



MODIFIED DELPHI METHODOLOGY

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15th March 2019



Overview

- Introduction to the Delphi process
- When it is used
- Why we chose this process
- Applications – our experience

What is The Delphi Process

- One of several methods developed to identify the collective opinion of experts.¹
- Originally developed in 1950s as a tool to forecast the impact of technology on warfare, it has since come to be used in a variety of health and medical settings.¹
- The Delphi technique has four main characteristics²:
 - *Anonymity*
 - *Iteration with controlled feedback of group opinion*
 - *Statistical aggregation of group response*
 - *Expert input*

¹ Fitch, K., Bernstein, S. J., Aguilar, M. D., Burnand, B., & LaCalle, J. R. (2001). *The RAND/UCLA appropriateness method user's manual* (No. RAND/MR-1269-DG-XII/RE). RAND CORP SANTA MONICA CA.

² Trevelyan, E. G., & Robinson, N. (2015). Delphi methodology in health research: how to do it?. *European Journal of Integrative Medicine*, 7(4), 423-428.

When is it used?

- The Delphi method is recommended for use in the healthcare setting as a reliable means of determining consensus for a defined clinical problem ^{1,2,3}
- Useful for establishing guidelines on standard practice of care or Quality Indicators⁴
- Our experience with the Modified Delphi Process:
 - *Defining a standard set of Quality Indicators for Breast Device Surgery – using registries for global benchmarking. (Paper Under Review)*
 - *A globally agreed minimum data set for breast implant surgery. (Paper Under Review)*
 - *Improving REporting of DAta from Registries (IRENDAR) Guidelines. (Paper Under Review)*

¹ Eubank BH, Mohtadi NG, Lafave MR, et al. Using the modified Delphi method to establish clinical consensus for the diagnosis and treatment of patients with rotator cuff pathology. *BMC Med Res Methodol*. 2016;16:56. Published 2016 May 20. doi:10.1186/s12874-016-0165-8

² Wood L, Black P, Heng D, Kollmannsberger C, Moore R, Soulieres D, Jewett M. Using the Delphi technique to improve clinical outcomes through the development of quality indicators in renal cell carcinoma. *J Oncology Practice*. 2013;9(5):262–7. doi: 10.1200/JOP.2012.000870.

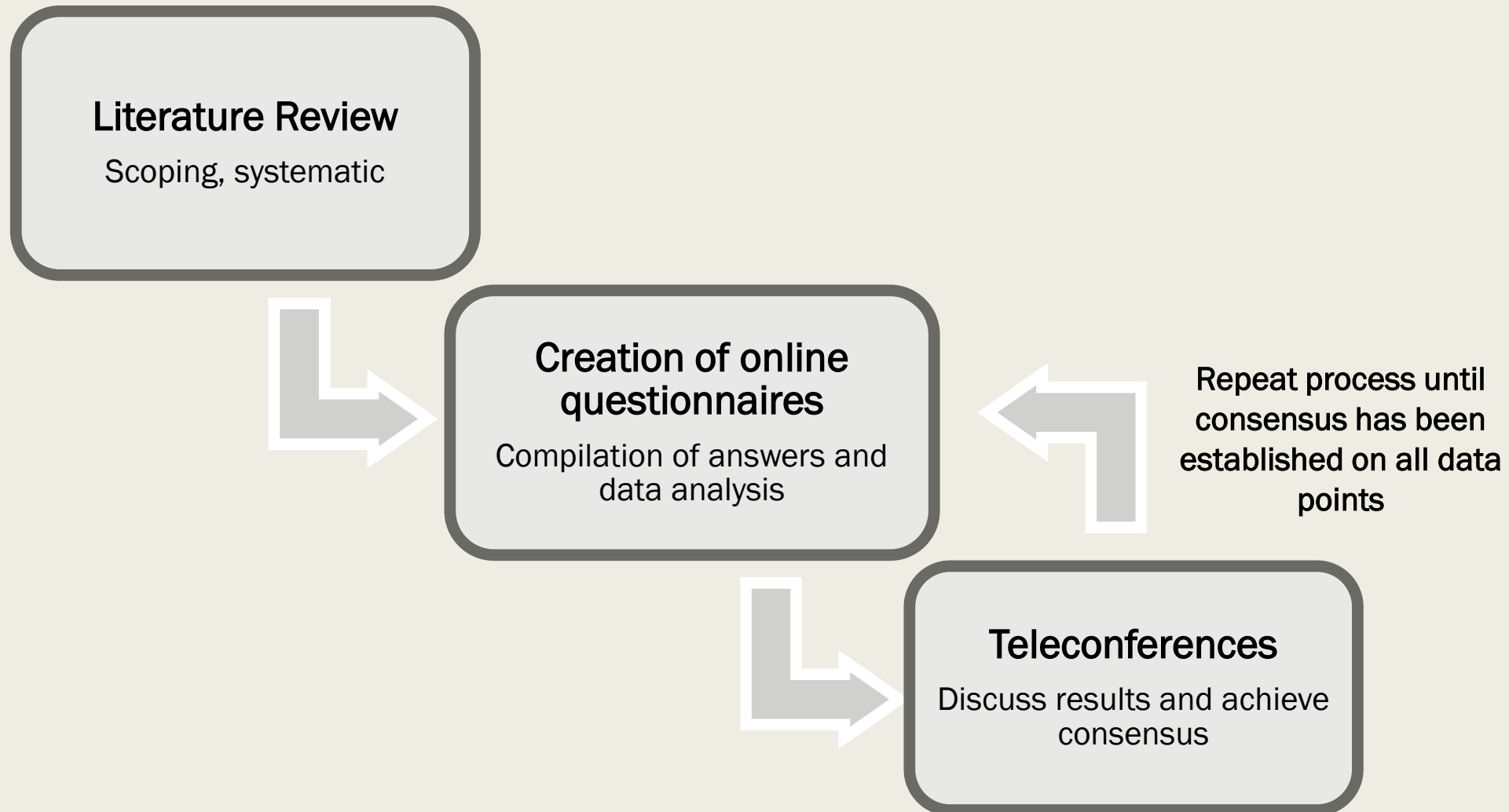
³ Meshkat B, Cowman S, Gethin G, Ryan K, Wiley M, Brick A, Clarke E, Mulligan E. Using an e-Delphi technique in achieving consensus across disciplines for developing best practice in day surgery in Ireland. *J Hosp Adm*. 2014;3(4):1–8. doi:10.5430/jha.v3n4p1.

⁴ Boulkedid, R., Abdoul, H., Loustau, M., Sibony, O., & Alverti, C. (2011). Using and reporting the Delphi method for selecting healthcare quality indicators: a systematic review. *PLoS one*, 6(6), e20476.

Why did we choose the Modified Delphi process for the Quality Indicators

- Lack of recommended guidelines for breast device surgery.
- Surgeons belong to different craft groups – plastic, reconstructive, cosmetic.
- Studies are predominantly retrospective or post market surveillance studies.

Workflow



Areas to consider when designing a Delphi Study¹

- Expert panel selection
 - *Panel size*
 - *Expertise of panel*

- Initial items / statements
 - *Scoping / Literature review*
 - *Open ended questions*
 - *Rating scale*

¹ Trevelyan, E. G., & Robinson, N. (2015). Delphi methodology in health research: how to do it?. *European Journal of Integrative Medicine*, 7(4), 423-428.

Areas to consider when designing a Delphi Study¹

- Statistical criteria
 - *Median score*
 - *Disagreement score according to the Interpercentile Range Adjusted for Symmetry (IPRAS), calculated with the formula provided in RAND users' manual²*
 - *Total of 70% or more panellists voting either 5/6 or 1/2*
- Results Feedback
 - *Anonymity*
 - *Individual response compared to the group response*
 - *Adequate time to prepare for discussion*

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Areas to consider when designing a Delphi Study¹

■ Teleconference

- *Mode (Online invite to comment, face-to-face, Online video)*
- *Duration of the discussion*
- *Discussion points*
- *Moderator*

■ Terminating the Delphi process

- *Decide on optimal rounds at the start*
- *Terminate when there is consensus or no further consensus can be achieved*

¹ Trevelyan, E. G., & Robinson, N. (2015). Delphi methodology in health research: how to do it?. *European Journal of Integrative Medicine*, 7(4), 423-428.

Strengths

- Teleconference moderator
 - *Discussions during the teleconference*
 - *Moderator should ensure fairness, i.e. ensure no one person dictates the discussion / lead it in one direction*
- Well engaged panellists
 - *Survey response rate*
 - *Teleconference participation*

Strengths

- Robust methodology / statistical rigour
 - *Involve statistician*
- Allows for a multidisciplinary panel of national and international panellists to be involved, including those across different clinical specialities, consumer representative, nurse, biostatistician etc
- Promotes healthy discussion amongst experts to reach a unifying consensus
- Key in working towards establishing guidelines and towards standard practice of care
- Identifies gaps in knowledge in current literature and guides future research

Recommended readings

- Fitch, K., Bernstein, S. J., Aguilar, M. D., Burnand, B., & LaCalle, J. R. (2001). *The RAND/UCLA appropriateness method user's manual* (No. RAND/MR-1269-DG-XII/RE). RAND CORP SANTA MONICA CA.
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Acknowledgements

- Dr Ingrid Hopper and the ABDR team
- A/Prof Arul Earnest and Mr Mark Tacey
- Prof Sue Evans and the PCOR team
- Prof Allen Cheng
- Prof Belinda Gabbe
- Prof Sally Green
- Ms Lorena Romero

THANK YOU!!

