informal discussions with frontline staff also took place to gain a sense of why the unnecessary testing was happening," she says.

It found the causes for the unnecessary observations and ABG testing included:

- 💬 fear of repercussions e.g. 'missing' patient deterioration

- 💬 'we have always done it that way' (DCCM culture)

- 💬 assumption that ownership of the decision to reduce observations and test frequency lies with medical staff.

Identifying the causes helped them proceed with the development of the design of the project.

Tools and Resources

Templates

💬 Choosing the right clinical problem

Priority area identification algorithm

💬 Identifying causes of the clinical problem

Institute for Healthcare Improvement (IHI) - QI Essentials Toolkit
(free access after you register)

Cause and Effect Diagram section for root cause analysis
(also called a fishbone diagram); Pages 3–6

Examples

💬 *Cause and Effect Diagram* developed by St Vincent's Hospital

Further information

💬 *Psychology of behaviour change*

The Institute for Healthcare Improvement *white paper* IHI Psychology of Change Framework

💬 *Understanding drivers of behaviour and how to match interventions to them*

COM-B ('capability', 'opportunity', 'motivation' and 'behaviour') model

💬 *Seminal papers*

Summary of different categories of interventions and the rationale for them for changing healthcare.

Grol R. Personal paper. Beliefs and evidence in changing clinical practice.
BMJ. 1997 Aug 16;315(7105):418-21

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2127297/pdf/9277610.pdf

A set of domains (eg knowledge, beliefs about consequences, and more) that enhance understanding of the behaviour change processes inherent in implementation of evidence-based practice.

Michie S, Johnston M, Abraham C, et al. Making psychological theory useful for implementing evidence based practice: a consensus approach.
Qual Saf Health Care. 2005;14(1):26-33.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1743963/pdf/v014p00026.pdf

Provides understanding of the cognitive biases that lead clinicians not to choose wisely.

Scott IA, et al. Countering cognitive biases in minimising low value care.
Med J Aust. 2017 May 15;206(9):407–411.

https://www.ncbi.nlm.nih.gov/pubmed/28490292

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6. Glasziou P, Haynes B. The paths from research to improved health outcomes. ACP J Club 2005;142:A8–10. *https://www.ncbi.nlm.nih.gov/pubmed/15739973*

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