Multi-Criteria Decision Analysis: Can It Help Make Value Assessment More Patient Centered?

November 2020

Acknowledgements

This report was prepared by the National Health Council and National Pharmaceutical Council based on discussions at a Roundtable on Patient-Centered Multi-Criteria Decision Analysis. It was reviewed by Roundtable participants who provided comments, edits, and additions. This report reflects the discussions from the Roundtable but does not necessarily represent the views of the individual participants.

Advisory Board

- Jennifer Bright, MPA, Executive Director, Innovation Value Initiative
- Jonathan D. Campbell, PhD, Associate Professor, Director, Center for Pharmaceutical Outcomes Research, Director, pValue, University of Colorado (employee of the University of Colorado at the time of this Advisory Board)
- Anna Hyde, MA, Vice President of Advocacy & Access, Arthritis Foundation
- Kenny Mendez, MBA, President and Chief Executive Officer, Asthma and Allergy Foundation of America

National Health Council

- Eleanor M. Perfetto, PhD, MS, Interim Chief Executive Officer and Executive Vice President, Strategic Initiatives
- Elisabeth M. Oehrlein, PhD, MS, Senior Director, Research and Programs
- Aimee Lee Russell, Programs Associate

National Pharmaceutical Council

- Robert W. Dubois, MD, PhD, Interim President and Chief Executive Officer, Chief Science Officer
- Kimberly Westrich, MA, Vice President, Health Services Research

Acknowledgements

- Bansri Desai, PharmD, PhD Candidate, University of Maryland School of Pharmacy, Dept. Pharmaceutical Health Services Research
- Jeroen Jansen, PhD, Lead Scientific Advisor, Open-Source Value Project, IVI
- Mark Linthicum, MPP, Director of Scientific Communications, IVI
- R. Brett McQueen, PhD, Assistant Professor, Co-Investigator, pValue, University of Colorado
- Nick Mendola, MPH, PhD student at University of Colorado
- Melanie D. Whittington, PhD, Research Assistant Professor, Co-Investigator, pValue, University of Colorado

Funding: This project was supported by the National Pharmaceutical Council.

How to cite this report: National Health Council and National Pharmaceutical Council. Multi-Criteria Decision Analysis: Can It Help Make Value Assessment More Patient Centered? Published November 19, 2020. https://nationalhealthcouncil.org/issue/value/mcda

NATIONAL HEALTH COUNCIL
Celebrating 100 Years

National Pharmaceutical Council®

Table of Contents

Executive Summary

Researchers, value assessors, and the patient community agree that conventional approaches to value/health technology assessment (V/HTA) often inadequately account for the many dimensions of value.[6–8] Multi-criteria decision analysis (MCDA) has been suggested as one promising approach to aggregate the different dimensions of value.[9] MCDA is defined as "an umbrella term to describe a collection of formal approaches which seek to take explicit account of multiple criteria in helping individuals or groups exploring decisions that matter."[10]

Given substantial researcher interest in advancing its development and uptake, it is important to the patient community that we proactively consider the questions:

- Can MCDA help make V/HTA more patient centered?
- What are known best and evolving good practices for incorporating the patient voice into MCDA?
- What are the challenges?

On February 26, 2020, the National Health Council (NHC), in partnership with the National Pharmaceutical Council (NPC), assembled stakeholders from patient, academic, payer, employer, V/HTA organizations, and the biopharmaceutical industry, and facilitated a Roundtable dialogue to identify good practices and key considerations for integrating the patient voice into patient-centered MCDA.

The objectives of the Roundtable were to:

- Socialize what MCDA is, what it entails, and its potential role in the current landscape of patient-centered V/HTA,
- Demonstrate how to apply MCDA and how the results can vary based on differing preferences and values,
- Identify specific opportunities to incorporate elements of value important to patients, and
- Review challenges to MCDA uptake and identify possible solutions to overcome those challenges, ensuring the patient voice is captured and incorporated into MCDA-based appraisals.

Participants were introduced to MCDA through a case example with an active-learning exercise, heard from researchers experienced in MCDA and patient representatives, and participated in three group discussions.

Overall, participants agreed that MCDA can promote more patient-centered V/HTA, but only if patients are actively engaged in identifying criteria and weighting exercises. Key comments, suggestions, and takeaways that emerged are summarized here by discussion topic:

MCDA and Patient Centricity
1. Patient input should be solicited when identifying the "universe" of potential criteria. 2. Quantitatively incorporating outcomes/treatment characteristics important to patients can enhance transparency. 3. MCDA offers an opportunity to include more elements of value through either qualitative or quantitative structured processes.
Data and Evidence Generation for Patient-Centered MCDA
1. Inputs should not be limited to clinical trial data. 2. Understand which outcomes/treatment characteristics are important to patients before investing in gathering data on a large scale. 3. Underlying data and preferences should stem from those who will be impacted by the decision an MCDA will inform. 4. Patient/caregiver groups should be engaged as research partners. 5. Patients should understand and consent to how their information will be used.
MCDA Implementation and Dissemination
1. MCDA can be a standalone exercise or used in parallel with cost-effectiveness analysis (CEA). 2. More research is needed to understand when to incorporate MCDA into decision making. 3. More people need to be trained on MCDA use and interpretation. 4. Individual payers are unlikely to have internal resources to conduct an MCDA; external researchers could assist. 5. To encourage uptake, MCDA-model interfaces need to be user friendly.

In addition to the comments, suggestions, and takeaways described above, participants identified several next steps that are needed to ensure MCDA is developed in a patient-centered, rigorous manner.

Development of standardized data collection tools

A fundamental barrier to developing patient-centered V/HTA is that data have not been systematically collected on outcomes and other elements of value important to patients. This is a barrier not only to patient-centered MCDA, but also to other efforts to enhance patient-centricity of V/HTA. To ensure high-quality and relevant data are systematically collected before they are needed, multidisciplinary project teams should be involved in development, pilot testing, and implementation of standardized data collection tools. Tools could be standalone surveys or incorporated into existing patient registries.

Additional researcher-facing education

There is currently a lack of researchers trained on how to develop, interpret, and apply MCDA models. The International Society for Pharmacoeconomics and Outcomes Research's (ISPOR's) MCDA short course introduces MCDA fundamentals and the Innovation and Value Initiative (IVI) routinely hosts webinars on their open-source models. However, to develop the workforce needed to drive widespread adoption of MCDA, greater integration of MCDA into health economics/outcomes research graduate coursework would be needed.

Further research and future convenings

Participants identified many questions requiring additional research, including:

- "Whose" preferences should be incorporated into an MCDA if it will be used for population-level decision making? How can patient centricity be preserved?
- How do MCDA models compare with traditional approaches?
- What value elements should be considered as part of the "universe" of potential criteria when developing MCDA models?

In the future, the aforementioned case examples and research can contribute to discussions during future multi-stakeholder convenings.

Conclusion

This Roundtable introduced what MCDA is, what it entails, and its potential role in the current landscape of V/HTA. Discussions highlighted the opportunity MCDA presents to assess elements of value that are not traditionally incorporated into V/HTA in structured and standardized ways. MCDA offers a significant opportunity to move the field closer to patient-centered V/HTA, but additional methods development, research, training, and socialization efforts are required to reach that goal.

Background

Value/health technology assessment (V/HTA) is a multidisciplinary process intended to evaluate the clinical, social, economic, organizational, and ethical impacts of a health intervention or health technology (such as a medicine).[1–4] An overarching goal in V/HTA is to assess clinical evidence, costs, and social and ethical impacts in structured and standardized ways. V/HTA should be transparent and include high-quality data on aspects of care and outcomes that are important to patients and other stakeholders whenever such data exist.[5] In patient-centered V/HTA, a final recommendations report should reflect the multi-dimensionality of patient experiences, the burden of disease, and recognize the different ways a disease manifests itself.[5] Researchers, value assessors, and the patient community agree that conventional approaches to V/HTA often inadequately account for the many dimensions of value.[6–8]

The International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Value Assessment Framework Special Task Force suggested multi-criteria decision analysis (MCDA) as one promising approach to aggregate the different dimensions of value.[9] MCDA is defined as "an umbrella term to describe a collection of formal approaches which seek to take explicit account of multiple criteria in helping individuals or groups exploring decisions that matter."[10]

"Criteria" refers to the "things" that factor into a decision (e.g., caregiver burden, simplicity to take treatment, productivity, etc.).

"Criteria" refers to the "things" that factor into a decision (e.g., caregiver burden, simplicity of taking treatment, productivity, etc.). The "things" that factor into a decision and the weight individuals place on those "things" vary among individuals and across stakeholders. For example, the potential for a treatment to be easier to administer than the existing standard of care may be of great importance to certain individuals/stakeholders, whereas work productivity may be of great significance to others. MCDA models can accommodate various perspectives by asking stakeholders to weigh the different dimensions of value (i.e., the different criteria).[9,11] This can be done qualitatively and/or quantitatively[11]:

- Qualitative MCDA: Decision based on deliberations of explicitly defined criteria (criterion measurement specified, but weights not specified)

- Quantitative MCDA: Produces a score that can be used as a decision tool or rule (criterion measurement specified, and weights specified)

Utilizing MCDA in V/HTA may improve transparency and reduce stakeholder concerns that the multi-dimensionality of "value" is not standardized or a part of structured V/HTA processes. MCDA may be complementary to traditional cost-effectiveness analysis- (CEA-)based value assessment. It explicitly makes tradeoffs among different dimensions of value that impact real-world decision making but are typically not included in a CEA (e.g., impact on an individual's productivity).[6,9]

MCDA explicitly makes tradeoffs among different dimensions of value that impact real-world decision making but are typically not included in a cost-effectiveness analysis (e.g., impact on an individual's productivity).

In the United States, the application of MCDA within health care and V/HTA is still in its infancy.[11] Given substantial researcher interest in advancing its development and uptake, it is important to the patient community that we proactively consider the questions: Can MCDA help make V/HTA more patient centered? What are known best and evolving good practices for incorporating the patient voice into MCDA? What are the challenges?

The National Health Council (NHC), in partnership with the National Pharmaceutical Council (NPC), assembled stakeholders from patient, academic, payer, employer, and V/HTA organizations, and the biopharmaceutical industry, and facilitated a Roundtable dialogue to:

- Socialize what MCDA is, what it entails, and its potential role in the current landscape of patient-centered V/HTA,
- Demonstrate how to apply MCDA and how the results can vary based on differing preferences and values,
- Identify specific opportunities to incorporate elements of value important to patients, and
- Review challenges to MCDA uptake and identify possible solutions to overcome those challenges, ensuring the patient voice is captured and incorporated into MCDA-based appraisals.

Roundtable

The NHC- and NPC-hosted Roundtable was held on February 26, 2020 in Washington, DC. There were 28 participants (excluding NHC and NPC staff) with the following backgrounds: patient/caregiver community advocacy (n=9), nonprofit (n=2), value/health technology assessment (n=4), academic (n=6), industry (n=5), and payer (n=2) organizations. While all participants were generally familiar with V/HTA, participants had varying familiarity with MCDA, including many for whom it was new. Notetakers were asked not to capture participant names or affiliations to ensure participants were comfortable candidly sharing their views.

Throughout the day, participants were introduced to MCDA through a case example/active-learning exercise on MCDA, heard from researchers experienced in MCDA and patient representatives, and participated in three group discussions (see Table 1).

Table 1. Group Discussion Overview

Discussion 1: Can MCDA Help Enhance the Patient Centricity of Value Assessment? • Can MCDA help us in enhancing patient centricity of value assessment? If not, why not? • How do we identify stakeholders to participate in MCDA deliberations or weighting exercises? • How do we handle different results from different stakeholders? Or contradicting preferences among the same group? • What additional data need to be collected for patient-centered MCDA?
Discussion 2: MCDA as a Part of the Value Assessment Landscape • Which decisions could MCDA guide? What are the barriers to using MCDA to make decisions? • Should MCDA be considered alongside or in place of traditional value assessment methods?
Discussion 3: What Are Obstacles to MCDA Uptake and Possible Solutions? • What are possible solutions or activities that could get us to a solution?

Case Examples/Active Learning Exercise

To ensure all participants could meaningfully participate in discussions on MCDA, the Roundtable began with a brief MCDA primer and educational case examples presented by representatives from the Pharmaceutical Value (pValue) Center at the University of Colorado.

Participants were presented with two case examples, each providing information about a hypothetical new treatment for a given disease. The group worked through each case by assessing the value of each new treatment in two steps based on:

1. “Traditional” CEA evidence
2. An MCDA approach, which used elements of value not generally included in CEA

Case 1 presented a hypothetical novel therapy, “Treatment A,” for aggressive B-cell non-Hodgkin’s lymphoma (NHL) in adults, and Case 2 presented a hypothetical novel therapy, “Treatment B,” for episodic migraine in patients for whom prior preventative therapies did not work. Participants were provided information on the target disease (e.g., prevalence, demographics) and “traditional” CEA evidence for both the new treatment and standard of care, including clinical and safety profiles, net health benefit, treatment administration, incremental cost-effectiveness (dollars per quality-adjusted life-year), and affordability.

The group was then asked to individually judge each treatment's overall value as consistent with high-, intermediate-, or low-value care (Table 4). Next, participants undertook a simplified, illustrative MCDA exercise. Criteria reflecting concepts outside of traditional value criteria were pre-selected for the exercise. Pre-specified criteria measurements were informed by evidence and scored using a 100-point scale (Table 2). The higher the score, the better the performance within that criterion. For example, the scores for “Value of Hope” suggest much higher or better performance for potentially curing patients under Treatment A (gene therapy one-time infusion) versus Treatment B (managing a chronic illness).

Table 2. Criteria and scores by treatment

Criteria	Definition	Case 1 Treatment A (0-100)*	Case 2 Treatment B (0-100)*
First Treatment Option	The treatment is the first to offer any improvement for patients with a certain disease	15	5
Health Disparities	Potential for a treatment to reduce important inequalities across racial, ethnic, gender, socioeconomic, or regional categories	5	10
Caregiver Burden	Potential for a treatment to reduce burden on the caregiver's daily life, including all emotional, social, financial, and physical aspects	100	50
Novelty	New treatment option for patients for whom other available treatments have failed	30	100
Real Option Value	Potential for a treatment to extend life and create opportunities to benefit from other future advances in medicine	90	0
Complexity	The potential for a treatment to be simpler than its alternatives (e.g., in administration, simpler dosing, etc.)	15	25
Level of Certainty in Safety Evidence	Knowns (and unknowns) related to safety of the treatment	50	90
Level of Certainty in Benefit Evidence	Knowns (and unknowns) related to benefit of the treatment	20	35
Productivity	The treatment offers meaningful improvements in the work productivity of the patient	50	100
Severity of Disease	The severity (e.g., impact on length of life and/or quality of life) of a disease the treatment is intended to treat	90	50
Value of Hope	Potential for a treatment to provide a chance at a "cure"	100	0

**Note: Numbers are for illustrative purposes only*

Participants individually selected, ranked, and weighted the five criteria of greatest importance to them for each of the two cases. MCDA scores were calculated by summing the selected criteria's weighted scores. Calculation of the MCDA score for Treatment A is presented in Table 3. Possible MCDA scores ranged from 0 (low value according to selected criteria) to 100 (high value according to selected criteria). The

MCDA score can be considered alongside the findings of a CEA approach to form a broader picture of a treatment's value. The group discussed their MCDA scores and potential interpretations.

Table 3. Example MCDA Score Calculation for Treatment A

Rank	Criterion	Weight	Criterion Score	Weighted Score*
1	Novelty	4	100	40
2	Value of Hope	3	100	30
3	Level of Certainty of Benefit Evidence	1	20	2
4	Level of Certainty of Safety Evidence	1	50	5
5	Severity of Disease	1	90	9
Sum total of Weighted Scores = MCDA Score = 86				

**Weighted score = (Weight*Criterion Score)/Total Weight*

After completing the MCDA exercise and discussing MCDA score interpretation, participants were asked to again judge each treatment's overall value, this time using the additional information provided by the exercise. Updated judgments are presented in Table 4.

Table 4. Participant value ratings

	Case 1 (Treatment A)			Case 2: (Treatment B)		
	Low	Intermediate	High	Low	Intermediate	High
Value rating with traditional CEA evidence	0%	52%	48%	13%	57%	30%
Value rating with MCDA approach	4%	29%	67%	13%	57%	30%

Although the aggregate evaluations for Treatment B follow the same distribution in both cases, individual participants changed their ratings within the distribution. Many participants changed their perception of each treatment's value after the MCDA exercise: 41% for Treatment A and 43% for Treatment B (Table 5). Changes toward both lower and higher perceptions of value were observed. This became an important discussion point since it contrasted a commonly held belief that incorporating additional

value elements is a mechanism to justify higher value (i.e., higher prices). We found the opposite to also be true.

Table 5. Changes in value perception between exercises

	Negative change	No change	Positive change
Case 1 (Treatment A)	9%	59%	32%
Case 2 (Treatment B)	23%	54%	23%

Group Discussions

Overall, participants agreed that MCDA can promote more patient-centered V/HTA, but only if patients are actively engaged in identifying criteria and weighting exercises. Key comments, suggestions, and takeaways that emerged are summarized here by discussion topic:

MCDA and Patient Centricity

Participants highlighted the opportunity of an MCDA approach to ensure elements of value that are important to patients and other stakeholders are incorporated into health care decision making in a transparent and structured manner.

1. **Patient input should be solicited when identifying the "universe" of potential criteria.** Care should be taken to not include significant overlap or double counting of potential criteria.
2. **Quantitatively incorporating outcomes and/or treatment characteristics important to patients can enhance transparency.** A structured approach ensures clear communication regarding how/if these characteristics were factored into decision making.
3. **MCDA offers an opportunity to include more elements of value through either qualitative or quantitative structured processes.** Many aspects of value are virtually impossible for CEA to address (e.g., contagion, spillover effects, equity).

Data and Evidence Generation for Patient-Centered MCDA

A key theme raised in roundtable discussions was identifying good practices for obtaining data inputs and evidence to be used in patient-centered MCDA models. To obtain evidence that reflects patient perspectives and preferences, patients must be involved throughout the evidence generation and selection processes.

1. **Inputs should not be limited to clinical trial data**. Existing clinical evidence is largely based upon clinical trial populations that do not represent the heterogeneity of most diseases and may exclude members of the target patient population.
2. **Understand which outcomes and/or treatment characteristics are important to patients before investing in gathering data on a large scale**. The "wrong data" are often captured because patients have not been involved in developing the research question or asked about the outcomes important to them.
3. **Underlying data and preferences should stem from those impacted by the decision an MCDA will inform.** This may require engaging individuals who often have been left out of the research process due to real or perceived challenges in reaching them (e.g., geographic location, socioeconomic status, cultural, linguistic, or technological barriers). While MCDA researchers may not have control over input data collection, they may have control over how preferences are collected.
4. **Patient/caregiver groups should be engaged as research partners**. Through existing patient registries, patient and caregiver groups have the potential to collect data efficiently, whether cross-sectionally or longitudinally. They can assist in survey development and identifying relevant clinical experts. To better serve and reach more diverse patients, patient groups are increasingly developing relationships with community organizations, online communities, and/or appointing a dedicated staff person.
5. **Patients should understand and consent to how their information will be used**. Patients should be engaged and informed so they understand how information they provide will be used (in V/HTA and elsewhere). Maintaining a feedback loop with patients regarding the use of their data and the findings of research can build trust and drive interest in further engagement in research.

MCDA Implementation and Dissemination

Several barriers to widespread implementation and dissemination of MCDA were identified by the group. With regard to existing methods involving CEAs, the group concluded that CEAs are useful, but incomplete. MCDA would allow elements of value beyond those used for CEA to be considered in a structured and transparent way.

1. **MCDA can be a standalone exercise or used in parallel with CEA**. Identifying and understanding discrepancies in decisions arrived at using CEA versus CEA plus MCDA will be important for refinement of V/HTA methods.
2. **More research is needed to understand when to incorporate MCDA into decision-making**. It is unclear at which stage and under which pre-requisites MCDA should be incorporated into V/HTA and/or other decision making. This will depend on the extent to which other emerging V/HTA approaches (e.g., augmented or extended CEA) can adequately capture elements of value important to patients.
3. **More people need to be trained on MCDA use and interpretation**. A lack of training among researchers, payers, and other stakeholders prevents use of economic models in general and MCDA presents additional challenges. Developing high-quality MCDA model use and appropriately interpreting them will require greater understanding among stakeholders (e.g., economists, public health students, policy makers, and payers).
4. **Individual payers are unlikely to have internal resources to conduct an MCDA; external researchers could assist**. Individual payers are unlikely to have internal resources to conduct an MCDA themselves. Reliance upon external researchers, such as V/HTA bodies and academics, could assist in payer uptake.
5. **To encourage uptake, MCDA model interfaces need to be user friendly**. The case example presented in our workshop demonstrated that a simple MCDA exercise can be made accessible to different stakeholders with different levels of knowledge about MCDA. Standalone interfaces need to be user friendly, trustworthy, adaptable, and evolve as the data landscape evolves.

Next Steps

In addition to the comments, suggestions, and takeaways described above, participants identified several next steps needed to ensure MCDA is developed in a patient-centered, rigorous manner.

Development of standardized data collection tools

A fundamental barrier to developing patient-centered V/HTA is data on outcomes and other elements of value important to patients have not been systematically collected.

This is a barrier not only to patient-centered MCDA, but also other efforts to enhance V/HTA patient centricity. To ensure high-quality and relevant data are systematically collected before they are needed, multidisciplinary project teams should be involved in development, pilot testing, and implementation of standardized data collection tools. The data collection tools could be standalone surveys or sample questions to be incorporated into existing patient registries.

Additional researcher-facing education

There is currently a lack of researchers trained in how to develop, interpret, and apply MCDA models. ISPOR's MCDA short course introduces MCDA fundamentals and IVI routinely hosts webinars on their open-source models. However, to develop the workforce needed to drive widespread adoption of MCDA, greater integration of MCDA coursework into health economics/outcomes research graduate programs would be needed.

Further research

Participants identified many issues requiring additional research, including:

- One desirable aspect of MCDA is its ability to account for diverging preferences within and across stakeholder groups. Greater clarity is needed regarding "whose" preferences should be incorporated into an MCDA if it will be used for population-level decision making. For patient-centered MCDA, clearly the patient perspective would need to be prominent, but other perspectives are also important.
- Additional case examples illustrating consistency/inconsistency of MCDA models with traditional approaches also would be informative in defining the role of MCDA in the V/HTA landscape.
- With broader and more representative groups of patients and consumers, explore what value elements should be considered as part of the "universe" of potential criteria when developing MCDA models. Consider how this differs between criteria for MCDA to inform population-level decision-making versus individual-level shared decision-making.

Leverage research to inform future convenings

In the future, the aforementioned case examples/research can contribute to discussions during future multi-stakeholder convenings on MCDA and other emerging approaches to enhance the patient centricity of V/HTA.

Conclusion

The NHC- and NPC-hosted Roundtable introduced what MCDA is, what it entails, and its potential role in the current landscape of V/HTA. Discussions highlighted the opportunity MCDA presents through structured and standardized ways to assess elements of value that are not traditionally incorporated into V/HTA. Incorporating these additional elements of value may enhance the patient centricity of V/HTA; however, participants also identified significant challenges to broader use of MCDA. Additional research is needed to understand under which pre-requisites MCDA should be incorporated into V/HTA and/or other decision-making. Important strides can be made through stakeholder partnerships, especially with patients and patient groups, to ensure that V/HTA is patient-centered and patient driven. MCDA offers an important opportunity to move the field closer to patient-centered V/HTA. However, additional methods development, research, training, and socialization efforts are required to reach that goal.

References

1. Glossary of Value Assessment Terms. National Health Council. Published March 19, 2020. Accessed June 29, 2020. https://nationalhealthcouncil.org/glossary-of-value-assessment-terms

2. WHO | Health technology assessment. WHO. Accessed March 15, 2019. https://www.who.int/medical_devices/assessment/en/

3. Glossary. EUPATI. Accessed June 28, 2019. https://www.eupati.eu/glossary/

4. Single A, Ahern E, Culyer T, et al. HTAi consumer and patient glossary: A beginner's guide to words used in health technology assessment. HTAi. Published October 2009. https://htai.org/wp-content/uploads/2018/02/PCISG-Resource-ENGLISH-PatientandConsumerGlossary-Oct09.pdf

5. A Dialogue on Patient-Centered Value Assessment: Overcoming Barriers to Amplify the Patient Voice. National Health Council. Published November 30, 2018. Accessed May 29, 2019. https://www.nationalhealthcouncil.org/dialogue-patient-centered-value-assessment-overcoming-barriers-amplify-patient-voice

6. Phelps CE, Madhavan G. Valuing Health: Evolution, Revolution, Resistance, and Reform. *Value Health J Int Soc Pharmacoeconomics Outcomes Res*. 2019;22(5):505-510. doi:10.1016/j.jval.2019.01.010

7. Sorenson C, Lavezzari G, Daniel G, et al. Advancing Value Assessment in the United States: A Multistakeholder Perspective. *Value Health*. 2017;20(2):299-307. doi:10.1016/j.jval.2016.11.030

8. Lakdawalla DN, Doshi JA, Garrison LP, Phelps CE, Basu A, Danzon PM. Defining Elements of Value in Health Care—A Health Economics Approach: An ISPOR Special Task Force Report [3]. *Value Health*. 2018;21(2):131-139. doi:10.1016/j.jval.2017.12.007

9. Phelps CE, Lakdawalla DN, Basu A, Drummond MF, Towse A, Danzon PM. Approaches to Aggregation and Decision Making-A Health Economics Approach: An ISPOR Special Task

Force Report [5]. *Value Health J Int Soc Pharmacoeconomics Outcomes Res*. 2018;21(2):146-154. doi:10.1016/j.jval.2017.12.010

10. Baltussen R, Marsh K, Thokala P, et al. Multicriteria Decision Analysis to Support Health Technology Assessment Agencies: Benefits, Limitations, and the Way Forward. *Value Health*. 2019;22(11):1283-1288. doi:10.1016/j.jval.2019.06.014

11. Marsh K, IJzerman M, Thokala P, et al. Multiple Criteria Decision Analysis for Health Care Decision Making-Emerging Good Practices: Report 2 of the ISPOR MCDA Emerging Good Practices Task Force. *Value Health J Int Soc Pharmacoeconomics Outcomes Res*. 2016;19(2):125-137. doi:10.1016/j.jval.2015.12.016

Appendix 1. Roundtable Agenda

Roundtable on Patient-Centered Multi-Criteria Decision Analysis

February 26, 2020
The Dupont Circle Hotel, 1500 New Hampshire Ave NW, Washington, D.C.
9:00 a.m. – 4:00 p.m.

Roundtable Objectives:

- Socialize what Multi-Criteria Decision Analysis (MCDA) is, what it entails, and its potential role in the current landscape of value assessment.
- Demonstrate how to apply MCDA and how the results can vary based on differing preferences and values.
- Identify specific opportunities to incorporate elements of value important to patients.
- Review challenges to MCDA uptake and identify possible solutions to overcome those challenges, ensuring that the patient voice is captured and incorporated into MCDA-based appraisals.

9:00-9:30	**Registration and Breakfast**
9:30-9:45	**Welcome, Introductions, and Roundtable Overview** • **Robert Dubois, MD, PhD**, Chief Science Officer, Executive Vice President, National Pharmaceutical Council • **Eleanor Perfetto, PhD, MS**, Executive Vice President, Strategic Initiatives, National Health Council
9:45-11:25 *(with a 15-minute break)*	**What is Patient-Centered MCDA? A Case Example and Exercise** **MCDA Introduction and Group Exercise** ○ **Jon Campbell, PhD**, Associate Professor, Department of Clinical Pharmacy, Pharmaceutical Outcomes Research, Director, pValue, University of Colorado

- **R. Brett McQueen, PhD**, Assistant Professor, Co-Investigator, pValue, University of Colorado School of Pharmacy

Group Discussion

Moderator: **Eleanor Perfetto, PhD, MS,** Executive Vice President, Strategic Initiatives, National Health Council

---

11:25 – 12:30

Can MCDA Help Enhance the Patient Centricity of Value Assessment?

Panel Discussion

Moderator: **Elisabeth M. Oehrlein, PhD, MS**, Senior Director, Research and Programs, National Health Council

- **Jennifer Bright, MPA**, Executive Director, Innovation and Value Initiative (IVI)
- **Anna Hyde, MA**, Vice President of Advocacy and Access, Arthritis Foundation

Group Discussion

Moderator: **Eleanor Perfetto, PhD, MS,** Executive Vice President, Strategic Initiatives, National Health Council

- Can MCDA help us in enhancing the patient centricity of value assessment? If not, why not?
- How do we identify stakeholders to participate in MCDA deliberations or weighting exercises?
- How do we handle different results from different stakeholders? Or contradicting preferences among the same group? How do we ensure that when patient preferences differ from other stakeholders, they are still considered?
- What additional data need to be collected for patient-centered MCDA?

12:30 - 1:00	**Networking Lunch**
1:00-1:10	**Morning Recap and Reflections** • **Robert Dubois, MD, PhD**, Chief Science Officer, Executive Vice President, National Pharmaceutical Council
1:10-2:15	**MCDA as a Part of the Value-Assessment Landscape** **Fireside Chat** • **Kimberly Westrich, MA**, Vice President, Health Services Research, National Pharmaceutical Council • **Charles Phelps, PhD**, Professor, University of Rochester **Group Discussion** Moderator: **Eleanor Perfetto, PhD, MS,** Executive Vice President, Strategic Initiatives, National Health Council • Which decisions could MCDA guide? What are the barriers to using MCDA to make decisions? • Should MCDA be considered alongside or in place of traditional value assessment methods?
2:15-2:30	**Break**
2:30-3:50	**What are Obstacles to MCDA Uptake and Possible Solutions?** **Panel Discussion** Moderator: **Kenny Mendez, MBA**, President and Chief Executive Officer, Asthma and Allergy Association of America • **John Watkins, PharmD, MPH, BCPS**, Residency Program Director, Premera Blue Cross • **Peter Neumann, ScD**, Director, Center for the Evaluation of Value and Risk in Health at the Institute

for Clinical Research and Health Policy Studies, Tufts Medical Center, Professor of Medicine, Tufts University School of Medicine
- **Julie Eller**, Director, Patient Centered Strategies, Arthritis Foundation

Group Discussion

Moderator: **Eleanor Perfetto, PhD, MS,** Executive Vice President, Strategic Initiatives, National Health Council

- Current barriers to MCDA's uptake include:
  - Culture
  - Methodological complexity and availability of resources
  - Lack of people who are well trained on MCDA
  - Difficulty comparing results across health technologies (no universal score)
- What are possible solutions to overcoming these barriers? What are activities that could get us toward a solution?

3:50-4:00

Closing Remarks

- **Robert Dubois, MD, PhD**, Chief Science Officer, Executive Vice President, National Pharmaceutical Council
- **Eleanor Perfetto, PhD, MS**, Executive Vice President, Strategic Initiatives, National Health Council

Appendix 2. Roundtable Attendees

This report reflects the discussions from the Roundtable but does not necessarily represent the views of the individual participants.

- **Julie Block,** President and CEO, National Eczema Association
- **Jennifer Bright, MPA,** Executive Director, Innovation and Value Initiative
- **Sarah Buchanan,** Director of Advocacy, Crohn's and Colitis Foundation
- **Jon Campbell, PhD,** Associate Professor, Department of Clinical Pharmacy, Pharmaceutical Outcomes Research, Director, pValue, University of Colorado
- **Bansri Desai, PharmD,** PhD Student, University of Maryland
- **Patricia Deverka, MD,** Chief Science Officer, Innovation and Value Initiative
- **Samantha Dougherty, PhD,** Senior Director, Policy and Research, Pharmaceutical Research and Manufacturers of America
- **Robert Dubois, MD, PhD,** Interim President and Chief Executive Officer, Chief Science Officer, National Pharmaceutical Council
- **Julie Eller, Director,** Patient-Centered Strategies, Arthritis Foundation
- **Sarah Emond, MPP,** Executive Vice President and Chief Operating Officer, Institute for Economic and Clinical Review
- **Mary Giliberti, JD,** Executive Vice President of Policy, Mental Health America
- **Anna Hyde, MA,** Vice President of Advocacy and Access Arthritis Foundation
- **Newell McElwee, PharmD, MSPH,** Vice President, Boehringer Ingelheim Pharmaceuticals
- **Brett McQueen, PhD,** Assistant Professor, Co-Investigator, pValue, University of Colorado
- **Kenneth Mendez, MBA,** President and CEO, Asthma and Allergy Foundation of America
- **Nick Mendola, MPH,** PhD Student, Research Assistant, pValue, University of Colorado
- **Cristina Masseria, PhD, MSc,** Methods and Capabilities Lead, Patient and Health Impact (PHI), Pfizer
- **Peter Neumann, ScD,** Director, Center for the Evaluation of Value and Risk in Health at the Institute for Clinical Research and Health Policy Studies, Tufts Medical Center, Professor of Medicine, Tufts University School of Medicine

- **Elisabeth Oehrlein, PhD, MS,** Senior Director, Research and Programs, National Health Council
- **Eleanor M Perfetto, PhD, MS,** Interim Chief Executive Officer and Executive Vice President, Strategic Initiatives, National Health Council
- **Charles Phelps, PhD, MBA,** Professor, University of Rochester
- **Daryl Pritchard, PhD,** Senior Vice President, Personalized Medicines Coalition
- **Margaret Rehayem,** Director of Initiatives and Programs, National Alliance of Healthcare Purchaser Coalitions
- **Aimee Lee Russell,** Programs Associate, National Health Council
- **Alyssa Schatz, MSW,** Director, Policy and Advocacy, National Comprehensive Cancer Network
- **Silke Schoch,** Manager, Research and Programs, National Health Council
- **Jason Spangler, MD, MPH,** Executive Director of Medical Policy, Amgen
- **Eric Stanek, PharmD,** Principal Scientist, HealthCore
- **Jamie Sullivan, MPH,** Vice President, Public Affairs, COPD Foundation
- **Ashley Valentine,** President and CEO, Sick Cells
- **John Watkins, PharmD, MPH, BCPS**, Residency Program Director/P&T Manager, Premera
- **Kimberly Westrich, MA,** Vice President, Health Services Research, National Pharmaceutical Council
- **C. Grace Whiting, JD,** President and CEO, National Alliance for Caregiving
- **Danny Yeh, PhD,** Head of Health Policy and Systems Research, Evidence for Access, US Medical Affairs, Genentech