Beyond sample size calculations

Challenge

Small biotech with no in-house statisticians needed sample size for their Phase 3 trial in *C. Difficile* Infection, accounting for uncertainty due to recent changes in standard of care, regulatory feedback, and financial constraints.

The Strategy

Expert statistician appointed to engage with their clinical team and CMO. Critical assessment of study assumptions – including primary endpoint, placebo response, dropout rates, and population of interest.

Outcome

- Multiple simulations run to assess impact of varying assumptions on total sample size
- Primary endpoint changed from Absolute risk to Relative risk, to account for uncertainty in placebo response (due to availability of new SOC treatments)
- Split trial approach for two populations, to preserve Orphan Status for recurrent population, and only proceed with Primary High Risk after an IA to prove viability
- Sample size re-estimation in PHR group at 70% in order to verify assumptions about this under-explored group.

Value to Client

1) Preserved ODD for recurrent population, removing need for a second Phase 3 trial

2) Incorporated PHR population for possible future label expansion, without jeopardizing primary timelines (recurrent population)

3) SSR to balance uncertainty in assumptions with size (and cost) of trial