

A. Definition of aim of instrument

- Evaluative (detection of changes over time, typically for evaluation of treatments)
- Discriminative (detection of differences between persons)
- Predictive (prediction of future health outcomes, e.g. hospital admissions or death)
- Planning (planning of treatment, e.g. detection of particular areas of low self-efficacy to target education accordingly)

B. Definition of a priori considerations

- Definition of domains (yes or no, number of domains, definition of domains)
- Administration format (fully- or semi-structured questionnaire, self- or interviewer-administered)
- Maximum time required for completion (<10 minutes)
- Amenability to statistical analyses

C. Identification of items

- Common sources: Patients (person-to-person, focus groups), literature search (systematic or unsystematic), experts, adaptation of existing instruments, patients' relatives => Recommendation: use of systematic literature search and focus groups with patients that includes cognitive debriefing
- Properties of items are depending on aim of instrument:

	evaluative	discriminative	predictive	planning
Properties of items	detect change over time	distinguish between persons	distinction between patients with and without future event	identification of areas of low characteristic values to be targeted by treatment

D. Selection of items

- Common methods: data driven approach (e.g. use of statistical criteria such as factor analysis), patient approach (e.g. frequency of endorsement, comprehensibility of items), expert approach (e.g. estimation of relevance of items)

E. Validation of instrument

- Assessment of measurement properties should be congruent with aim of instrument:

	evaluative	discriminative	predictive	planning
Test-retest	yes	yes	yes	yes
Internal consistency	yes	yes	yes	yes
Validity	longitudinal validity	cross-sectional validity	calibration ¹	cross-sectional validity
Responsiveness	yes	-	-	-

¹ Calibration refers to the comparison of the proportion of events (e.g. hospital admission) predicted by the instrument and the proportion of events actually observed in the population. For further reading, please see Altman DG et al. British Medical Journal 2008, in press.