

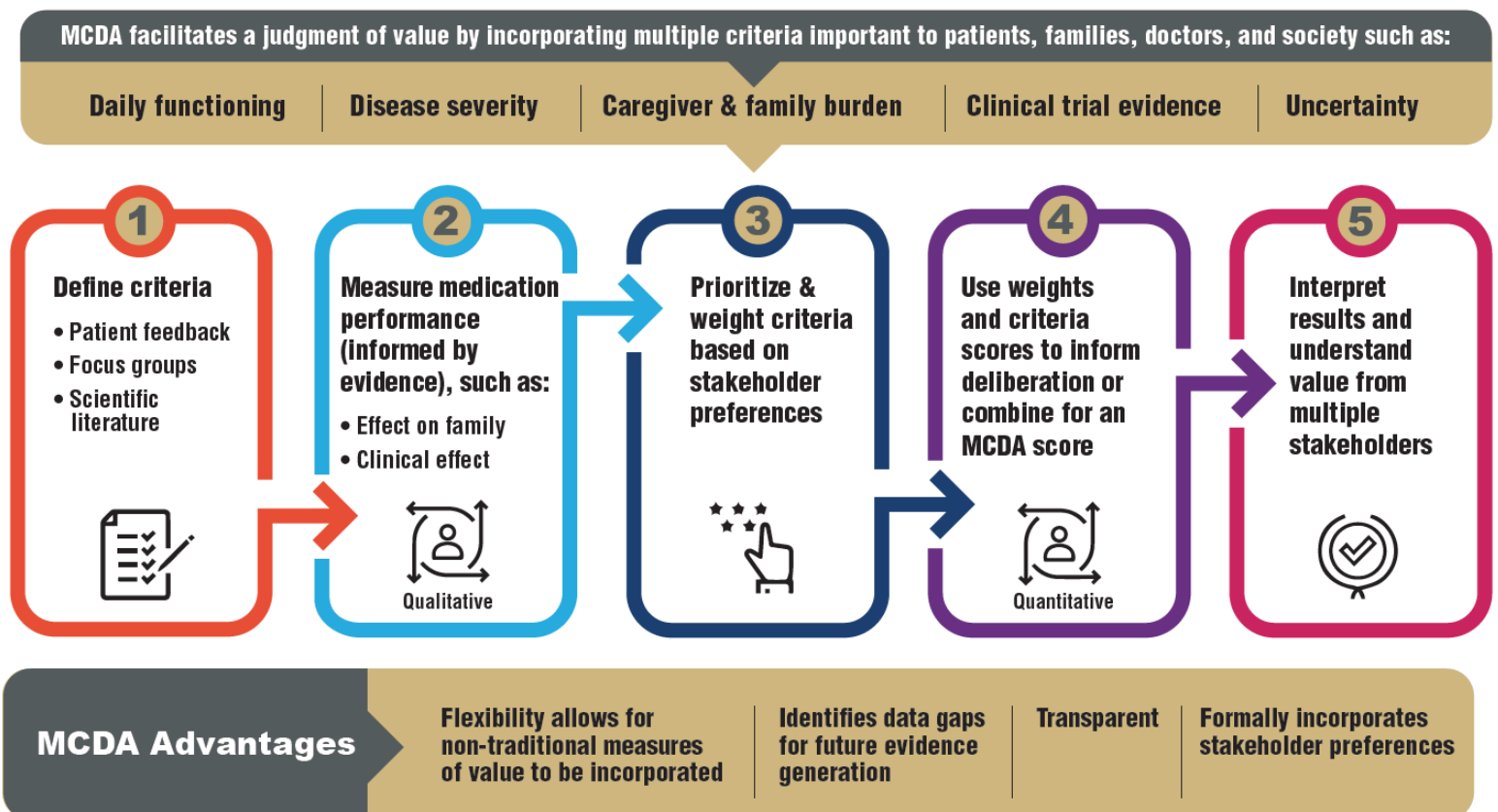
Multi-Criteria Decision Analysis in Health Care Value Assessment

How do we judge the value of something we want to buy? This is a critically important, and complex, question in health care, where this question gets answered by consumers, health insurance companies, employers, and policymakers. By engaging key stakeholders to quantify and weigh decision-making criteria, multi-criteria decision analysis (MCDA) provides a tool that can help answer this in ways that are more objective, comprehensive, transparent, and sensitive to differing perspectives of patients, caregivers and other stakeholders.

In the health care sector, the University of Colorado Center for Pharmaceutical Value (pValue) is testing the use of MCDA to better understand coverage and reimbursement decision making using value assessments on criteria that are important to multiple stakeholders. MCDA recognizes that traditional value assessment may not be comprehensive or sufficiently flexible to allow for the inclusion of criteria that patients, payers, clinicians, or other health care stakeholders care about. As a result, important value criteria may be overlooked.

MCDA is distinct from other value assessment methods in its ability to reveal important and often nuanced differences in value perceptions between multiple stakeholders – including patients, payers, and clinicians. – R. Brett McQueen, PhD, Director of pValue, University of Colorado.

By encouraging a comprehensive and flexible understanding of value, MCDA offers an opportunity to systematically weigh these non-traditional but critical criteria to supplement our understanding of treatment value.



Using MCDA as a value assessment tool to improve health care decision-making involves the following steps:

Step One: Define Criteria

Identify and define criteria important to patients and other key stakeholders. Selected criteria should be measurable, identifiable, and distinct from each other. Possibilities include day-to-day quality of life, productivity, treatment characteristics, severity of disease, quality of evidence, and family burden. There is no limit to the number of criteria considered, but experts recommend a prioritized list of the most important criteria with additional efforts to reduce overlap.

Step Two: Measure Medication Performance Using Evidence

Estimate the effect of the drug or other health care intervention on each criterion using evidence available and identify gaps in the literature. Each criterion should be defined clearly so that a total score can be calculated across all criteria – helping determine the preferred treatment among available alternatives. Usually, the highest score “wins” or provides the highest estimate of value.

Step Three: Prioritize and Weigh Criteria Based on Stakeholder Preferences

Determine the relative importance of each criterion and weight accordingly by an inclusive group of stakeholders. This ensures that the most important criteria are given the most consideration. This step involves the perspective of the decision – for example, who is deliberating the value of the therapy?

Step Four: Use Weights and Criteria Scores to Inform Deliberation or Combine for an MCDA Score

By this stage the user will have a more comprehensive picture of a drug’s effectiveness on all relevant and measurable individual criteria and relative preference for those criteria. The output offers transparency and structure to how evidence is used and applied in decision making. The weights and performance scores can be used to either inform a deliberation on value or be combined to calculate an MCDA score which indicates higher value or lower value based on the score output. The weights and criteria can also be modified depending on the interests of the user.

Step Five: Interpret Results and Understand Value from Multiple Stakeholders

Finally, we interpret the results to understand the value from an inclusive group of stakeholders. One advantage of MCDA is the transparency offered by displaying how each stakeholder perceives value and which criteria are preferred.

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