HTA Core Model® & MCDA in decision making
Experiences from Lombardia, Italy

Through HTA-informed MCDA

Harvesting information valuable to health

World of EVIDENCE

World of DECISIONS

Context is global
Evidence is in perennial progress
Decision is everywhere
Impact is local

Are you ready to team up and play your part?

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HTA and Decision Making in Lombardy

Regional Law 7856/2008

Priority, COI Committee*

Scientific Domain Experts*

Rapid, Full HTA reports

Appropriateness Committee*

*University and Community Hospitals Doctors, General Practitioners, Health Authorities, Professional Associations, Research Dpts. With disclosure of direct and indirect interests and management of possible conflicts

Priority - Scoping

Assessment: Contextualisation of third party reports

Appraisal

Decision

Value

MCDA

COTE (HS)

Core Model

Multiple Criteria Decision Analysis:
- Value Index
- Qualitative analysis
- Comments
- Motivation of policy act

APPLICATION ONTOLOGY

Being ready to team up and play your part
Complete but complex
Strong in «clinical area»
Essential in «economic area»
Large but difficult to operate in «broad» area

A problem with synthesis

### European HTA Core Models enhanced with EVIDEM Criteria

<table>
<thead>
<tr>
<th>EUnetHTA / EVIDEM filtered model - Domain, Criteria, Topics, Issues</th>
<th>N Criteria</th>
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<td>D5 - FINANCIAL AND ECONOMIC ASPECTS</td>
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</table>

Complexity reduced: from 52 Topics to 20 Criteria (-60%)
Expressivity maintained: from 164 (with redundancy) to 143 (single instances) Issues


Economic expressivity enhanced: from 8 to 18 Issues (+120%)

CLINICAL

ECONOMIC

«BROAD» (orphan)

*Redundancy augmented in Topics

Being ready to team up and play your part
**MCDA: a road map across levels of decision making/stakeholders**

**Buying a Car**

**Criterion:** rule or standard of judgment to test the desirability of alternative decisions. It includes objectives and attributes.

**Sensitivity analysis:**
- a) **Weights, Data**
- b) Decision maker or Stakeholder

### 14 Quantitative Criteria

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**Goal**
- Decision maker 1
- Decision maker 2
- Stakeholder 1
- Stakeholder 2

**Objective 1**
- Objective 2
- Objective 3

**Data**

**EVIDEM™**

**BUYING A CAR**

**Being ready to team up and play your part**
**MCDA: a road map across levels of decision making/stakeholders**

The **MCDA Decision Matrix** represents the outcomes for a set of Alternatives and a set of evaluation Criteria.

**Criterion**: rule or standard of judgment to test the desirability of alternative decisions. It includes objectives and attributes.

**Sensitivity analysis**: a) **Weights, Data**; b) Decision maker or Stakeholder.

**An analytical tool**: multi-objective, multi-informant, with low computational complexity

Modified, from: Peacock S: HTA, MCDA and resource allocation. Presentation to ARRC 2013

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<table>
<thead>
<tr>
<th>14 QUANTITATIVE CRITERIA</th>
<th>ATTRIBUTE 1</th>
<th>ATTRIBUTE 2</th>
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**PROTECT - Review of methodologies for benefit and risk assessment of medication 2012**
MCDA for Lombardy health care

**9 DIMENSIONS**

**RELEVANCE OF THE HEALTH PROBLEM:** disease severity, dimension of targeted population, goals of the health system

**RELEVANCE OF THE TECHNOLOGY:** completeness and validity of evidence, type of health service

**SAFETY:** added safety and tolerability

**EFFECTIVENESS:** added efficacy / effectiveness, patient reported outcomes, compliance with guidelines, problems of available alternatives

**FINANCIAL ASPECTS:** direct financial impact on NHS, impact on other sector’s expenses, cost-effectiveness, impact on efficiency of health care offering

**EQUITY OF ACCESS:** fair opportunity of access

**SOCIAL ASPECTS:** impact on social needs, stakeholder pressures / needs

**ORGANISATIONAL:** system capacity and good use within organisations

**LEGAL ASPECTS:** adherence to legal requirements

**14 QUANTITATIVE**

**6 QUALITATIVE**

Emerging Techs

**EVIDEM**

Diffusing Techs

Being ready to team up and play your part
TAVI for severe, symptomatic, inoperable / high-risk aortic stenosis

Assessment

Cardiac surgery

TAVI

Only drugs

Follow up of registration study accepted by FDA (on 360 patents)

Comorbidity Score <= 1

"Robust patient"

5.807 patients (all interventions)

eta <= 80 e combinedscore <= 1

1.536 patients (all interventions)

eta > 80 e combinedscore <= 1

Appropriateness problem (17% of total number of TAVI indications)

LOST VALUE

Follow up of registration study accepted by FDA (on 360 patents)

ADDED VALUE

Log Rank test: p < 0.0001 for both populations

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QUANTITATIVE CRITERIA

Inoperable patients
High-risk patients

LOST VALUE
0.51

ADDED VALUE
0.60

EUnetHTA & EVIDEM model:
Domain, Criteria, Topics, Issues

TAVI for severe, symptomatic, inoperable / high-risk aortic stenosis
MCDA for Lombardy health care

Drug Radiology

EndoBarrier for resistant obesity, type 2 diabetes
Genomic tests for breast cancer adjuvant Tx
Renal denervation for resistant hypertension
Statins for CV risk
TAVI for aortic stenosis
BAROSTIM for resistant hypertension
Robot-assisted surgery
LVAD for intractable HF
Kalideco for Cystic Fibrosis

Being ready to team up and play your part
Orienting health care delivery to Outcomes, not to Outputs

- Process is often more important than the numbers
- Value focused thinking and values clarification
- Preferences are constructed as part of the decision process
- Consistent with deliberative-analytic methods

Scoping

Assessment: HTA

Appraisal: MCDA

Service programming: PBMA

Communicate Decisions

1) Should assessment only resolve the decision?


3) To which extent MCDA criteria matrix should or must shape and orient the decision?

4) Are we prepared to rethink Cost-Effectiveness in terms of effectiveness to be lost for effectiveness to be gained?

Being ready to team up and play your part
HTA + MCDA = Best Value in Health Care

Value: health care return expected from people when the system does reimburse a technology instead of an array of other health care technologies with other effects and other costs.

Harvesting information valuable to health

MCDA with Values and Criteria as a road map across levels of decision making/stakeholders

- EMA, NB
- Licensing, MA
- National agencies
- P&R
- Regions, Hospitals
- Acquisition, distribution, prescription


Being ready to team up and play your part