Patient-Centered Outcomes Research: Standards for the Development and Selection of Patient Reported Outcome Measures

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Outline

- Overview of Methods
- Results: Concepts / Themes Identified
  - *Minimum Standards*
  - *Issues for Consideration*
- Issues & Outstanding Questions for Discussion

Methods

- Guidance documents were gathered from: internal resource, a brief targeted literature review and website search
- Following literature review and internal discussion concepts & themes were identified as either:
  - Potential Minimum Standards
  - Issues for Consideration
- Concepts & themes were reviewed by internal and external experts

Methods

- ‘Minimum Standards’ and ‘Issues for Consideration’ were drafted by Oxford Outcomes staff with expertise in the area or external experts, with reference to guidance documents and primary literature as required
- All ‘minimum standards’ and ‘issues for consideration’ were internally reviewed by Oxford Outcomes PRO team and external experts as appropriate (on-going)

Methods

Websites

- Food and Drug Administration (FDA)
- European Medicines Agency (EMA)
- International Society of Pharmacoeconomics and Outcomes Research (ISPOR)
- International Society for Quality Of Life Research (ISOQOL)
- Agency for Healthcare Research and Quality (AHRQ)
- Initiative on Methods, Measurement, and Pain Assessment in Clinical Trials (IMMPACT)
- World Health Organization (WHO)
- National Institute for Health and Clinical Excellence (NICE)
- Center for Disease Control (CDC)

Guidance Documents

- FDA PRO label Guidance
- EMA Reflection Paper
- IMMPACT Papers
- ISPOR Task Force Papers
- ISOQOL: Guide to Implementing PRO Assessment in Clinical Practice
- AHRQ: Registries for Evaluating Patient Outcomes
- CMTP: Recommendations for Incorporating PRO into the Design of Clinical Trials in Adult Oncology
- Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN)
- Getting the Most Out of PROMS

Results
Minimum Standards

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1. Consideration of Patient Burden

- Patient burden refers to the time, effort and emotional strain associated with completing a PROM.
- Patient burden should be carefully considered when selecting, developing or using a PROM, and every effort should be made to minimize the burden on the patient.
- Factors affecting burden that need to be considered include: the PROM, study design and patient population
- Patient Centered: Prioritizes the patient in study design. Potentially attenuates missing / erroneous data, and improves reliability – improves standard of information communicated to patients
- Implementation: How to monitor compliance.

2. Estimating and Reporting Reliability

- Internal consistency and test retest reliability should be estimated and reported for each domain when appropriate (based on the nature of the PROM and the patient population).
- The widely reported 0.7 – 0.9 range for α coefficients and >0.70 for ICC coefficients should be considered as threshold guidelines.
- Detailed reporting is required so reliability can be appropriately evaluated. Also assists meta analyses.
- Patient Centered: applies to all PROM research settings
- Implementation: No issues for assessment. Consistent standards of detailed reporting may be difficult to implement.

3. Staff Training: Administration of a PROM

- Training should be provided on the purpose of PROM data collection, administration procedures, completion checking processes and the handling / storage of data.
- Training should also be given on patient communication (e.g. patients being given an opportunity to ask questions, and being informed participation is voluntary and responses are confidential)
- All training should be facilitated through use of a PROM user manual and the study protocol
- Patient Centered: Trained not just on use and administration of the PROM but on communicating with patients
- Implementation: Minimal if incorporated into required staff training

4. Choosing an Appropriate Recall Period

- Is the recall period appropriate for the purpose/intended use, the patient population, the disease/condition, the treatment/device, and the study design?
- Patient understanding of the recall period should be assessed during cognitive debriefing.
- More desirable standard – patient contributes to discussion of recall period during concept elicitation.
- Patient Centered: Patient contribution and assessment of patient understanding
- Implementation: Considering patient input to existing PROM may change recall and require additional validation work

5. Selecting a PROM

- Concept driven: concepts most meaningful / important to patients
- Selected on the basis of their content validity, measurement properties and interpretability, related to the concept (s) of interest, with consideration of patient burden.
- Selection criteria and approach to addressing gaps in the evidence should be clearly documented
- Patient Centered: Focus on concepts most important and meaningful to patients.
- Implementation: Monitoring and reporting issues. For selection to be based on patient driven concepts patient involvement during study design may be needed until more multi dimensional PROMs have been developed for PCOR.

6. Interpretation of Meaningful Change

- Patient reported anchor based methods should be the primary source of data. Distribution based methods should be used to check change identified by patient report is not likely to occur due to chance alone.
- Interpretation of meaningful change should be established for each domain of a PROM, with domain specific anchors.
- Patient Centered: Patient input to definition. Domain level interpretation provides patients with a clearer overall profile. Improved communication of information.
- Implementation: No issues. *A more desirable standard would include the patient as an active participant and would therefore require additional qualitative work and more research.*

7. Establishing and Assessing Content Validity

- Development: Concept elicitation interviews explore all concepts deemed relevant and important based on patient input. Cognitive debriefing interviews assess understanding.
- Evaluating: ensure content relevant, understandable and complete. (Concept elicitation and cognitive debrief interviews)
- Desired standards include documentation
- Patient Centered: Concepts included are patient driven and broad / multidimensional
- Implementation: Broader populations = greater time and costs. For documentation and monitoring a central repository for PROM would be required.

8. Sampling

- Sampling approaches for PROM development/ selection/ validation
- Methods differ for quantitative (validation) and qualitative (development/ selection) studies (but both essentially descriptive)
  - Qualitative research concerned with sampling diversity on sample characteristics
  - Quantitative research focussed on being representative
- Patient Centered: Recruitment of diverse, fully representative samples will support interpretation of data in different groups
- Implementation: These studies can often be incorporated into planned or existing CER studies via secondary analysis.

9. Estimating and Reporting Validity

- Construct validity should be estimated and clearly reported for all domains of any PROM developed or selected.
- Construct validity is a broad concept, encompassing criterion validity, known groups validity, and predictive validity.
- No specific thresholds for establishing validity are detailed; the commonly reported 0.3 – 0.5 for criterion validity is recommended as a guideline.
- Patient Centered: Not unique to PCOR. However, accumulating validity data relating to predicting outcomes will be of more value to PCOR
- Implementation: No issues for assessment. Consistent standards of detailed reporting may be difficult to implement.

10. Estimating & Reporting Ability to Detect Change

- Ability to detect, stability, improvement and deterioration, should be assessed and clearly reported for all PROM domains.
- Reporting should include a clear statement about how change is assessed or determined, the target population, statistical test used and effect sizes.
- More desirable standard – ability to detect change considered meaningful to patients.
- Patient Centered: Not unique to PCOR unless desirable standard applied
- Implementation: Ability to detect change can be difficult in non-interventional settings. In longitudinal settings response shift needs to be considered.

11. Modification of an Existing PROM

- Modifying the content of a PROM requires cognitive debrief interviews. All modifications, excluding those to instructions that do not impact the recall period or concept being measured, also require documentation of the new psychometric properties
- Addition or removal of concepts also require qualitative evidence from concept elicitation interviews
- Patient Centered: Patient involvement in all modifications to ensure the PROM remains relevant, clear and that no important concepts from the patients perspective are deleted or over looked.
- Implementation: Modifications are infrequently reported. Monitoring and documenting compliance with this standard may require a central repository for PROMs used in PCOR.

12. Establishing Multi-Mode Equivalence

- The transfer of any PROM from its original format to another mode of administration requires patient involvement in cognitive debrief and usability interviews.
- Need for quantitative assessment of equivalence should be determined based on the recommendations of the ISPOR ePRO Task Force (Coons et al., 2009). A moderate change requires equivalence testing and a substantial change also requires psychometric assessment.
- Patient Centered: Choice of mode of administration could make participation more convenient. May also make patients feel more of an active participant. *The views of study participants regarding modes of data collection could be usefully recorded and considered*
- Implementation: Will require researchers to be able to review the robustness of any ePROM and the extent to which additional equivalence testing may be required

Results
Issues for Consideration

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Issues for Consideration

1. Response Shift
2. Confirmation of Measurement Properties
3. Interpretation of Profile Measures
4. Development of Short Forms
5. Lessons Learned from Health Technology Appraisals in Other Countries
6. Low Literacy and Non-English Speakers
7. Proxy and Caregiver Reported Outcomes
8. Patient Involvement Beyond the PROM
9. Communication of PROM data to Patients and Clinicians

Issues & Questions for Discussion

- How is PCOR defined / distinguished from other research settings involving PROMs?
- How to develop minimum standards for PCOR without raising the bar too high to be able to use existing PROMs?
- Once standards become more directly applicable to patient centeredness they tend to require monitoring or documentation – how can this be achieved?
- Is the development of a central repository for PROMs used in PCOR a possibility?

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