Health Equity Research in HEOR (Health Economics and Outcomes Research): The State of Play in the Asia-Pacific region

For the ISPOR Asia-Pacific Summit 2022 on 20 September 2022
Concurrent Breakout Session 1 (11:45 - 12:45 KST)
Declaration

The presenters have no conflict of interest.
Why health equity research in HEOR?

- **Equity concerns** have been recognized globally in the area of health, welfare, income and other socioeconomic aspects.

- **Social Determinants of Health (SDH)** have been analyzed in the public health literature in terms of various health conditions and services.

- “**Equity**, “**Equality**” and “**Fairness**” are commonly discussed globally, yet its implication, intervention and impact differ greatly across and within the country.

- As a result, health and social gaps persist, and they are even widening following the COVID-19 pandemic.
Health equity research focus in HEOR

- “Improving total population health (i.e., efficiency)” and “Reducing health inequality (i.e., equity)”: Two important policy objectives, yet these may conflict.

- Standard CEAs focus on cost-effectiveness in terms of “efficiency”, but not “equity”.

- Equity considerations are advancing in Asia-Pacific in the following approach: “Equity in process” and “Equity in research”

Session outlines

► **Aim:**
The goal of this session is to share the state of play of health equity research in Asia-Pacific, and discuss the opportunities, challenges and a way forward for advancing equity-informative HEOR.

► **Presenters:**
Sitanshu Kar, India JIPMER
Sarin KC, Thailand HITAP
Diana Beatriz Bayani, The National University of Singapore
Riku Ota, Novo Nordisk Pharm Ltd. Japan
Kyoko Shimamoto, Keio University, Japan

► **Flows:** Presentations and Q&A at the end of the session.
Equity considerations in Health Technology Assessment: Experience from India.

Dr. Sitanshu Sekhar Kar
Professor & Head,
Department of Preventive & Social Medicine,
Principal Investigator of HTAIn Resource Centre,
JIPMER, Puducherry – 605006, India
I have no conflict of interest to declare.

The views expressed in this presentation are solely the presenter’s responsibility, and they do not necessarily reflect the views, decisions or policies of the institutions with which the presenter is affiliated.
Plan of the session

1. Introduction
2. HTA framework in India
3. Equity in HTAIn studies
4. Wayforward
1. Introduction: Equity in HTA

HTA is a multidisciplinary process that systematically evaluates the effects of technology on the availability and distribution of resources and on other aspects of health system performance such as equity and responsiveness.

Two dimensions
1. Decision criteria (e.g., efficiency) for ranking healthcare interventions
2. Fairness of the procedures used in the conduct of HTAs

Source: (Culyer and Bombard: 2012)
2. HTA in India

- Institutional structure for HTA in India - HTAIn

- Established in 2017 under the Department of Health Research, Ministry of Health

Mandate

- Maximizing health

- Reducing out-of-pocket expenditure (OOPE) &

- Minimizing inequality in healthcare services
HTAIn Framework

- DHR Secretariat
- User Dept
- Resource Hubs (RC)
- Technical Appraisal Committee

Coordination
Health Ministries
Conducts HTA
Evaluate HTA studies

9/15/22
Resource Centres and Technical Partners

- Two new Centres added

1. PGIMER, Chandigarh
2. IIPH, Shillong
3. RMRC, Bhubaneswar
4. KIHT, Vizag
5. NIRT, Chennai
6. SCIMST, Trivandrum
7. NIRRH, Mumbai
8. IIPH, Gandhinagar
9. NIE, Chennai
10. JIPMER Puducherry
11. AIIMS, Rishikesh
12. State Cancer Institute and KGMU Lucknow
13. NCDIR, Bangalore
14. IIPH, Hyderabad
15. NIV, Pune
16. AIIMS, Jodhpur
17. AIIMS, New Delhi
18. NIMS, New Delhi
19. NHSRC, Delhi
20. PHFI, Delhi
21. IEG, New Delhi
22. IIT, Mumbai
23. NARI, Pune
24. IIHMR, Jaipur
25. IIPH, Bhubaneswar
26. IIT, Chennai

Legend:
- Resource Hub
- New Resource Hub
- Technical Partner
<table>
<thead>
<tr>
<th>Activity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource centres and technical partners established</td>
<td>28</td>
</tr>
<tr>
<td>Studies Completed and approved by the Board</td>
<td>30</td>
</tr>
<tr>
<td>Studies are completed to be placed for TAC approval</td>
<td>14</td>
</tr>
<tr>
<td>Ongoing Studies/Multicentric studies</td>
<td>18</td>
</tr>
<tr>
<td>Publications</td>
<td>92</td>
</tr>
<tr>
<td>Technical Appraisal Committee meeting</td>
<td>27</td>
</tr>
<tr>
<td>Board Meetings</td>
<td>05</td>
</tr>
<tr>
<td>Stakeholders Meeting</td>
<td>18</td>
</tr>
<tr>
<td>State/UT Nodal Officers appointed</td>
<td>26</td>
</tr>
<tr>
<td>Capacity Building Workshops</td>
<td>14</td>
</tr>
<tr>
<td>International Symposia 2021</td>
<td>01</td>
</tr>
</tbody>
</table>

- MSc HETA, Course
- Health Technology Assessment Board Bill 2022
3. Equity in HTAIn studies

• Reviewed HTA reports in HTAIn repository (accessed: 1-20 Aug 2022)

• Year, title, PICO, time horizon & perspective

• Efficiency considerations
  – ICER, Cost per QALY gained/life years gained/ DALY averted

• Equity considerations
  – Literature review/sub-group analysis, DCEA
Total reports published: 19

All studies included results on efficiency considerations

**Table 1: HTA studies included for the review (N=19)**

<table>
<thead>
<tr>
<th>SN</th>
<th>Study type</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medical devices / diagnostics</td>
<td>15 (78.9)</td>
</tr>
<tr>
<td>2</td>
<td>Population based programs/interventions</td>
<td>3 (15.8)</td>
</tr>
<tr>
<td>3</td>
<td>Drug intervention</td>
<td>1 (05.3)</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>19 (100)</strong></td>
</tr>
</tbody>
</table>
31.6% studies included results on equity considerations

Table 1: Type of equity consideration in HTA studies (n=6)

<table>
<thead>
<tr>
<th>SN</th>
<th>Study type</th>
<th>Total n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Literature review (equity issues)</td>
<td>4 (66.7)</td>
</tr>
<tr>
<td>2</td>
<td>Sub-group analysis after CEA</td>
<td>1 (16.7)</td>
</tr>
<tr>
<td>3</td>
<td>Equity implications based only on CEA findings (without equity related analysis)</td>
<td>1 (16.7)</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>6 (100)</strong></td>
</tr>
</tbody>
</table>
1. About one-third of the reports have addressed equity issues

2. Equity considerations were limited to literature review

3. No study attempted DCEA in the result section

4. Awareness among researchers in the HTA agencies to be raised through collaboration

5. Initial discussion within the HTA resource hubs in India is very encouraging
Is your country/jurisdiction working on generating the evidence and methods to measure and report on health inequality impacts routinely?

1. Yes
2. Partly yes
3. No
4. Not aware
Thank You

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Equity and HTA: perspective from Thailand

ISPOR Asia-Pacific Summit 2022
20th September 2022

Sarin KC

Health Intervention and Technology Assessment Program (HITAP), Ministry of Public Health, Thailand
Declaration

The presenter has no interests to declare that conflict with improving public health outcomes.
Outline

Overview of UHC, HTA, and Equity in Thailand

Case Study: Renal Replacement Therapy

What’s Next for Equity & HTA in Thailand?
Overview of UHC, HTA and Equity in Thailand
Three public health insurance schemes cover the entire population

<table>
<thead>
<tr>
<th></th>
<th>Civil Servants Medical Benefit Scheme (CSMBS)</th>
<th>Social Security Scheme (SSS)</th>
<th>Universal Coverage Scheme (UCS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>1963</td>
<td>1990</td>
<td>2002</td>
</tr>
<tr>
<td>Eligibility</td>
<td>Government employees, pensioners and their dependants</td>
<td>Formal-sector, private employees</td>
<td>The rest of population who are not covered by SSS and CSMBS</td>
</tr>
<tr>
<td>Coverage</td>
<td>9%</td>
<td>15%</td>
<td>75%</td>
</tr>
</tbody>
</table>
| Source of finance    | General tax                                 | Tripartite from employer, employee, government | - General tax  
- Managed by National Health Security Office (NHSO) |

Short History of HTA in Thailand

Universal Coverage Scheme (UCS) Establishment

2002

Semi-autonomous, non-profit institute under the MoPH, Thailand (HITAP)

2004
HTA on RRT for ESRD

2005
PD-first policy for UC

Equity driven study and decision

2007

Thai HTA guideline and standard cost list database issued

2008/2009
HTA-informed benefit package development for UCS and National List of Essential Medicines (NLEM)

2009

2011
2nd Thai HTA process guideline issue
HTA Application in Thailand

Public Policy Evaluations

- Pharmaceutical products
- Vaccine products
- Non-pharmaceutical and non-vaccine products

- National List of Essential Medicines (NLEM)
- National List of Essential Vaccines (NLEV)
- Benefit package under Universal Coverage Scheme (UCBP)
The technical and the procedural elements of HTA

<table>
<thead>
<tr>
<th>Topic Nomination and Selection</th>
<th>Assessment</th>
<th>Appraisal and decision</th>
<th>Dissemination</th>
<th>Implementation and impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal opportunity to nominate topics</td>
<td>Stakeholder consultation</td>
<td>Stakeholder consultation</td>
<td>Feedback from public</td>
<td></td>
</tr>
<tr>
<td>Equity a key consideration when selecting topics</td>
<td>not explicitly included in analysis</td>
<td>Stakeholder consultation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Teerawattananon et al 2019

https://ucbp.nhso.go.th/propose.html

https://hearing.nhso.go.th
Case Study: Renal Replacement Therapy
Providing equitable healthcare

Example: Treatment options for End Stage Renal Disease (ESRD) patients

Providing equitable healthcare

Holistic approach

- Prevention
- Cost containment
- Incentives for adoption
- Expanding infrastructure
- Renal registry
- Training

Graph: Patients per millions population (pmp)

- Incidence
- Prevalence

- 2007: 406.1
- 2008: 528.4
- 2009: 579.1
- 2010: 667.3
- 2011: 776.3
- 2012: 907.3
- 2013: 1073.3

ICER ALONE DOES NOT INFORM DECISIONS

Source: Presentation by Dr. Yot Teerawattananon
What’s Next for Equity & HTA in Thailand?
# Closing the Gap on What is Covered Across the Three Schemes

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| **Source of finance**          | General tax                                 | Tripartite from employer, employee, government | - General tax  
                                |                               |                             | - Managed by National Health Security Office (NHSO) |

*Source: Tangcharoensathien et al (2015)*
Including High-Cost Drugs in Thailand

Objective:
• Understand current landscape
• To create a reimbursement process for high-cost drugs
• Define “high-cost” and upper limit of the CET

How are we getting there?
• Working group with NHSO and NLEM
• Advisory group comprising experts from Australia, UK, South Korea, Canada, Malaysia
• Review of policies in other settings

Thus far, we have consensus on:
• Need for special category for reimbursing high-cost drugs
• Developed a framework for access pathway
• Process for defining high-cost interventions
Explicit Account of Equity in Economic Evaluation

The First DCEA Study In Pipeline: HCV Treatment Options

Revisiting policy on chronic HCV treatment under the Thai Universal Health Coverage: An economic evaluation and budget impact analysis

Waranya Rattanavipapong. Thunyarar Anothalsintawee. Yot Teerawattananon

Published: February 21, 2018 • https://doi.org/10.1371/journal.pone.0193112
Building Capacity in DCEA

Short Course: Distributional Cost-Effectiveness Analysis

Dated: Monday, 19 April – Friday, 23 April 2021

Written by Richard Tan

Summary

In a standard health economics evaluation, the goal is to identify cost-effective interventions that maximize total health. However, a distributional cost-effectiveness analysis (DCEA) model builds upon the standard cost-effectiveness model by incorporating the distributional impacts of health. This allows us to incorporate equity considerations into our analysis. By modeling the changes to the baseline health distribution of a general population that results due to the health interventions in consideration, and incorporating various sources of inequality, the DCEA framework not only allows us to estimate the changes to health outcomes, such as the Health-Adjusted Life Years (HALYs), of each intervention, but also now each decision will change the level of urban inequality that affects the population in question. The DCEA framework then combines these with the relevant social welfare function and leverages on the equity impact plans to help decision-makers determine which intervention is most relevant in improving health and increasing urban health inequality.

https://www.hitap.net/en/179650

https://hiper.nus.edu.sg/course-dcea/
Q1. Does the HTA process in your country include equity as one of the criteria for decision-making?

1. Yes, it is clearly stated
2. No, it is not included
3. Unclear if it is a consideration
4. Not sure
Contact

Sarin KC: sarin.k@hitap.net
Health Equity Research in HEOR: Perspectives from the Philippines and Academia

Diana Beatriz Bayani
20 September 2022
dbayani@u.nus.edu
State of HTA in the Philippines

Slow but steady progress towards HTA institutionalization

• Legal mandate for HTA through the Universal Healthcare Law (2019) to inform funding allocation and coverage decisions
  • HTA committees and focal HTA body were established (26 full-time staff in the HTA Division)
  • Methods and Process Guidelines were published
• Delays in planned workstreams due to the pandemic → evaluation teams largely focused on the assessment of Covid-19 related technologies
• Institutional and operational challenges (e.g., clarity of role/mandate vis-à-vis other expert committees, rapid turnover of technical staff, transition to the Department of Science and Technology)
# State of health equity research in HTA

<table>
<thead>
<tr>
<th>What could be done?</th>
<th>Has it been done?</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe pre-decision health inequalities</td>
<td>Yes, but</td>
<td>• Annual poverty and health surveys</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Potential work to map health inequalities using national data based on income, location, healthcare access, etc.</td>
</tr>
<tr>
<td>Evaluate intervention impacts on inequality in health benefits</td>
<td>Yes, but..</td>
<td>• Required as part of a full HTA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Qualitative methods suggested</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Minimally, a description of groups who may be disproportionately affected must be reported</td>
</tr>
<tr>
<td>Evaluate equity-efficiency trade-offs between reducing health inequalities and improving health</td>
<td>Yes, but..</td>
<td>• Informally through a discussion by HTA Committee members/expert opinion</td>
</tr>
<tr>
<td>Evaluate equity-equity conflicts between prioritizing the severely ill and reducing health inequalities</td>
<td>Yes, but..</td>
<td>• Informally through a discussion by HTA Committee members/expert opinion</td>
</tr>
</tbody>
</table>
The case of the PCV re-assessment

An example of equity-informed HTA using qualitative methods

Context

- New clinical evidence and price proposals prompted a re-evaluation of the vaccines (full HTA)
- Equity impact of the vaccine needs to be characterized

Methods

- Focus group discussions with patient groups, civil societies, and leaders of marginalized communities
- Respondents were asked about their preference between a less cost-effective vaccine that reduces inequity in coverage more (vaccine A) versus a more cost-effective vaccine that reduces inequity less (vaccine B)

Conclusions

- Preferences varied between the stakeholder groups: civil society preferred vaccine B (more weight on efficiency) while patient groups and community leaders preferred vaccine A (more weight on equity)
Key Insights

Valuable lessons learnt in the recent years & challenges yet to be overcome

• HTA processes can formally and consistently consider equity impacts through other methods, even among those in the early stages of HTA development (e.g., LMICs)

• Nonetheless, empirical evidence may be useful in guiding committee deliberations on health technologies

• Remaining challenges
  • Lack of robust data (e.g., baseline health distributions, disaggregated health outcomes data)
  • Lack of technical and institutional capacity
Building capacity for equity-informative HEOR

How can we make health equity research less of a black box?

• Trainings/short courses
• Advocacy and networking
• Research projects and case studies
DCEA short course

A short-course on distributional CEA as a starting point

About the course

• First run last 19-23 April 2021 as an online training
• Attended by 37 participants from 10 countries, mostly Asia and Africa
• Participants were mainly from government HTA agencies or universities
• Mix of lectures and practical hands-on sessions (all in Excel!)

Topics covered

• Overview of DCEA and principles of equity
• Distribution of effects and costs
• Equity-efficiency trade-offs and inequality aversion*
• Distributions of net health benefit
• Direct equity weights
DCEA short course

Feedback from participants

“In a world where **everything needs to be quantified**, the DCEA equips both researchers and policymakers with tools that can pinpoint equity efficiency tradeoffs in various health and non-health areas such that a truly well informed decision can be made.”

“The workshop helped me understand distributional CEA **not only in theory but also on how this may be implemented**.”

Some of the participants from Laos, Nigeria, Philippines, Rwanda, Singapore, Thailand, United Kingdom and Vietnam
Audience Poll

For future courses on health equity research in HTA, which topics would you be interested in learning more about?

- Describing baseline health inequalities
- Evaluating intervention and overall impacts on health inequalities, including consideration of opportunity costs
- Evaluating equity-efficiency tradeoffs
- Evaluating equity-equity conflicts
Health Equity Research in HEOR: The state of play from Japanese academic perspectives

For the ISPOR Asia-Pacific Summit 2022 on 20 September 2022

Kyoko Shimamoto, PhD
Keio University, Tokyo, Japan
Background and general concepts: Equity-informative economic evaluations

- Standard CEAs provide information on cost-effectiveness in terms of “efficiency (i.e., total population health impact)”, but not “equity”.

- Advanced health economic evaluations are conducted, called “Distributional Cost-Effectiveness Analysis-DCEA” that considers both equity and efficiency, in terms of cost and effect.

- DCEA webinar was conducted in June 2022 (available on demand):


doi:10.1016/j.jval.2020.10.001
Audience Poll

Is it worth funding an intervention that is not cost-effective but reduces health inequality?

• Yes
• No
• Only in special circumstances
• Don’t know
Why studies on health inequality aversion?

“Improving total population health” and “reducing health inequality” are two important policy objectives. Yet these objectives may conflict.

“The Health-related Social Welfare Function (HRSWF)” has been studied to articulate the trade-offs between these two objectives.

Evidence exists from the study that examines the public views on health inequality aversion in Europe (e.g., UK, Spain), yet not in Asia-Pacific.


Aim and Methods: The health inequality aversion study

- **Aim**: To advance health equity research in HEOR, particularly to understand the public views on health inequality aversion.

- **Setting**: Japan, the USA and possibly other countries.

- **Data collection**: Online self-reporting questionnaires (analytic n=473 in Japan).

- **Measures**: Health-related Social Welfare Functions (HRSWFs) – one of the required parameters for DCEA (i.e., Atkinson and Kolm indices); and demographic characteristics.
Examples of the policy choice question:
Seven pairwise choices between two programmes, in which Programme A favours the rich, and Programme B favours the poor. In each successive choice, the years (in full health) gained by the poor in the Programme B are gradually reduced.

---

**Total gain is 10 years (= 7 + 3 years)**

**The gap between the richest and poorest fifths after the programme is 16 years**

**Green bars show gains in life in full health from the programme**

**Total health AFTER the programme is shown below the graph**
Table 1: Categorisation of "logical" response for the Japanese study (Analytic n=473)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Category</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pro-Rich1</td>
<td>AAAAAAAA</td>
</tr>
<tr>
<td>2</td>
<td>Pro-Rich2</td>
<td>=AAAAAA</td>
</tr>
<tr>
<td>3</td>
<td>Pro-Rich3</td>
<td>BAAAAAAA</td>
</tr>
<tr>
<td>4</td>
<td>Health Maximiser</td>
<td>B=AAAAA</td>
</tr>
<tr>
<td>5</td>
<td>Weighted Prioritarian 1</td>
<td>BBAAAAA</td>
</tr>
<tr>
<td>6</td>
<td>Weighted Prioritarian 2</td>
<td>BB=AAAA</td>
</tr>
<tr>
<td>7</td>
<td>Weighted Prioritarian 3</td>
<td>BBBAAAA</td>
</tr>
<tr>
<td>8</td>
<td>Weighted Prioritarian 4</td>
<td>BBB=AAA</td>
</tr>
<tr>
<td>9</td>
<td>Weighted Prioritarian 5</td>
<td>BBBBAAA</td>
</tr>
<tr>
<td>10</td>
<td>Weighted Prioritarian 6</td>
<td>BBBB=AA</td>
</tr>
<tr>
<td>11</td>
<td>Weighted Prioritarian 7</td>
<td>BBBBBAA</td>
</tr>
<tr>
<td>12</td>
<td>Maximin</td>
<td>BBBBB=A</td>
</tr>
<tr>
<td>13</td>
<td>Egalitarian 1</td>
<td>BBBBBBB</td>
</tr>
<tr>
<td>14</td>
<td>Egalitarian 2</td>
<td>BBBBBA</td>
</tr>
<tr>
<td>15</td>
<td>Egalitarian 3</td>
<td>BBBBBB</td>
</tr>
</tbody>
</table>

**Distributions per five key categories:**

- **“Pro-rich”** respondents prefer health gains to the better-off. **21%**
- **“Health Maximisers”** are concerned only with increasing total health. **2%**
- **“Weighted prioritarians”** give greater weight to the health of the worse-off. **36%**
- **“Maximin”** respondents are concerned only with improving the health of the worst-off. **2%**
- **“Egalitarians”** value reducing health inequality so much that they are willing to sacrifice potential health benefits to the worst-off. **39%**

The point at which the respondent ‘switches’ or become indifferent between the programmes was used to categorize respondents and derive the level of health inequality aversion.
Preliminary Key Results (con’t)

- The majority of respondents (77%) were willing to trade-off some total health in order to reduce health inequality in Japan.
  
  [vs 82% in the UK]

- Health gains to the poorest fifth should be weighted approx. 6 times as highly as health gains to the richest fifth in Japan.
  
  [vs “between 6 and 7 times” in the UK].

- Yet substantial heterogeneities observed by demographics in Japan (e.g., income quintiles, geographic regions).

- Further comparative evidence is expected in Asia-Pacific and beyond.

Regional activity plans on health equity research in Asia-Pacific

- ISPOR Health Equity Research SIG journal club 2022 in Asia-Pacific:
  
  Friday, December 2nd at 11am KST (Thursday, December 1st at 10pm EST)
  Presentation by Prof Nathorn (Nui) Chaiyakunapruk, University of Utah, USA

- More regional activities under planning among Asia-Pacific researchers:
  Please feel free to contact me if interested in the regional activities on health equity research. The SIG member registration is open.

ISPOR Health Equity Research SIG website:
https://www.ispor.org/member-groups/special-interest-groups/health-equity-research

Kyoko Shimamoto: kyoko.shimamoto@keio.jp

Thank you so much for joining the session!
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Prof Aki Tsuchiya (University of Sheffield, UK)
Ms Stacey Kowal (Genentech, USA)
ISPOR Health Equity Research Special Interest Group

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