INDEPENDENT TRANSLATION CHECKLIST

Note: The MDS-established Protocol for Official Non-English Language Translations can be found here for reference. Independent translators are not required to follow this protocol, but it may assist in guiding the development and execution of independent translation projects.

Phase I: Clinical Outcome Assessment (COA) Translation and Back-translation

- ☐ Develop a Forward translation
  - **Note**: MDS recommends that this be completed by individuals who are native speakers or professionally competent in the translated language.
  - **Note:** Translate all pages of the COA, including any introductory pages or score sheets. Use the English version of the COA as a template to maintain appearance and format.
- ☐ Develop a Back-translation
  - **Note**: MDS recommends that this be completed by individuals who are native speakers or professionally competent in the translated language AND who were not involved in the Forward translation.
- ☐ Reconcile the Forward and Back-translations and address any discrepancies.
  - **Note:** Emphasis should be on preserving the cultural meaning of the English text as opposed to a word-by-word literal translation.
- ☐ Submit the following materials to the MDS Secretariat:
  - **Note**: These materials will be used as a record of the translation process followed, but will not be directly reviewed by MDS.
  - The fully completed forward translation
  - The fully completed back-translation
  - A copy of the back-translation which includes comments on items that were examined during the reconciliation process and what decision was made along with the rationale
- ☐ Add the following copyright statement to the final COA translation:

  Copyright © [YEAR FINALIZED] International Parkinson and Movement Disorder Society (MDS). All rights reserved. The [LANGUAGE] translation of the [SCALE] was independently conducted. MDS is not responsible for the accuracy or validity of this translation.
- ☐ Translate the Phase II CPT documents

Suggested Phase I completion timeframe: 6-8 week

Phase II: Cognitive Pretesting (CPT) (Recommended)

Note: CPT is conducted to ensure that translated items are understood by respondents as intended, capturing the same concepts as the source version. It helps verify the cultural and linguistic appropriateness of the translation and identifies any ambiguities or misinterpretations that may affect data quality.

- ☐ Administer the provisionally approved translation to a minimum of 10 patients for CPT.
  - **Note:** The CPT process should be tailored to the specific COA type (e.g., PRO, ClinRO, ObsRO, PerfO). Some COAs may require interviewing care partners and movement disorders specialists. Adapt your method as needed based on the COA type. Independent

translators are strongly advised to review and align with the methods applied during the instrument's original development to preserve conceptual integrity and measurement validity across languages and cultures.
    - **Note**: It is recommended to recruit subjects for CPT until conceptual saturation is reached, meaning no new comments or issues are identified by participants regarding the instructions, questions, or answer options. While there is no fixed number of participants required, approximately 10 patients are generally sufficient to reach saturation.
- ☐ Administer the translated CPT forms following the administration of the COA
- ☐ De-identify all patient data
- ☐ Prepare a summary of your CPT findings for MDS to be submitted with the final COA
- ☐ Once approved, determine if a full-COA validation will be conducted

Suggested Phase II completion timeframe: 4 months

Phase III: Full-COA Validation and Final Steps (Recommended)

Note: When possible, recruit patients from multiple centers to increase the diversity of dialects represented, which supports the Movement Disorder Society's goal of offering globally applicable translations. However, it is recognized that independent translation teams may have limited resources, and a multi-center approach may not always be feasible.

- ☐ Conduct a translation validation study
    - **Note**: Sample size determination for independent translation validation studies is generally based on psychometric recommendations. A widely cited heuristic is to include at least 5 patients per item of the instrument, which ensures adequate sample size for factor analysis and reliability testing. For example, with a 65-item COA such as the MDS-UPDRS, this would require approximately 325–350 patients across different disease stages and demographics. This recommendation is consistent with classical psychometric texts[1, 2]. When feasible, larger samples (e.g., 10 patients per item) may provide more stable parameter estimates and allow for subgroup analyses.
- ☐ Inform MDS of your results from the full-COA validation (if conducted)
- ☐ Provide MDS with the following materials
    - A summary of the process that was conducted
    - Results from the CPT phase (if conducted)
    - Results from the full-COA validation (if conducted)
    - The final translation in a Word document format
    - Final list of translators
    - Any other pertinent information or findings

References

1. Heckler CE. A step-by-step approach to using the SAS™ system for factor analysis and structural equation modeling. Taylor & Francis, 1996.
2. Gorsuch RL. Factor analysis: Classic edition: Routledge, 2014.