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# ` Quick Review of Model System Research

## A Standard Method for Determining the Minimal Clinically Important Difference for Rehabilitation Measures

### What is the study about?

### It is often difficult to convey to stakeholders of clinical research whether something being reported is clinically meaningful. One measure of increased interest and importance is the minimally clinically important difference (MCID) and is discussed in this article. The MCID is defined as the smallest improvement in a test or rating scale that a patient perceives as beneficial or meaningful. This article proposes a systematic method for determining the MCID that can be applied to many rehabilitation measures and demonestates this method with an example. Recommendations of how the MCID can be incorporated into rehabilitaton research are discussed.

### What did the study find?

### The authors propose a systematic approach for identifying the MCID by first assessing a range of distribution based indicators (based on how much variation there is in the scores) and then further evaluating them through anchor based procedures. Using a large, representative sample, distribution based indicators of change are computed from pre and post treatment scores including: 1 standard deviation (SD), 1 standard error of mean (SEM), ½ SD, 1.96 SEM, and the reliable change index. An anchor based measure such as the Global Impression of Change (GIC) is collected on a the same sample of subjects at the end of treatment assessing overall improvement relative to pre-treatment (e.g., Much Worse, Worse, No Change, Better, Much Better). The various distribution based indicators are assessed against the anchor GIC by comparing sensitivity, specificity, and Youden’s Index (YI) which combines sensitivity and specificity. The indicator with the highest YI is proposed as the MCID. A similar approach is discussed for identifing the Robust Clinically Impoarant Difference (RCID) for cases in which change is not only meaningful but impressive. The authors note that the MCID and RCID may vary across different populations, as well as with severity, chronicity, and demographic factors.

### Who participated in the study?

This article provided a commentary discussion so there were no participants involved.

### How can people use the results?

The authors suggest that adaptation of a systematic approach for obtaining the MCID in rehabilitation would facilitate communication and comparison of study results among rehabilitation researchers and providers. In clinical trials, comparing the percentage of individuals who obtain a MCID between treatment and control groups may be more informative than a comparison of mean changes alone. The MCID may also be useful in advancing personalized medicine by characterizing those who are most likely to benefit from a treatment. In clinical practice, the MCID can be used to identify if a participant is experiencing a meaningful change in status over time.

### Reference

Malec, J.F., & Ketchum, J. M. (2020). A standard method for determining the minimal clinically important differences for rehabilitation measures. *Archives of Physical Medicine and Rehabilitation*, doi: https://doi.org/10.1016/j.apmr.2019.12.008.

**Disclaimer**

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