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Leveraging Quantitative Patient Preference Methodology into Clinical Trials

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Aura Cecilia Jimenez Moreno
Please provide a brief biography for the Presenting author(s)
Cecilia Jimenez-Moreno, PhD, has extensive experience in managing and conducting patient preference studies. With almost 15 years of experience in patient-centric research across various settings and methodologies, including clinical trials, quantitative and qualitative studies, she has worked in academia and the industry sector. Her PhD in human genetics focused on validating clinical outcomes applicable for rare neuromuscular disorders. During her post-doctoral research, Dr. Jimenez-Moreno led the case study for the IMI-PREFER Project, responsible for designing and delivering an international patient preference study in neuromuscular disorders. This case study was the first of its scale, posing a particular challenge in the field of rare diseases. Dr. Jimenez-Moreno continues to be a member of the PREFER experts network and leads the workstream investigating areas of interest for future research. She is also a member of the PFMD Patient Experience DataPatient Preference Studies (PED-PPS) workstream. In addition to these projects, Dr. Jimenez-Moreno has authored and co-authored numerous publications in peer-reviewed journals, including the Journal of Neurology, Frontiers in Medicine, and The Lancet Neurology.

Michael Bui
Please provide a brief biography for the Presenting author(s)
Michael Bui is a PhD candidate at the Health Technology and Services Research section of the University of Twente. His research focuses on the development of methods and guidelines for performing benefit transfers of patient preference information.

Byron Jones
Please provide a brief biography for the Presenting author(s)
Until the end of 2022, Dr Byron Jones was a Senior Biometrical Fellow and Executive Director in the Statistical Methodology and Consulting Group at Novartis Pharma AG in Basel, Switzerland. He is now partly retired and works as an external Novartis employee, specializing in the design and analysis of Patient Preference Studies. He is a Fellow of the American Statistical Association and the co-author of nine statistical textbooks. For the twenty-five years before joining the pharmaceutical industry he worked in academia, ultimately holding the position of Professor of Medical Statistics at De Montfort University, UK. After leaving academia, Byron held Honorary Professorial positions at four UK universities: University College London, the London School of Hygiene and Tropical Medicine, University of Leicester and Queen Mary, University of London. Prior to joining Novartis in 2011 he held senior positions at GSK and Pfizer. He has been the Chairman of the External Advisory Board to the joint University of Oxford and Imperial College London, Center for Doctoral Training and before that he was an advisor to the Department of Statistics at Oxford University. Byron was a member of the ICH Expert Working Group that revised the ICH E8 guidance on "General Considerations for Clinical Studies". Byron was a Series Editor for the Chapman and Hall/CRC Press' Biostatistics book series, a Founding Editor-in-Chief of the PSI journal Pharmaceutical Statistics, formerly an Associate Editor of JRSS Series B and a Regional Editor of the Journal of Biopharmaceutical Statistics. He has been a Board of Directors' member of PSI (Statisticians in the Pharmaceutical Industry) and in 2016 led the successful campaign to save PSI from being overtaken by a larger statistical society. He is passionate about Patient-Focused Drug Development and the use of patient preference

studies to understand the needs of patients. He was a member of the PREFER consortium and is now a member of its follow-up body, the Patient Engagement Network.

Conny Berlin
Please provide a brief biography for the Presenting author(s)
Conny Berlin is an Executive Director Patient Experience Data Science at Novartis. She holds a diploma in mathematics and has been working in the pharmaceutical industry for 30 years. Conny is a scientific leader with significant experience in drug development and talent development. Between 2012 and 2021, she led the Quantitative Safety & Epidemiology group at Novartis, which supports clinical teams with analytical strategies to best assess patient safety. Since 2022, Conny has been leading the Patient Engagement Science group at Novartis, a team of scientists who drive and support the implementation of patient -focused drug development. This includes the design and conduct of patient preference studies to better understand what is important to patients, as well as the setup of concepts to involve patients in the design of clinical development programs. During her career, Conny successfully led several initiatives at Bayer and Novartis to develop and implement cutting edge signal detection methods and tools, new safety analysis approaches for specific safety risks, and structured benefit risk. Between 2016 and 2022, she was the industry lead of IMI PREFER, a public private consortium that developed the PREFER Recommendations including a frame work and points to consider for method selection for patient preference studies.

J.A. (Janine) van Til
Please provide a brief biography for the Presenting author(s)
Dr. Janine van Til (female), PhD is an associate professor in health preference research at the department of Health Technology and Services Research at the University of Twente since 2007. She received her master degree as a health and movement researcher from the Vrije Universiteit Amsterdam in 2001 and her PhD degree for her work in supporting shared decision making in the treatment of stroke patients in 2009. Dr. Janine van Til’s current research is focused on supporting shared decision making with the use of quantitative value elicitation techniques. Moreover, she aims to increase patient and public involvement organizational and societal decision making in health care. Currently, she is involved in projects related to the improvement of patient care after post-anoxic coma, cardiovascular disease, and cancer. She is a member of the International Academy of Health Preference Research, the society of Medical Decision Making and the special interest group for health preference research at the Professional Society for Health Economics and Outcomes Research (ISPOR). Her methodological expertise includes the design, analysis and interpretation of health preference studies (conjoint analysis, best worst scaling) and multi-criteria decision analysis.

C.G.M. (Karin) Oudshoorn
Please provide a brief biography for the Presenting author(s)
Professor at the Department of Health Technology and Services at the University of Twente. With research across her degree focusing What Can Discrete-Choice Experiments Tell Us about Patient Preferences? An Introduction to Quantitative Analysis of Choice Data, among other projects.

Single topic, multi-speaker session, Workshop or Single presentation submission

A single topic, mutli-speaker session/workshop

Single topic session or workshop abstracts

Patient preferences—values and priorities assigned to health outcomes—are vital in healthcare decision-making. Incorporating these preferences can improve trial design and enhance the relevance of the trial findings when submitting the dossier. This session will explore the use of quantitative methodologies for assessing patient preferences and discuss

their potential benefits, opportunities, and challenges for stakeholders involved in Clinical Trials.

Background

Patient preferences are multifaceted, encompassing various factors describing a treatment or intervention (e.g., efficacy, safety, and treatment burden). Methods to quantify patient preferences provide a structured approach to measuring them, enabling researchers to gain valuable insights into patient priorities and benefit-risk trade-offs they are willing to make. Examples of these include:

- Discrete Choice Experiments (DCEs) present participants with hypothetical treatment options that share the same attributes at different levels, requiring them to make trade-offs when choosing one option over another.
- Time Trade-off (TTO) asks participants to trade off time in a healthy state for a longer life with a health condition (or with no improvement of a symptom).
- Thresholding Exercise pushes participants to choose between the varying attributes until one of the attributes becomes no longer “enough” for them to prefer that option.
- Best Wors Scale (BWS) asks participants to repeatedly choose the best and worst option from a set of attributes uncovering their overall relative importance with consistency

The Regulatory Perspective

The U.S. Food and Drug Administration (FDA) in their 2022 guidance document, "Patient-Focused Drug Development: Methods to Identify What is Important to Patients," highlights the potential of administering survey instruments in clinical trials to gain deeper insights into patient perspectives on treatment benefits and harms and how this information can be used to inform clinical trial design, the development of clinical outcome assessments, and ultimately, regulatory decision-making. [1]

More recently, the FDA's draft guidance (2024) on "Incorporating Voluntary Patient Preference Information over the Total Product Life Cycle" further underscores the value of patient preferences in shaping drug development. It describes how, by incorporating patient preferences, researchers can inform the clinically meaningful value of their endpoints. [2]

A Systematic Review of Patient Preferences in Clinical Trials

As part of a comprehensive systematic review, the research team aimed to describe the evolution of patient preference studies and investigate their implementation in clinical trials. Despite growing interest, this field remains underexplored, highlighting the need for further investigation due to the potential value of these studies.

The Potential Value of Patient Preference for Clinical Trials

The integration of patient preference methods into clinical trials offers several potential advantages:

- Optimisation of samples where recruitment can be a challenge (e.g., rare diseases, stringent eligibility criteria, medical information is required).

- Objective trade-off or thresholding values (e.g., minimum expected benefit – MEB) validating established endpoints (e.g., meaningful change and risk tolerance)
- Identify outcomes of relevance in the voice of the patients, when having to prioritise COAs within a trial
- The sample of your PP study will match the sample of your clinical trial results, allowing unambiguous identification of the patient parameters that influence the patient preference profiles. This can inform the product value message or product market implementation.

**Implications for Implementation: **

However, the team recognises that as much as there are advantages like the ones listed above, we can also expect challenges when implementing patient preferences assessment into a trial.

For example, conducting a preference study before a trial provides the opportunity to inform patient-relevant endpoint selection for trial design. However, this requires careful planning and resource allocation along the medical product lifecycle.

A patient preference study conducted at the end of a clinical trial lets patients express their views on the benefits and risks they experienced. This helps researchers identify the level of risk patients are willing to accept for therapeutic benefits. The findings can support regulatory submissions by demonstrating that patients find side effects tolerable and believe the treatment significantly improves their health.

Example Case Studies

During the session, the presenters will showcase several case studies identified as interesting in the systematic review.

Anderson et al., (2019) evaluated the value that patients place on their upper extremity function as a potential benefit of an implanted electrical stimulation device for spinal cord injury. It found that over 64% of respondents expressed interest in obtaining a stimulation device, even with a success rate threshold as low as 50%, regardless of how much time had passed since their injury. [3]

Ho et al. (2015) utilised a DCE to quantify the importance of safety, effectiveness, and other attributes of weight-loss devices for obesity and identified that for participants to accept a device with a 0.01 % mortality risk, a risk-tolerant patient will require about 10 % total body weight loss lasting 5 years. [4]

Other studies, including those by Fox et al. (2022), Heidenreich et al. (2022), and Katz et al. (2016), utilized patient preference data to inform the benefits assessed in clinical trials. For instance, the findings of Fox et al. (2022) supported the minimum expected benefit established as the primary endpoint of the clinical trial.

Conclusion

To address the challenges and enhance the value of patient preference methods, collaboration and knowledge sharing between statisticians involved in clinical trials and those focused on benefit-risk assessments and market access evaluations are essential. This collaboration would help align the patient preferences measured with the information gathered from clinical trials, ultimately streamlining the process.

Quantitative patient preference methods offer a powerful tool for incorporating patient perspectives into clinical trial design and decision-making by the different stakeholders. As regulatory agencies continue to emphasise the importance of patient preferences, integrating these methods into clinical trials is likely to become increasingly common. With an early understanding of the opportunities and challenges associated with these methods, researchers can develop patient-centered strategies and support their implementation

[1] FDA, 2022 - https://www.fda.gov/regulatory-information/search-fda-guidance-documents/patient-focused-drug-development-methods-identify-what-important-patients

[2] FDA, 2024 - https://www.fda.gov/regulatory-information/search-fda-guidance-documents/incorporating-voluntary-patient-preference-information-over-total-product-life-cycle

[3] Anderson KD, et al., 2019 - Risk-benefit value of upper extremity function by an implanted electrical stimulation device targeting chronic cervical spinal cord injury.

[4] Ho MP, et al. 2015 - Incorporating patient-preference evidence into regulatory decision making.