

Best Practices for Electronic Migration and Implementation of Patient-Reported Outcome Measures - Condensed Version

The following is a brief summary of the best practices for the successful migration and implementation of an electronic patient-reported outcome measure (ePROM). For further details, please refer to the publication by [*Mowlem et al. 2024*](#) - the current authoritative reference on this topic and the basis for this condensed version. These best practices apply to both paper-to-electronic migrations and in-development ePROMs and focus on screen-based electronic implementations.

Each best practice has an associated classification:

Class 1

Essential to maintain measurement comparability, regulatory acceptability and usability

Class 2

Best practices that the **eCOA Consortium recommends to optimize usability** and achieve the advantages of ePROMs.

Sections:



**System
Functionality Best
Practices**



**Migration Best
Practices**



**Implementation
of Common
Response Scales**

System Functionality Best Practices

Class 1

- ✓ **Provide on-device training and instructions:** Training should include clear instructions on how and when to use the system, and incorporate a training module containing sample questions from the individual response scale types used in the study.
- ✓ **Avoid default responses:** When a respondent lands on a screen, a response should not be preselected or prepopulated
- ✓ **Ensure active screen advancement:** Screens should not automatically advance upon response selection.
- ✓ **Allow backward navigation:** Respondents should be allowed to review and modify responses before submitting data.
- ✓ **Capture data for all items:** Either through enforcing mandatory responses to reduce missing data or capturing confirmation of intention to skip when not enforcing mandatory responses.
- ✓ **Validate inputs:** Prevent out-of-range or illogical responses through appropriate programming.
- ✓ **Final Save and Submit:** A concluding screen should indicate the end of the measurement and serve as confirmation of submission and allow for a final review of responses and then confirm submission.

Class 2

- ✓ **Provide consistent Navigation:** Navigation buttons (like "Next" and "Back") should be consistently placed on the screen.
- ✓ **Support scrolling and non-scrolling options:** Systems should accommodate both scrolling and non-scrolling formats, ensuring respondents view all item information before advancing.
- ✓ **Provide functionality to indicate progress:** Dynamic progress bars or time estimates may motivate respondents.
- ✓ **Use consistent device orientation:** Maintain a fixed orientation (e.g., portrait), unless accessibility requirements demand flexible presentation.

Migration Best Practices

Class 1

- ✓ **Compliance with copyright and licensing terms:** Verify and adhere to requirements from the PROM copyright Measure Owner (MO). MO may provide specific migration advice for a PROM.
- ✓ **Adapt instructional text to suit mode of administration:** Limit adaptations to minor changes only (e.g., replacing "circle response" with "select response"). DO NOT change core wording.
- ✓ **Preserve formatting:** Mirror all formatting such as text emphases (e.g., bold or italic).
- ✓ **Present self-contained items:** Ensure each screen includes all necessary information for that item, including as appropriate: item specific instruction; item stem; recall period; specific item text; and all response options. If scrolling is required to accommodate an item, then respondents must view all the item information and select a response before progressing.
- ✓ **Employ branching logic:** When applicable implement automated skip patterns.
- ✓ **Maintain original response order:** Maintain the order of response options regardless of if the display orientation changes
- ✓ **Make response hit spots equal size:** Ensure equal-sized, evenly spaced response options.
- ✓ **Allow space for translation:** Design screens to accommodate text expansion in translated versions (e.g., implement scrolling).

Class 2

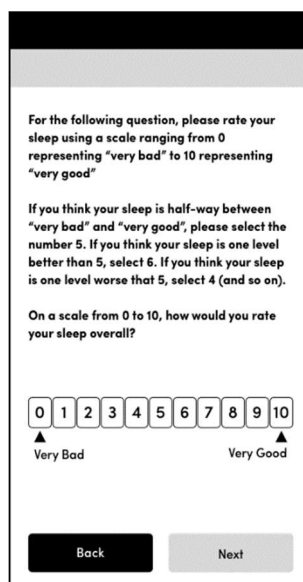
- ✓ **Display the PROM title and copyright message:** Typically a requirement of © license / permissions granted by the MO.
- ✓ **Present a single item per screen:** Displaying one item per screen supports consistency across devices, especially on smaller screens.
- ✓ **Enforce vertical response orientation:** For Verbal Rating Scale (VRS) options, adjust horizontal response scales to vertical presentation when applicable (e.g., on smaller screens).
- ✓ **Remove response numbering:** For textual responses when those numbers are only required for coding purposes. Exception being if the MO requires numbering to be retained.
- ✓ **Employ consistent fonts:** Standardize (whenever possible) font styles and sizes throughout.
- ✓ **Avoid free-text entry:** Consider alternative approaches (e.g., prepopulated lists of common entries)

Implementation of various common types of response scales

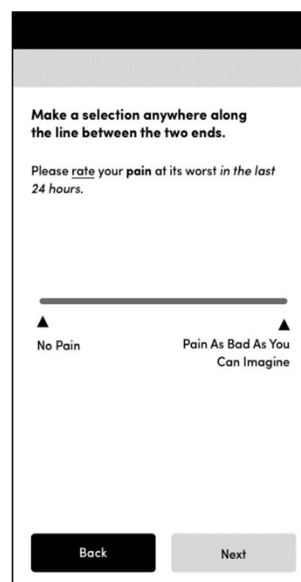
Common response scales, such as verbal rating scales (VRS), numeric rating scales (NRS), and visual analog scales (VAS) require tailored implementation strategies. For details of best practices in implementing these response scales (with example screenshots) please refer to Table 4 (page 89 and 90) of the Mowlem et al. 2024 paper.



**Verbal Rating Scale
(VRS)**



**Numeric Rating Scale
(NRS)**



**Visual Analogue Scale
(VAS)**

Further assistance

If readers seek a user-friendly flowchart to guide them through the implementation of these guidelines, then please refer to Figure 2., page 87 of the Mowlem et al. 2024 paper.

Reference

Mowlem et al. [Best Practices for the Electronic Implementation and Migration of Patient-Reported Outcome Measures](#). Value Health. 2024 Jan;27(1):79-94.

This version was created by David Churchman, the co-authors of Mowlem et al (2024), and Alisa Heinzman.