ARE THE RESULTS OF ECONOMIC EVALUATIONS GENERALIZABLE?
Evidence from Studies of Pharmaceuticals in Western Europe

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BACKGROUND TO THE PROBLEM

- Many factors, varying from place to place, are thought to limit the generalizability of economic evaluations.
- Decision makers may find it difficult to interpret, for their setting, a study done elsewhere.
- Pharmaceutical manufacturers may need to repeat studies in every setting.
- In the future there is a possibility of European-level decision making.

STUDY QUESTIONS

- What are the main causes of variation in study results from place to place?
- Does the extent of variation differ among different health economic study types? (e.g. modelling studies, trial-based studies).
- Are there systematic differences in study results between particular countries?
- Is the extent of variation in study results between countries important for decision-making?

METHODS

- Conducted a literature review using OHE-HEED and NHSEED to identify European studies.
- Considered multi country studies and groups of single country studies with high degree of methodological comparability.
- Undertook a detailed review and classification of studies.
- Made currency conversions by general Purchasing Power Parities.

- Classified studies by extent of generalizability (based on size of difference in results and importance for decision-making).
- Examined whether there were systematic differences in study results (i.e. what percentage of the time is the result for Country A more cost-effective than that for Country B?)
- Examined the importance of results for decision-making at varying thresholds of cost per QALY (or life year).
RESULTS

- Quantity of studies and range of coverage.
- Major causes of variation in study results from place to place.
- Extent of variation among different health economic study types.
- Systematic differences in study results between countries.
- Importance of variation in study results for decision-making.

QUANTITY OF STUDIES AND RANGE OF COVERAGE

- 2400 references retrieved.
- 46 intercountry comparisons:
  - 29 comparisons in multicountry studies;
  - 17 comparisons in methodologically-equivalent single-country studies.

COUNTRIES INCLUDED IN THE PAPERS ANALYSED

CLASSIFICATION OF STUDIES BY NUMBER OF COUNTRIES COMPARED

STUDY CLASSIFICATIONS

Type C: Same effectiveness data and resource use for all countries, with different unit costs.
(Majority were trial-based studies.)

Type RC: Same effectiveness data for all countries, with different resource use and unit costs.
(Mainly modelling studies, a few trial-based.)

Type REC: Different effectiveness data, resource use and unit costs for all countries.
(Mixture of modelling and trial-based.)

Type NI: Detailed data for only one country, with negligible information about other countries.

Main Reasons for Variation Among Countries

Note: Type NI comparisons excluded because of lack of information.
MAJOR CAUSES OF VARIATION IN STUDY RESULTS FROM PLACE TO PLACE

- Depends on type of study.
- When only unit costs are allowed to vary, drug costs and hospitalization costs are the most important causes.
- When all factors are allowed to vary, differences in resource use and cost are the most important causes.

CATEGORIZING LEVELS OF GENERALIZABILITY (1)

- Fully generalizable: less than twofold difference in ICERs, or cost saving for all countries.
- Partly generalizable: more than twofold difference in ICERs but unlikely to change decision; or twofold difference in ICERs in less than 50% of countries.

CATEGORIZING LEVELS OF GENERALIZABILITY (2)

- Low generalizability: more than twofold difference in ICERs likely to cause a change in decision; or twofold difference in ICERs in more than 50% of countries.
- Non generalizable: big differences in ICERs in nearly all countries, likely to lead to changes in the decision.

GENERALIZABILITY OF STUDIES BY METHODOLOGY

RELATIVE COMPARISON OF COST-EFFECTIVENESS AMONG COUNTRIES
CONCLUSIONS (1)

- In part, the amount of variation you find depends on the amount the analyst allows (in study design or analysis).
- Few systematic differences in cost-effectiveness among the five major European countries. Therefore hard to infer results for Country B from a study in Country A.

CONCLUSIONS (2)

- The extent to which study results are generalizable across countries depends critically on the cost-effectiveness thresholds applying in European countries.
- With a threshold (willingness-to-pay) of $50,000, a different conclusion is reached in only 3 of 28 cases.
- The ways in which methodological decisions by analysts impact on generalizability merits further study.