The HOME Roadmap:
Paving the way to core outcomes for patient-reported symptoms in eczema trials

COMET meeting Nov 2016

Talk will cover:

• What is HOME

• What is the HOME roadmap

• How HOME followed the roadmap to agree a core outcome measurement instrument for patient-reported symptoms

• Similarities and differences between the HOME roadmap and the COSMIN/COMET guidance
HOME = Harmonising Outcome Measures for Eczema

- Founded in 2010
- Multiple, unvalidated outcome measures for eczema severity
- Evidence synthesis
- Need for COS
- Evidence driven, evidence generating
- Consensus methodology
- Open membership
- OMERACT

Professors Hywel Williams and Jochen Schmitt
• HOME roadmap, 2014
• To provide framework for others working in COS in skin disease
• No published guidance on whole process
• Included current guidance:
  – OMERACT filter (version 1)
  – COSMIN quality criteria for assessing measurement properties of instruments
STEP 1
Define scope and applicability

STEP 2
Determine core outcome domains ("what" is to be measured)

STEP 3
Agree core outcome instruments ("how" to measure the domains)

STEP 4
Dissemination and review any new information

Covers whole process of COI selection
Applying the Roadmap – Step 1

STEP 1
Define scope and applicability

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Determine core outcome domains (“what” is to be measured)

STEP 3
Agree core outcome instruments (“how” to measure the domains)

STEP 4
Dissemination and review any new information
Agreed at HOME II consensus meeting, Amsterdam 2011

<table>
<thead>
<tr>
<th>Population</th>
<th>Children and adults with eczema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>Clinical trials (initial focus), clinical practice (when capacity)</td>
</tr>
<tr>
<td>Geographical scope</td>
<td><strong>Global</strong></td>
</tr>
<tr>
<td>Stakeholders</td>
<td><em>Clinicians, patients</em>, methodologists, pharma, regulatory</td>
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</table>
Roadmap

STEP 1
Define scope and applicability

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Determine core outcome domains ("what" is to be measured)

STEP 3
Agree core outcome instruments ("how" to measure the domains)

STEP 4
Dissemination and review any new information

Applying the Roadmap – Step 2
• eDelphi (JID, 2011) presented to the HOME II consensus meeting
  – Preliminary set of core domains
  – Plenary and breakout group discussions

• Consensus rules agreed *a priori*
  – Anonymous, keypad voting
  – Specialised software for real time results
  – Consensus reached if less than 30% of voters disagree
    • At least 70% of voters agree or are unsure
Applying the Roadmap – Step 2

- Clinician-reported signs
- Patient-reported symptoms
- Quality of Life
- Long-term control of flares

Applying the Roadmap – Step 2

- Clinician-reported signs
- Patient-reported symptoms
- Quality of Life
- Long-term control of flares
Applying the Roadmap – Step 3

STEP 1
Define scope and applicability

STEP 2
Determine core outcome domains ("what" is to be measured)

STEP 3
Agree core outcome instruments ("how" to measure the domains)

STEP 4
Dissemination and review any new information
**Step 3** comprises **5 stages** in the HOME roadmap

**STEP 3**
Agree core outcome instruments ("how" to measure the domains)

**STAGE 1**
Identify all instruments previously used to measure the domain.

**STAGE 2**
Establish the extent and quality of testing of the identified instruments.

**STAGE 3**
Determine which instruments meet the OMERACT filter and can be shortlisted for further consideration.

**STAGE 4**
Carry out validation studies on shortlisted scales.

**STAGE 5**
Finalise core outcome(s) for domain.
Identify all instruments previously used to measure the domain.

Establish the extent and quality of testing of the identified instruments.

Determine which instruments meet the OMERACT filter and can be shortlisted for further consideration.

Carry out validation studies on shortlisted scales.

Finalise core outcome(s) for domain.

**Systematic review**

- Long-list of 30 instruments identified (18 un-named)
- 20 composite instruments of clinician-reported signs and patient-reported symptoms

Gerbens et al *BJD* 175;678-686 (2016)
Identify all instruments previously used to measure the domain.

Establish the extent and quality of testing of the identified instruments.

Determine which instruments meet the OMERACT filter and can be shortlisted for further consideration.

Carry out validation studies on shortlisted scales.

Finalise core outcome(s) for domain.

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**STAGE 2**

- **Extent, quality and results of the testing of measurement properties rated for each instrument (COSMIN methodology)**
  - Has the measurement property been tested?
  - Did it pass the test?
  - Were the testing methods of sufficient quality to trust the results?

- **COSMIN sensitive search strategy for validation studies**

- **29 included studies evaluating 18 instruments**

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Gerbens *et al* Allergy 2016
STAGE 1
Identify all instruments previously used to measure the domain.

STAGE 2
Establish the extent and quality of testing of the identified instruments.

STAGE 3
Determine which instruments meet OMERACT filter - shortlisted for further consideration.

STAGE 4
Carry out validation studies on shortlisted scales.

STAGE 5
Finalise core outcome(s) for domain.
Results of SR of measurement properties used to determine which instruments pass the OMERACT filter (Boers et al 1998)

<table>
<thead>
<tr>
<th>Truth</th>
<th>Discrimination</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Is the measure truthful, does it measure what it intends to measure? Is the result unbiased and relevant?&quot;</td>
<td>&quot;Does the measure discriminate between situations that are of interest?&quot;</td>
<td>&quot;Can the measure be applied easily in its intended setting, given constraints of time, money, and interpretability?&quot;</td>
</tr>
<tr>
<td>1. Face validity</td>
<td>1. Reliability (internal consistency, reliability, measurement error)</td>
<td>1. Time taken</td>
</tr>
<tr>
<td>2. Content validity</td>
<td>2. Sensitivity to change (responsiveness)</td>
<td>2. Cost</td>
</tr>
<tr>
<td>3. Construct validity (structural validity, hypothesis testing, cross-cultural validity)</td>
<td></td>
<td>3. Interpretability</td>
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<tr>
<td>4. (Criterion validity)</td>
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Short-list of potential instruments
Home IV consensus meeting
Malmö, Sweden April 2015

- Attendees reflected agreed scope and applicability
  - 70 attendees (12 patients, 38 clinicians, 7 methodologists, 13 pharma)
  - North and South America, Europe, Japan and Australia
- Independent moderator (OMERACT)
• Instruments with inadequate quality in at least one measurement property excluded from further consideration

• Shortlist of 5 partially validated instruments (unclear in some areas)

• Plenary / breakout group discussions of shortlisted instruments

  ✓ Patient Oriented Eczema Measure (POEM) preferred instrument by all 6 breakout groups

  ✗ No group preferred the patient versions of clinical rated signs instruments or single symptom instruments

  vote on which (if any) of the potential instruments could be recommended (stage 5)
Identify all instruments previously used to measure the domain.

Establish the extent and quality of testing of the identified instruments.

Determine which instruments meet the OMERACT filter and can be shortlisted for further consideration.

Carry out validation studies on shortlisted scales.

Finalise core outcome(s) for domain.

“POEM should be recommended for the COS”

87.5% agreed
9.4% unsure
3.1% disagreed

Less than 30% disagreed that the POEM should be recommended for the core set

No requirement to develop a new instrument
STAGE 1
Identify all instruments previously used to measure the domain.

STAGE 2
Establish the extent and quality of testing of the identified instruments.

STAGE 3
Determine which instruments meet the OMERACT filter and can be shortlisted for further consideration.

STAGE 4
Carry out validation studies on shortlisted scales.

STAGE 5
Finalise core outcome(s) for domain.

• Some validation gaps in POEM...
• Acceptable quality
• Agreed further work would be carried out...
• Structural validity of POEM – additional items?
• Intensity of symptoms to be added?
• Interpretability
  – Cross-cultural validity
  – MCID in different trial settings and populations
Applying the Roadmap –
Step 4

STEP 1
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("what" is to be measured)

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("how" to measure the domains)

STEP 4
Dissemination and review any new information
**Dissemination** - work in progress...
- Available on website
- Publication in leading journals
- Wider dissemination (industry, funders, regulatory)

**Review of further validation studies**
- To be discussed at HOME V (June 2017)
• HOME roadmap published to guide COS in skin disease

• COSMIN/COMET guidance on selecting COI Prinsen et al Trials 2016
  • Consensus study
  • Framework for all areas of medicine

• HOME roadmap and COSMIN/COMET guidance similar
  • Continue with Roadmap for HOME
  • Two helpful differences...
<table>
<thead>
<tr>
<th>HOME Roadmap</th>
<th>COMET/COSMIN guidance</th>
</tr>
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<tbody>
<tr>
<td><strong>Before</strong> provisionally accepting an instrument</td>
<td><strong>Minimal validation requirements</strong> for provisionally accepting an instrument</td>
</tr>
<tr>
<td></td>
<td>• content validity</td>
</tr>
<tr>
<td></td>
<td>• internal consistency or test/retest or inter-rater reliability</td>
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**REALITY:** POEM recommended with some validation gaps

**Number of instruments per domain**

Ideally one instrument but more than one permitted

Only one instrument recommended

**REALITY:** HOME has recommended only one instrument
• Agreed scope of COS
• Evidence-based consensus process:
  – Domains to be measured
  – Instrument to recommend
  – Further validation studies
• Instrument selection is resource intensive
• Implementation is vital
• HOME roadmap supported by new COSMIN/COMET guidance
For more information on HOME go to
www.homeforeczema.org