



**title** The use of Delphi method for remote consultations

**author**

**Kylie Woolcock**

Policy Director

Australian Healthcare and Hospitals Association

Email: [kwoolcock@ahha.asn.au](mailto:kwoolcock@ahha.asn.au)

## Background

Partnership approaches between health services, clinicians, consumers, researchers, administrators and policy makers have been identified as critical to achieving transformational change (Jackson et al 2014; Janamian et al 2016). Engagement opportunities and platforms are wide-ranging, face-to-face discussions, online information sharing, collaborative product development, physical spaces for knowledge exchange and problem solving, site visits, open forums or joint ventures – with each being able to be used in different ways, to achieve different objectives (Janamian et al 2016).

However, as the world grapples with the health and economic impacts of the coronavirus pandemic (COVID-19), and individuals reorient to work and life within the confines of their homes, the opportunities and platforms for engagement have reduced. The need to engage, however, remains as important as ever. Across all industries, there have been reports of increased use of technology to connect and work collaboratively, and while more sophisticated technology is increasingly available, the appropriateness of the methodology for engagement is important to consider.

A common methodology that the Australian Healthcare and Hospitals Association (AHHA) has used to engage stakeholders, where face-to-face contact is not possible, is the Delphi method; which has primarily been used to obtain and integrate the opinions of a group of individuals about a complex problem.

This paper describes the key features of the Delphi method, and then discusses our considerations when designing engagement activities, including the strengths we leverage, the risks that must be mitigated, and opportunities for adaptation to meet the unique purpose of engagement.

## Key Features

The Delphi method was developed in 1944 to forecast the impact of technology on warfare. As a testament to its flexibility it has since been adapted and modified in thousands of ways (Keeney 2011).

The premise of the Delphi method is that group opinion is more valid than individual opinion (Keeney 2011). Traditionally, this has been achieved through face-to-face roundtable discussions that arrive at an agreed-upon position. However, the roundtable approach was not without criticism, and outcomes could become a compromise between divergent views, or subject to undue influence from the participant with the 'loudest voice'.

An unwillingness to abandon publicly expressed opinions and the 'bandwagon effect' of majority opinion was also noted to bias outcomes (Helmer 1967).

Through a series of carefully designed, anonymous, sequential questionnaires, interspersed with controlled information and feedback, the Delphi method proposed to achieve the most reliable consensus of group opinion (Helmer 1967). Respondents are able to raise aspects of discussion that might not normally have influenced the opinions of others, with others then able to independently re-evaluate their earlier responses based on these alternative perspectives.

## Designing Engagement

### *Determining the purpose*

Traditionally, the Delphi method has been aimed at gaining consensus amongst a group of individuals, however, with adaptation and modification, it can also be used, for example, to disaggregate and analyse clusters of views, as well as to explore factual arguments around an issue (Keeney 2011).

### *Identifying the 'experts'*

Clear criteria for selecting 'experts' should be identified and applied. Criteria will vary depending on the purpose and scope of the engagement being pursued, but will be critical in the defensibility of the results. Selection is not a random sample representative of the target population, rather, varied expertise and experience are desired in order to bring the breadth and depth of understanding of complex problems (Kenney 2011). Not only does this include those with expert knowledge of factors influencing the problem, but also those affected by the problem and any outcome. Individuals who might provide a minority or differing perspective should be actively recruited (Iqbal & Pison-Young 2009).

There is no ideal number of experts that can take part in the Delphi process, with groups consisting of seven to 1,000 routinely being used in published research. However, groups of between 10 and 50 participants allow for manageable analyses, while maintaining sufficient perspectives (Turoff 2002).

### *Maintaining anonymity*

Anonymity has been a key feature of the Delphi method since it was first introduced. Anonymity allows decisions to be evaluated on their merit, rather than on who has proposed the idea (Skulmoski, Hartman & Krahn 2007) and has been shown to encourage creativity, honesty and balanced consideration of ideas (de Meyrick 2003). Quasi-anonymity can also be useful to support

accountability and defensibility for the views that individuals express; and occurs when 'experts' do not know the author of individual responses, but do know the identity of the other 'experts' being engaged.

Alternatively, quasi-anonymity occurs when the team facilitating the Delphi process know the author of individual responses, but do not disclose who it is (Keeney 2011).

#### *Implementing rounds of questionnaires*

Typically, two or three rounds of questionnaires are sufficient for most discrete engagement activities (Skulmoski, Hartman & Krahn 2007), with the number of rounds ultimately dependent on the time available, how easily consensus between participants is reached, or how easily other objectives are achieved. Traditionally, the first questionnaire is used to generate ideas through open-ended questions for further exploration in subsequent rounds. There is also support for providing pre-existing information for ranking or response. However, this latter approach requires particular attention to ensure responses are not biased or options limited (Keeney 2011).

Questionnaires can be demanding on the time of engaged 'experts'. This can be mitigated through the design process, including through the style and number of questions and the number of rounds administered.

Online survey tools can be an efficient way of administering questionnaires. Commercial products can provide flexibility in design, facilitate rapid deployment and completion, and automate data analysis for minimal cost. The challenge is that this may not be a feasible way of reaching some populations, for example, where there is poor access to the internet, low literacy or cultural barriers (see case example 1). Alternative ways for administering questionnaires should be considered where these populations feature in the 'expert' group.

#### *Providing controlled information and feedback*

The Delphi method is not without criticism and has been viewed by some as a move away from quantitative scientific evidence to qualitative opinion. However, such criticisms highlight the importance of the administering team. Question design, collation of responses, research and dissemination of outcomes are as critical as the team's ability to construct further questions to support 'experts' in re-evaluating their original responses.

With no agreed standards on how the administering team does this, it is important to ensure that it be undertaken by people with subject expertise and an understanding of context; the skills to undertake rapid reviews of

evidence and perform environmental scans; and an ability to impartially develop the information that is fed back to 'experts' in sequential rounds of questionnaires. Questions must be well phrased and definitive so as the reliability and validity of results are not threatened (Keeney 2011).

A clear decision trail of all key theoretical, methodological and analytical decisions made from the beginning to the end is essential to improving methodological rigor, with audit trails helping to substantiate the trustworthiness of the engagement outcomes (Skulmoski, Hartman & Krahn 2007).

#### *Analysis and outcomes*

Outcomes achieved through the Delphi method should not be misinterpreted as the 'correct' answer. Rather, outcomes reflect the consensus of a group of experts on an issue or issues under exploration (Keeney 2011). As such, it is particularly suited for issues where there is incomplete knowledge (Skulmoski, Hartman & Krahn 2007). The deliberations that unfold during the process can be as useful to the purpose for engagement, as the outcomes themselves, if not more useful.

### Case Example 1 *Aboriginal and Torres Strait Islander People*

Engagement with Aboriginal and Torres Strait Islander people has also been facilitated using the Delphi method. A Delphi panel of 27 Aboriginal and Torres Strait Islander people, experts in Indigenous suicide prevention, was used to re-develop consensus guidelines on the provision of mental health first aid for Australian Aboriginal and Torres Strait Islander people (Armstrong et al 2018). The impact of primary healthcare on the health of Aboriginal and Torres Strait Islander people was studied with a Delphi panel of non-Indigenous and Aboriginal experts to develop insight (Griew et al 2008). Indigenous Australians were part of a Delphi panel of experts in Indigenous cardio-metabolic health from Australia, New Zealand and the United States who were brought together to identify key priorities to improve cardiac health (Stoner et al 2017).

### Case Example 2 *Blueprint refresh with a focus on workforce*

In 2017, the AHHA developed, with healthcare leaders and members across the sector, a blueprint on how to transform our healthcare system to meet the needs and expectation of Australians with a focus on outcomes and value ([AHHA 2017](#)). The blueprint was developed to be visionary, yet feasible, with

clear recommendations about the steps that can be taken in the short term in order to achieve medium and longer-term goals.

While progress had been made in some areas, in 2019 it was identified that more targeted work was needed in specific areas, including to identify the steps that will enable the health workforce to better address individual and population needs, effectively, equitably and efficiently.

At a roundtable of members and stakeholders, a number of areas for action were proposed for enabling integrated, team-based care and services centred on people's needs. To refine and prioritise these areas for action, a modified Delphi method approach was used.

A panel of approximately 20 'experts' was established reflecting diverse perspectives. In the first-round questionnaire, the areas for action proposed by the roundtable were shared with experts who were asked to prioritise and refine the areas, as well as identify additional areas for action. Responses to the questionnaire were compiled and a summary was returned to all members. A second-round questionnaire, accompanied by relevant evidence on key issues, was administered.

This method of engagement was successful in allowing diverse views to be effectively considered around a complex issue. The outcomes will underpin the basis of supplementary recommendations to the original blueprint, and inform AHHA policy and advocacy.

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**contact**

Dr Rebecca Haddock  
Deeble Institute for Health Policy Research  
Australian Healthcare and Hospitals Association  
E: rhaddock@ahha.asn.au  
T: 02 6162 0780  
Tw: @DeebleInstitute

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