Choosing how to collect data

This document lists things to think about when choosing how to collect data to evaluate your knowledge translation (KT) activities. It summarizes the advantages and challenges of common approaches.

Different ways to collect data

You can choose between many methods to evaluate your KT activities, depending on the type of data that will best answer your evaluation questions.

You will probably be familiar with formal research designs that people use to collect data, including experimental designs (like randomized controlled trials) and observational designs (like before and after studies). The design and methods used for evaluation are not usually as large or structured as these research approaches, but evaluation is just an applied form of research so it is possible to use many different 'research' methods for evaluation.

KT evaluations mainly use an **'observational' research design**, not an experimental design. This is because it is not usually practical to assign people randomly to groups and compare different KT interventions. So KT evaluations often use 'observational' designs which monitor changes over time or collect data at one time point without having any experimental intervention groups.

The most common data collection methods for evaluating KT include website and social media analytics, surveys, interviews and case studies. Some of these methods are more quantitative (focused on how much or how many things happen). Other methods are more qualitative (focused on words, reasons and ideas).

Qualitative	Quantitative
Methods that provide rich detail on impacts but are not numerical and do not produce easily comparable or summable data	*Methods producing numerical data that is comparable but may not contain details on complex impacts*
For example: • Interviews • Narratives or stories • Focus groups • Social media or text • Ethnographic	For example: • Bibliometrics and altmetrics • Questionnaires / surveys • Financial, numerical or trend data sets • Economic data (costs, monetarised benefits, willingness to pay, created jobs,...)

Data collection methods can also be divided by whether they focus more on what people do or what people say (behaviours/skills versus attitudes/confidence). The diagram below categorizes where common KT evaluation methods fall along this continuum.

The most appropriate data collection methods depend on the **KT indicators** you are focusing on i.e. whether you are interested in measuring processes, the reach of your work, the usability of your work or whether people are using or changing as a result of your KT.

- If you are focusing on **processes**, you will probably use a mixture of qualitative and quantitative methods to collect data. Here you are probably looking at 'what people say' and 'how many and how much' in the diagram above. For example, you might review records about what has been done and how many outputs have been produced, plus interview team members to hear how they think things are going and what could be improved.

- If you are interested in the **reach** of your work, you will likely use mainly quantitative methods to find out how many people are accessing your materials or attending your training. You will probably focus on methods that look at 'what people do' and 'how many and how much' in the diagram above. Examples of common methods here include activity logs and online analytics.

- If you are interested in **usability**, you are looking at how easy it is to find your work, whether people feel it is relevant and whether they trust Cochrane evidence for instance. You could use either qualitative or quantitative methods. You will be interested in 'what people say' and 'why/how to fix it' in the diagram above. You might undertake a survey, interviews or focus groups.

- If you are interested in whether people **use** your work to change their knowledge, confidence or behaviour, you can use qualitative or quantitative methods. If you are focused on changes, you might use a 'before and after' design to monitor differences over time. Here you are probably interested in 'what people do' and a combination of 'how many and how much' and 'why' in the diagram above. Methods might include surveys, interviews and observation.

If your evaluation questions involve abstract concepts or it is difficult to measure your outcomes, it helps to use more than one method to collect data.

Examples of measuring 'use'

Here we spend a little time discussing ways to collect information about 'use' outcomes because we often want these outcomes with our KT work but they can be difficult to measure.

The three best ways to measure whether people's knowledge, confidence or behaviour changes are probably:

1. **observing** what people say or do before and after your KT activity
2. asking people what they think or do **before and then again after** your KT activity
3. **comparing people** who have seen or used your KT work with people who haven't

The table below provides some examples of methods to collect data about these outcomes.

Outcome	Examples of data collection methods	When to measure
Improved knowledge	• Tests or quizzes to check knowledge of specific content, perhaps at different time points • Self-reported knowledge of a topic using a survey or interviews • Observations of people using knowledge in their work or when answering questions in a group after new information is presented	Ideally before and after KT activities to show changes over time May want to follow up several months after KT activities to see whether knowledge is retained
Improved confidence or attitudes	• Self-reported knowledge of a topic using a survey or interviews • Observation of how confident people appear applying their knowledge in practice	Ideally before and after KT activities to show changes over time Attitudes can change a lot so may be important to have several repeated measures
Changed behaviour	• Website or social media analytics showing changes in the length of time people spend looking at online content • Statistics or records showing that something has been done e.g. inclusion of Cochrane review in clinical guidelines • Observation of behaviour in practice • Self-reported behaviour or intentions using interviews, surveys or focus groups • Activity logs or diaries, where people keep a record of what they do	Ideally before and after KT activities to show changes over time Self-reported behaviour is often unreliable, especially if people are asked to reflect on actions some time in the past

For example, imagine you included more videos of audience members on your website. You could see whether people were interested by using website analytics to look at the amount of time people spent on your website before and after you changed the content. Looking at whether the number of visitors coming back is increasing might be another indication that people liked what you've done.

Of course, looking at website analytics wouldn't tell you whether your content has influenced people's decisions or behaviour. To find out that you would have to ask them. But measuring the **indicators of 'time spent on website' and 'proportion of repeat visitors'** gives you an idea of whether people might be engaging more with your new content after you added the videos.

It doesn't usually work well to ask people to think back and tell you if they've changed what they think or do compared to the past. The best way to monitor changes over time is to ask people for their views directly at different time points. You do not need to ask the same people over and over if that is not possible. You can look at whether the average feedback changes over time.
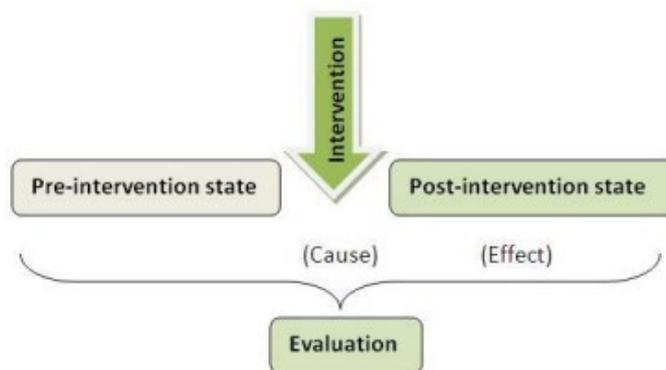
This is sometimes possible to do in KT activities that involve training, meetings, mentoring or similar.

For instance, one Cochrane Group ran a workshop to help healthcare consumers increase their confidence to use synthesized evidence. When people registered online for the workshop, they were asked to rate how confident they were in using research evidence. After the end of the workshop, everyone was sent another survey with the same questions. The 'indicator of success' was the **change in the proportion of people who said they felt confident** using research evidence. The data collection method was a survey before and after the workshop.

Another Cochrane Group wanted to know whether healthcare professionals who read a Cochrane Plain Language Summary were more likely to provide a certain evidence-based treatment than professionals who had not read the summary. The indicator of success was the **difference between groups** in the proportion who said they had recommended the treatment to their patients. To collect data about this, the Cochrane Group emailed a survey to a group of health professionals in one city. They asked people whether or not they had read the Cochrane summary and whether or not they had recommended the treatment in the past six months. They could then compare the self-reported behaviour of people who said they had and had not read the summary.

Your KT evaluation design will not 'prove' that your KT activities caused people to think or act differently. There are lots of other things that might influence what people do. But by collecting evaluation feedback directly from your audiences at multiple points in time, you can start to build up a picture of whether you're making a difference.

Methods: advantages and challenges

All data collection methods have advantages and limitations.

Method	Good for	Main advantages	Main challenges
Webpage / social media statistics	Finding out how frequently your KT content is being viewed and where in the world viewers come from	• Easy to get and use • Inexpensive (analytics provided by websites) • Can compare over time	• Does not tell us whether people are using evidence or what they think of it
Questionnaires	Getting a large quantity of simple information relatively quickly and in a non-threatening way	• People do not need to give their name or organization • Inexpensive • Able to track changes over time if done repeatedly • Can be done online or via email to reduce cost • Can reach a relatively large number of people • Free tools available for building survey • Many surveys are available online to be adapted	• Does not get detailed feedback or the 'story' behind what people say • Only accessible to those comfortable reading and writing in the survey language • Question wording and format can influence people's responses • People get tired of surveys
Interviews	Getting detail about how people access and use KT outputs and evidence	• Able to probe for detailed information • Can help develop relationships and lead to other things • Can be done in person, by telephone or online	• Can be time consuming to organise, conduct and analyse • Can take more effort to draw out themes and compare • Interviewer interactions can influence feedback
Discussion groups	Getting detailed feedback and being able to brainstorm as a group, including with influential stakeholders	• Can get detailed impressions from a number of people in a shorter time than individual interviews • Can hear how people react to the views of others • Can be done virtually or in person	• Can be time consuming to organise if need to fit in with stakeholder schedules • Can be challenging to draw out themes • People may not feel comfortable disagreeing with each other
Asking people for informal feedback by email/phone	Can get quotes to use and ask a targeted question about a specific KT activity	• Quick and easy to implement and for people to respond to	• May not get a large response • Not likely to be generalisable
Case stories	Describing what happened to one person or with one activity in detail	• Delves into detail about the case • Provides rich 'story' data	• Focuses on depth of information, rather than breadth • Can be superficial if not done comprehensively
Observation	Seeing how an activity actually operates, including the processes used	• Collects first-hand experience of how something happens • Observer can see things that those running the activity are not aware of	• Can be difficult to analyse and interpret • Can be time-consuming • Observer presence can influence behaviours

How to choose between methods

Choose data collection methods that will give you the most useful information to make decisions or achieve your goals in a way that is feasible within your time and resources. You could ask yourself the following questions to help decide between different ways to collect data:

Things to consider	Potential methods
Evaluation purpose	
• What information is needed to make decisions or achieve the evaluation goals?	If you are interested in how many or how often things happen, use methods like surveys and online analytics. If you want to know why something happens or how people feel, use methods like interviews and focus groups.
• Who will use the information?	If the information will inform your Cochrane Group to make quick decisions, more informal methods with smaller numbers of people might work e.g. interviews. If you want to use your results with funders, you may need larger samples and more robust methods.
• Do we need to be able to generalize widely? Will the information appear credible to decision-makers e.g. funders?	If you need to generalize, you probably need to use a method where you can collect feedback from a large number of people e.g. a survey. You might want to collect data at repeated time points.
• Do you want to be able to track changes over time?	If so, use a method where the same questions can be asked in a similar way, like surveys or online analytics.
Resources	
• What information do we already have access to?	The more extra information you need to collect, the more time and other resources it will take. See if you can answer your evaluation questions from information you already have.
• How quickly is the evaluation information needed? How much time can we devote to collecting and analysing data?	Interviews and observation can take a while to organize and analyse. If you need information very quickly, you could setup a short meeting with some audience members or send an email asking for feedback.
• Do we have the skills to implement the methods now or is training required?	Simple surveys and informal discussion groups are relatively quick and simple to do. You might benefit from some external help to conduct and analyse very detailed interviews or those asking sensitive questions.
• Are there any financial costs involved? Are there any opportunity costs?	Online analytics and surveys don't usually cost must to do. Interviews can get more detailed and rich information, but can take more time – and that is time you can't spend on other things.
Feasibility	
• Will the method(s) be acceptable to the target audience?	If you want feedback from people who don't read confidently or who use another language than you, a friendly conversation may be better than a survey. Busy policy-makers or health professionals may not respond to emailed requests for help.
• Will it be quick and easy to analyse the data?	Interviews can generate a lot of detailed information that takes longer to analyse. Surveys can be done in online apps that generate graphs and statistics for you.
Other considerations	
• Are we using a range of approaches so we can compare the results from different angles? • Is any ethical approval required and how long will this take? • Could there be any impact on our reputation?	