Sample Size Calculations for collaboRATE from Existing Studies and Proposals

Existing studies have calculated required sample sizes for assessing the effects of shared decision making interventions on **collabo**RATE scores.

Pre/Post intervention study example:
Aarts et al. (2017) adopted the following approach in a pre/post intervention study.
- Preliminary testing established a score of 70% in usual care and a score of 86% with an SDM intervention;
- During the intervention period (score of 86%), a standard deviation of 19.1 was observed;
- With an alpha level of 0.05 and 80% power, 25 people were needed in each group.

Cluster randomized trial example:
Thompson et al. (2017) used the following approach in a cluster randomized trial (2 x 2 factorial design) comparing the effects of shared decision making interventions.
- Estimated a sample size of 728 participants in each of the four trial arms;
- Based on a previous study collecting **collabo**RATE responses via tablet computer at clinic exits, assumed a score of 66% in usual care;
- Determined a detectable increase of 16% (from 66% to 82%) based on a z-test comparing two proportions with clustered data, with an estimated intracluster correlation coefficient of 0.04, a two-sided significance level of 5%, and a power of 80%;
- Applied a Bonferroni correction for the three possible comparisons versus the usual care arm to retain a nominal family-wise significance level of 5%, thereby detecting a **collabo**RATE score increase of 18%.
- Data from tablet-based data collection (Heater Rd).

Example using collaboRATE's 0-4 rating scale:
- Used a continuous scoring approach (anchors 0 to 4), which yields a total score between 0 and 12;
- Assumed a common standard deviation of 2.01, 80% power, and an alpha of .05;
- Aimed to detect a 1-point increase in shared decision-making;
- Minimum required sample size to detect a 1-point increase in shared decision-making was 64 per subgroup.