From priority-setting decisions to health impact

New explorations of a complex translation process

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Eleanor Grieve, University of Glasgow (UK)
Dr. Yot Teerawattananon, HITAP (Thailand)
Emma Newbatt, Itad (UK)
What can be measured in ‘impact’?

- ePACT, GPRD
- IMS Health
- HES
- Audit

£££

- Resource Planner
- Cost savings case studies
- Disinvestment

- Deaths from VTE
- 5-yr survival for paed cancer
- Employment of people with MH

Uptake

Outcomes

Cross-cutting problems:
- Methodology and attribution
- Data availability
- Interpreting and inferring from individual case studies
Impact: potential and realisation

...there is evidence from a previous study looking at a sample of 10 HTA programme-funded studies, that if 12% of the potential net benefit of implementing the findings of that sample of 10 studies for 1 year was realised, it would cover the cost of the HTA programme from 1993 to 2012.

A METHODOLOGICAL APPROACH FOR ASSESSING THE IMPACT OF HTA

Eleanor Grieve, University of Glasgow

Credit: Dr Hannah Hesselgreaves Prof Andy Briggs
There is a complex translation process between “better decisions” and “better health” depending on the link between decisions and budgets, budgets and payments/transfers, transfers and delivery system, readiness and effectiveness of delivery and implementation and also the validity and reliability of the original data informing the analysis.
“The literature on assessment of HTA influence is still quite limited and there is little on longer term effects on clinical practice and health outcomes”. INAHTA, 2014. Evidence on the Influence of HTA

“...a review of the existing literature on HTA reveals a startling lack of depth, particularly on the impact HTA has had on health-care budgets, efficiency, and on societal health outcomes...whereas the previous 10 years have been well-spent on building the HTA/EBM infrastructure and evidence base, the next 10 should focus on the outcomes.” Straus SE (2004) in Value in Health Special Issue, Health Technology Assessment: Lessons Learnt from Around the World – An Overview, Volume 12 Issue s2, Pages S1 - S5 (June 2009)

“NIHR HTA programme provides NHS with best evidence, NICE provides best guidance – this works...What is not nearly so well understood is how new evidence or guidance impacts on patient care...and what factors influence..” Turner et al, 2015. Impact of NIHR HTA Programme funded research on NICE clinical guidelines
• How to harness the use of evidence in decision-making: well documented (Lavis et al, 2005. Innvaer et al, 2002. M Drummond...)


• How to develop effective methods of changing this ie solutions – less well documented and focus of this research
Case Study
Maternal & Child Health Voucher Scheme, Myanmar

A feasibility study of the Community Health Initiative for Maternal and Child Health in Myanmar

Ministry of Health, Myanmar
World Health Organization (WHO)
Health Intervention and Technology Assessment Program (HITAP)
Full implementation

<table>
<thead>
<tr>
<th></th>
<th>Ex-ante GBP £</th>
<th>Ex-post GBP £</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incremental cost</td>
<td>96</td>
<td>94</td>
</tr>
<tr>
<td>Incremental life year saved</td>
<td>0.2513</td>
<td>0.2782</td>
</tr>
<tr>
<td>Incremental DALY averted</td>
<td>0.2531</td>
<td>0.2789</td>
</tr>
<tr>
<td>ICER per DALY averted</td>
<td>384</td>
<td>336</td>
</tr>
</tbody>
</table>

GDP Myanmar (2010) 414
Threshold used = 1 GDP

NHBs = $\Delta H - \Delta C/\lambda$

Net health benefits (per person) 0.02 0.05
Scaled to pilot (11532 pregnant women) 231 NHBs 576 NHBs
Current (actual) value of implementation

- With $Ed = 0.2$, full implementation = 76% ANC and 87% SBA coverage
- Mid term review of pilot reported 77% uptake SBA
- Current value of the HTA – total patient population eligible for treatment ($n$) and a proportion of these patients ($p$) are already receiving the intervention, then the current value is defined as
  - $N \times p \times NHB = 11532 \times 77\% \text{ (of 87\%)} \times 0.05 = 510 \text{ NHBs}$
The value of implementation

Net Health Benefit: full implementation = 576 NHBs

Net Health Benefit: Current implementation = 510 NHBs

Additional NHB with full implementation

The value of perfect implementation = 66 NHBs
Incremental net benefit of the implementation initiative

An implementation initiative is worthwhile if its benefit in terms of increased utilisation of the intervention (the expected value of actual implementation) is greater than its cost.

\[ n \times \alpha \times \text{NHB} - n \times p \times \text{NHB} - \text{Implementation Cost} / \lambda > 0 \]
HTA: Economic modelling – population health impact – full implementation

Potential Impact

Current /actual uptake

Realised Impact

Value of perfect implementation

Theory based approaches

Conceptual Framework for impact assessment
Realist review – a new method of systematic review designed for complex policy interventions J Health Serv Res Policy July 15, 2005 10: 21-34
Figure 1: evaluation as hypothesis testing

Pawson, R and Tilley, N. Realist Evaluation, 2004 paper
<table>
<thead>
<tr>
<th>CONTEXT</th>
<th>MECHANISMS</th>
<th>OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Levels of resistance’ in iTAD’s framework</td>
<td>Interaction with context to produce outcomes</td>
<td>Garrido et al, 6 steps to HTA impact</td>
</tr>
<tr>
<td>Structural</td>
<td>Mechanisms related to health system &amp; institutional configurations, financing mechanisms, governance, regulatory processes...</td>
<td>Awareness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acceptance</td>
</tr>
<tr>
<td>Cultural</td>
<td>Mechanisms related to trust, relations, values, behavioural responses by patients</td>
<td>Policy process</td>
</tr>
<tr>
<td>Professional</td>
<td>Mechanisms related to duties, rights, power, responsibilities...</td>
<td>Policy decision</td>
</tr>
<tr>
<td>Resources</td>
<td>Mechanisms related to (engagement of) trained staff and patients, capacity...</td>
<td>Practice (clinical)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health / econ outcomes</td>
</tr>
</tbody>
</table>

Garrido et al. HTA and policy making in Europe. 2008
Scaling up cervical cancer screening in the midst of human papillomavirus vaccination advocacy in Thailand

Jomkwan Yothasamut¹, Choenkwan Putchong¹, Teera Sirisamut¹, Yot Teeawattananon¹, Sripen Tantivess¹,²*

Abstract

Background: Screening tests for cervical cancer are effective in reducing the disease burden. In Thailand, a Pap smear program has been implemented throughout the country for 40 years. In 2008 the Ministry of Public Health
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Total costs Bt</th>
<th>Total QALYs</th>
<th>NHBs WTP Bt160000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing screening @ 20% uptake</td>
<td>$9090</td>
<td>28.07</td>
<td>28.01</td>
</tr>
<tr>
<td>Recommended screening @ 20%</td>
<td>$8819</td>
<td>28.08</td>
<td>28.02</td>
</tr>
<tr>
<td>Recommended screening @ 80%</td>
<td>$7044</td>
<td>28.10</td>
<td>28.06</td>
</tr>
<tr>
<td>Vaccination @ 100%</td>
<td>$18,306</td>
<td>28.13</td>
<td>28.02</td>
</tr>
</tbody>
</table>
## Potential net population health benefit of a new intervention

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Size of eligible population</th>
<th>NHB</th>
<th>Coverage</th>
<th>Population NHBs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing screening strategy</td>
<td>14m</td>
<td>28.01</td>
<td>20%</td>
<td>78m</td>
</tr>
<tr>
<td>Recommended screening strategy</td>
<td>16m</td>
<td>28.06</td>
<td>80%</td>
<td>359m</td>
</tr>
<tr>
<td>Vaccination</td>
<td>19m</td>
<td>28.02</td>
<td>100%</td>
<td>532m</td>
</tr>
<tr>
<td>Question</td>
<td>Summary of conceptual framework</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>What is the predicted expected gain in population health from a policy change given best evidence? What is the uncertainty and priorities for research?</td>
<td>Initial HTA model based on available evidence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Has the HTA changed policy?</td>
<td>Observation of policy, best assessment of counter-factual</td>
<td></td>
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<tr>
<td>What is the realised expected gain in population health given best evidence?</td>
<td>Observation of uptake and implementation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How do we explain the difference between expected and actual gain in population health? What is the maximum we can pay to increase uptake?</td>
<td>Qualitative work with relevant stakeholders; quantitative analysis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What implementation activities and policy changes can help address the gap between predicted and realised?</td>
<td>Evidence on cost-effectiveness of implementation activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What does additional evidence suggest about expected and actual gains in population health?</td>
<td>Update of initial HTA with further evidence from appropriately designed research</td>
<td></td>
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</tbody>
</table>
iDSI and its funders - BMGF, DFID, Rockefeller Foundation

NI for providing slides annotated NICE:
• Kalipso Chalkidou, MD, PhD, Director
• Ryan Li, PhD, Advisor

Colleagues at York for support- Paul Revill, Prof Mark Sculpher

‘Real world evaluation’ course, Sheffield University, Feb 2016
Realist summer school, Liverpool University, Aug 2016
• Gerdhardus, A and Dintsios C. The impact of HTA reports on health policy: a systematic review 2005 GMS Health Technology Assessment GMS Health Technol Assess. 2005; 1:
• Sorenson et al. How can the impact of health technology assessments be enhanced? WHO Regional Office for Europe and European Observatory on Health Systems and Policies, 2008
CASE STUDY: HPV VACCINE IN THAILAND

Health Intervention and Technology Assessment Program (HITAP)
HTA-informed decision making in Thailand

- Pharmaceutical reimbursement list
- The Subcommittee for Development of the National List of Essential Medicines
- Based on evidences on efficacy, safety and healthcare cost
- Pharmacoeconomic data was introduced in the 2008 NLEM revision (high cost medicines).

- Non-pharmaceutical package
- Subcommittee for Development of the Benefit Package and Service Delivery (SCBP)
- Engaging a broad range of stakeholders in the process of topic nomination and prioritization
- HTA was introduced in 2009.
The medicines selection process

20 National Expert Panels

The Working Group for the Coordination and Consolidation of NLEM

The Subcommittee for Development of NLEM
Setting criteria for medicines selection and prioritizing those medicines for economic evaluation

The Health Economics Working Group
Commissioning non-profit organisation for economic evaluation

Non-profit organisations
Conducting economic evaluation studies (precisely observing the national HTA guidelines)

The Health Economics Working Group
Reviewing the economic evaluation report and formulating policy recommendations

The Working Group for the Coordination and Consolidation of NLEM

The Price Negotiation for NLEM Selection Working Group

The Subcommittee

Healthcare cost

Safety

Efficacy

Cost-effectiveness

+/– Price negotiation

Budget impact
HPV vaccine in Thailand

Request from government about the appropriate choice for prevention and control of cervical cancer

2007

Ministry rejects use of vaccine

Published on September 18, 2007

High cost cited as main reason for decision

The Public Health Ministry has rejected a recommendation from health experts to register the Human Papillomavirus (HPV) vaccine, which could prevent cervical cancer, because a national vaccination programme would be too expensive.

2007-2008

HTA on policy options for prevention and control of cervical cancer

Since 2008

Scale up the coverage of screening services

2016

Under consideration of the Subcommittee for Development of NLEM

1Increase in the coverage from 30% in 2008 to 70% in 2009 and until now

HTA on policy options for prevention and control of cervical cancer

Results and policy recommendation from HTA

- All screening options are cost-saving.
- HPV vaccine was cost-ineffective at the current price when this study conducted.
  - even if lifetime protection was applied.
- Providing VIA for younger women 30-45 years and PAP smear for women aged 45-60 years was the most cost-effective option.

Response from the industry

Threshold analysis
HPV vaccine become cost-effective if total vaccine price (3-dose course)

• $270 (life-time duration of protection)
• $167 (10-year protection)

Companies announced significant price reduction of the HPV vaccines
*Calculated at 3-dose course

Price per dose (for the government) dropped from $160 in 2007 → $80 in 2009 → $16 in 2011
Vaccine pilot programme in 2011

Target group and setting
• Women aged 11 years
• Ayutthaya province

Results
• Acceptability (91%-98%)
• Vaccine coverage (91% for 1st dose, 87% for 2nd dose)
• Side effects (76% report no side effect)
• Management & cold chain system
  • Vaccine storage - insufficient vaccine store (48% of syringe- prefilled)
  • Vaccine wastage rate - less than 1%
What is next?

• In 2015, based on recent HITAP’s recent analysis, the vaccine was recommended for all Thai girls aged 12 years.
  • vaccine price should be 200 THB or ~ 9 USD per dose (20-year protection)
  • HPV DNA test at the age of 30 years, and screening every 5 years
• The Subcommittee for Development of NLEM is currently considering an inclusion of HPV vaccine into NLEM.
  • the process of vaccine price negotiation
  • a national program
• M&E of vaccine acceptance, compliance, and impact to cancer incidence and mortality as well as on screening performance need to be conducted.
DESIGNING A MONITORING, EVALUATION AND LEARNING FRAMEWORK TO SUPPORT PRIORITY SETTING

Emma Newbatt, Itad
Overview of session

• Unpacking iDSI’s Theory of Change
• Designing a monitoring, evaluation and learning (MEL) framework for iDSI
• Capturing institutional change at country level
Better Decisions for Better Health: iDSI Theory of Change

**Stronger country institutions**

- Evidence-informed, transparent, independent, consultative decision making processes
- Accountable institutions and processes protect politicians from vested interests and help defend tough choices

**Better decisions**

- More efficient and equitable resource allocation decisions with trade-offs made explicit

**Effective partnerships through iDSI**

- Demand-driven support
- Policy-informed knowledge products

**Better Health**

- Practical support and knowledge products
Unpacking the Theory of Change

Effective partnerships through iDSI
- Practical support and knowledge products

Stronger country institutions
- Evidence-informed, transparent, independent, consultative decision making processes

Better decisions
- More efficient and equitable resource allocation decisions with trade-offs made explicit

Better Health

Demand-driven support Policy-informed knowledge products

Accountable institutions and processes protect politicians from vested interests and help defend tough choices

iDSI is a robust, effective and functioning network.

iDSI creates strong links with global health stakeholders who are able to advocate for evidence-informed priority setting.

iDSI builds strong partnerships with organisations who can provide practical support at country level.

Strengthened technical capacity for evidence informed priority setting at country level.

Mandated and credible institution(s) functioning in evidence-informed priority setting at country level.

Routine generation of high quality, evidence-informed products at country level.

Increased political commitment and buy-in to evidence-informed priority setting agenda from stakeholders.

There is a strengthened network of suppliers and users of evidence-informed products and policy at country level.

Creation of institutionalised structures and processes for routine consideration of evidence into policy and resourceing decisions.

Decision-making in health is undertaken according to the core principles of evidence-informed priority setting and with ethical and social value considerations.

More efficient and equitable resource allocation decisions with trade-offs made explicit.

Results in Development
Designing a MEL framework

- Monitoring performance
- Testing the Theory of Change
- Learning what works

**Effective partnerships through IDSI**

- IDSI creates strong links with global health stakeholders who are able to advocate for evidence-informed priority setting.
- IDSI builds strong partnerships with organisations who can provide practical support at country level.

**Stronger country institutions**

- Strengthened technical capacity for evidence-informed priority setting at country level.
- Increased political commitment and buy-in to evidence-informed priority setting agenda from stakeholders.
- There is a strengthened network of suppliers and users of evidence-informed products and policy at country level.
- Creation of institutionalised structures and processes for routine consideration of evidence into policy and resource allocation decisions.

**Evidence logs**

- Mandated and credible institution(s) functioning in evidence-informed priority setting at country level.

**Country level self-assessments**

- Routine generation of high quality, evidence-informed products at country level.

**Periodic deep dive evaluations**

- Decision-making in health is undertaken according to the core principles of evidence-informed priority setting and with ethical and social value considerations.
- More efficient and equitable resource allocation decisions with trade-offs made explicit.

**Impact evaluation**

- Better healthcare coverage
- Better Health
Principles of the MEL framework

✓ Flexible and adaptable
✓ Practical and easy to use
✓ Realistic in its ambitions
✓ Meets the needs of different stakeholders
✓ Supports learning and improvement
**Partnerships: Network assessment**

...Assessment of the **connectivity** and **health** of the network (core partners and activity partners)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Focus</th>
<th>Tools</th>
</tr>
</thead>
</table>
| **Network connectivity** | • What is the network profile, in terms of its density, connectedness, balance, and/or centralization  
• Who is talking to, or working with, whom?  
• Who gives and seeks advice or mentors others?  
• Who gives resources to whom?  
• Who has access to whom?                                                                 | Network survey and KII's    |
| **Network health**       | • Is the purpose of the iDSI network understood by all members?  
• What is the performance of the network?  
• Is the network operating as members require it to?  
• What is the capacity of the network?  
• What are the challenges and opportunities facing the network? |                            |
**Partnerships: International level**

...Assessment of *knowledge products*, *convening and networking* and engagement and advocacy with *Global Health Funders*

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Indicators</th>
<th>Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge products</td>
<td>• Quality of products&lt;br&gt;• Use of knowledge products&lt;br&gt;• Uptake of knowledge products</td>
<td>• Review of QA processes&lt;br&gt;• iDSI web traffic and citation review&lt;br&gt;• Survey to users of knowledge products&lt;br&gt;• In-depth interviews</td>
</tr>
<tr>
<td>Convening and networking activities</td>
<td>• Extent to which the event generated greater awareness among participants&lt;br&gt;• Extent to which the event built new networks and relationships around an issue&lt;br&gt;• Extent to which the event generated technical and procedural capacity around an issue</td>
<td>• Event feedback forms&lt;br&gt;• In-depth interviews</td>
</tr>
<tr>
<td>Engagement and advocacy with Global Health Funders</td>
<td>• Depth of engagement with funder&lt;br&gt;• Extent of influence on funders’ approaches to evidence informed priority setting</td>
<td>• Engagement and advocacy scale (completed by iDSI partners)&lt;br&gt;• Interviews with funders</td>
</tr>
</tbody>
</table>
Country Level: four integrated parts

- **Evidence logs**: ongoing use by iDSI partners to record activities and evidence of change.

- **Self-assessment scales**: annual scaler tool for making judgements on extent of change and contribution.

- **Deep dive evaluations**: periodic in-depth validation of self-assessment findings and exploration of key elements of the ToC.

- **Impact evaluations**: experimental / quasi experimental evaluation testing impact of priority setting on health outcomes.
Scope of the annual self-assessment scales

Stronger country institutions

- Strengthened technical capacity for evidence-informed priority setting at country level.
- Mandated and credible institution(s) functioning in evidence-informed priority setting at country level.
- Routine generation of high-quality, evidence-informed products at country level.
- Increased political commitment and buy-in to evidence-informed priority setting agenda from stakeholders.
- There is a strengthened network of suppliers and users of evidence-informed products and policy at country level.
- Creation of institutionalised structures and processes for routine consideration of evidence into policy and resourcing decisions.

Better decisions

- Decision-making in health is undertaken according to the core principles of evidence-Informed priority setting and with ethical and social value considerations.
- More efficient and equitable resource allocation decisions with trade-offs made explicit.

Results in Development
Principles underpinning the annual self-assessment

- **Participation**: Process likely to be most valuable if it involves a number of different stakeholders and encourages reflection and learning.

- **Honest and constructive self-reflection**: Progress takes time and not all approaches are successful – both successes and failures are important to reflect on in terms of future strategies.

- **Learning**: Not a performance assessment, but an opportunity for learning.

- **Evidence quality**: The range and the quality of the evidence that is available to support the assessments should be considered.
Step 1 – Assess outcome

Example: Political commitment to evidence informed priority setting

• Convene partners to make a judgement on which point along the scale best describes the situation in relation to the outcome at country level.

• Provide robust justification and evidence to support assessment.

### Increased political commitment and buy-in to evidence-informed priority setting from stakeholders.

<table>
<thead>
<tr>
<th>Status in relation to the outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>0</strong></td>
</tr>
<tr>
<td>No evidence of any commitment or interest in evidence-informed priority setting among policy makers at country level.</td>
</tr>
</tbody>
</table>
Step 2 – Assess iDSI contribution

• Make a judgement on what the **contribution of the iDSI partner** has been to the outcome.

• Provide **supporting evidence** for score.

<table>
<thead>
<tr>
<th>iDSI contribution during the previous year</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>iDSI made <strong>no contribution</strong> to progress in relation to the outcome over the past year.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>iDSI made a <strong>limited contribution</strong> to progress in relation to the outcome over the past year.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>iDSI made <strong>some contribution</strong> to progress in relation to the outcome over the past year.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>iDSI made a <strong>critical contribution</strong> to progress in relation to the outcome over the past year.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
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</table>

**Score for iDSI contribution to change:**

**Evidence:**
Step 3 – Validation and synthesis

- Itad **quality assurance and validation**
- **Synthesis** and extraction of **lessons learned** across iDSI portfolio
- Feed into iDSI **reflection and strategic planning** process
Why this approach?

- **Complex institutional changes** difficult to capture using discrete SMART indicators
- Scales capture **direction of travel**, not just end point
- Allows tracking of progress over time – key when outcomes are **long term and difficult to achieve**
- Reflect on **constraints and enablers** at country level, as well as iDSI contribution
- **Easy to use** and doesn’t place too much burden on partners
- Focused on **reflection, learning and strategic planning** rather than performance assessment
Thank you for listening!