MRN Newsletter

Why Parkinson's Trials Fail — and What the Evidence Says About Fixing Them

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ROI analysis attached

This article draws on a return on investment model we built against a typical Phase IIa Parkinson's disease trial with twice-weekly subcutaneous injections. The full analysis — including the numbers at each level of Home Trial Support adoption — is set out in the infographic attached to this newsletter. Readers who prefer the numbers first can turn there now.

Parkinson's disease is now the fastest-growing neurological disorder in the world. More than ten million people live with it globally, and that number is rising (Dorsey & Bloem, 2018). Yet for all the scientific progress being made — new targets, new mechanisms, new hope — the trials designed to test those advances are routinely struggling. Recruitment misses timelines. Patients drop out. Studies that looked good on paper run into serious operational trouble long before the data are clean.

This is not a scientific failure. It is an execution failure — and it is largely predictable. Understanding why Parkinson's trials are hard, and what the evidence tells us works, matters for everyone with a stake in getting new treatments to patients faster.

The Parkinson's Trial Problem

Parkinson's disease creates a set of trial participation barriers that compound each other in ways that other indications do not. Motor fluctuations — the unpredictable 'on/off' periods that characterise advancing disease — make travel to a site visit genuinely difficult. A patient who feels well enough to leave home at 9am may not be able to manage the journey by the time their appointment arrives. Fatigue, restricted mobility, and dependence on carers for transport add further friction. And because peak incidence sits in the 60–80 age range, the Parkinson's trial population is often older, more co-morbid, and less able to absorb the burden of frequent clinic attendance than participants in other disease areas.

Now add visit frequency. A conventional Phase IIa study with twice-weekly dosing visits asks a patient who is already managing a progressive neurological condition to travel to a specialist centre more than 100 times over a study period. For many patients — and particularly those furthest from a specialist neurology centre — that requirement eliminates participation entirely. It is not that they do not want to take part; it is that the trial's operational implementation makes it practically impossible.

The dropout data bear this out. Studies of Parkinson's disease trial participation put attrition rates at approximately 15%, with transport barriers cited as a primary driver (Rafferty et al., 2021). In a 200-patient Phase IIa study — the scale used in our ROI model — that translates to around 30 patients who never reach the primary endpoint: lost data, additional cost, and in many cases, a sponsor who missed their target events and faces a protocol amendment.

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What the Evidence Says

Over the past five years, a body of peer-reviewed evidence has emerged that directly addresses the Parkinson's trial problem. The findings are consistent and, for sponsors and operational teams, they are actionable.

The most striking recruitment data comes from a 2025 study published in Frontiers in Medicine (Rana et al., PMC12401929), which compared the operational performance of decentralised community-integrated research (DCIR) sites against traditional and hub-and-spoke models within a large Phase 3 neurodegenerative disease trial.

58%	higher randomisation rate at decentralised community-integrated research sites vs traditional sites in a Phase 3 neurodegenerative disease trial (Rana et al., Frontiers in Medicine, 2025)

Screening rates told a similar story: 20.6 screenings per site per month at DCIR sites versus 11.8 at traditional sites. Crucially, post-randomisation discontinuation was comparable across all models — the recruitment advantage did not come at the cost of retention quality. DCIR sites achieved more, without losing more.

On the question of whether home-based delivery is operationally feasible at scale, the TOPAZ trial (NCT03924414, Tanner et al., npj Parkinson's Disease, 2021) provides definitive evidence. TOPAZ is a fully home-based, double-blind, placebo-controlled randomised controlled trial in Parkinson's disease — administered by research nurses visiting participants at home across the United States, with no geographic restriction. By February 2025, TOPAZ had consented 5,046 participants and randomised 2,569 towards its target of 3,500. The trial's published description notes simply that its home-based design opens participation 'to almost anyone with parkinsonism' — unlimited by geography or disease severity.

When we modelled a typical 200-patient Phase IIa study with twice-weekly injections across 30 sites — the parameters used in our ROI analysis — applying home-based delivery to just 30% of the patient cohort eliminates 4,560 clinic visits in total. That is 4,560 journeys that patients with Parkinson's disease do not have to make, and 4,560 scheduling demands that sites do not have to absorb.

95%	of Parkinson's disease trial participants completed all remote visits in the STEADY-PD III sub-study — with a 72% reduction in visit time versus in-person attendance (Tarolli et al., 2020)

The STEADY-PD III remote sub-study (Tarolli et al., Journal of Parkinson's Disease, 2020) added important nuance. Forty participants completed remote video visits alongside conventional clinic visits over one year. Remote visits took a mean of 54 minutes versus 190 minutes for in-person visits — a 72% time saving. Patient-reported outcome measures showed excellent correlation

between remote and in-person collection (intraclass correlation coefficient 0.81–0.87). And 75% of participants said remote visits would make them more likely to join future clinical trials.

That final finding deserves emphasis. It means that the operational choice — home or remote delivery — directly influences the pool of patients who will consent to participate in the next study. Patient-friendly trial design is not just an ethical position; it is a commercial one.

On retention, the FOUND study (PMC5656448) reported near-zero lost-to-follow-up across a longitudinal remote programme with over 400 Parkinson's disease participants, with only 4% withdrawing consent over the full study period. For a condition where dropout in traditional trials is a persistent operational risk — particularly in longer-duration and higher-frequency-visit studies — that performance is significant.

What Good Execution Looks Like

The evidence is clear on the 'what.' The operational question is the 'how' — and that is where the practical detail matters.

Decentralised delivery in a Parkinson's study means, in most cases, a trained research nurse visiting a patient at home to conduct clinical assessments, administer study medication, collect samples, and support compliance. For a subcutaneous injection study, this is a direct analogue to what was done at scale in TOPAZ with intravenous therapy. The nurse is the site. The patient's home is the clinic. Geography ceases to be an eligibility criterion.

This model extends the eligible population beyond the catchment of any specialist neurology centre. It allows patients with advanced disease — who may have been excluded from traditional trials simply because they cannot travel — to participate. And it removes the scheduling burden that, compounded over months of twice-weekly visits, leads to dropout in conventional models.

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The practical impact of that model becomes clearest in the numbers, which we have set out in full in the attached infographic. In our model of a typical 200-patient Phase IIa Parkinson's disease study with a twice-weekly subcutaneous injection schedule — 30 sites across six countries, 12 months' recruitment followed by 12 months' therapy, with a baseline trial cost of £37.3 million — the impact of Home Trial Support (HTS) adoption is material at every level.

ROI model — Home Trial Support at three adoption levels

30% adoption (budget): 2.16 months faster to top-line data · 18% reduction in recruitment time · £1.93M saving (-5.2%) · 4,560 clinic visits eliminated · ~9 dropouts prevented 50% adoption: 3.60 months faster · £3.21M saving (-8.6%) 75% adoption: 5.40 months faster · £4.82M saving (-12.9%) Baseline trial cost (0% HTS): £37.3M across 30 sites, 6 countries, 200 patients, twice-weekly SC injections

Even at the conservative 30% adoption level — the figure used in our base-case estimate — the study completes 2.16 months earlier and the sponsor saves £1.93 million. Scale the adoption to half the patient population and those benefits rise sharply. The economics improve as adoption increases because batch investigational medicinal product (IMP) delivery removes the cold-chain

premium seen in single-visit models, and the fixed operational costs of home nursing are spread across a larger patient base.

It also requires that the operational partner has genuine experience in this space. Delivering subcutaneous study medication in a patient's home is not the same as organising a telemedicine call. It requires trained nursing staff, robust logistics, and documented experience managing the specific clinical and regulatory requirements of home-based research delivery in a complex patient population.

The Takeaway

Parkinson's disease trials are hard. That is not going to change. But the evidence now exists to show that the operational choices made at the design stage — site model, visit structure, home delivery capability — have a measurable, material impact on both recruitment speed and patient retention.

The sponsors who will get their Parkinson's programmes across the line fastest are those who treat operational design as seriously as they treat scientific design. The data support a different way of running these trials. The tools to execute it exist. The question is whether the trial design reflects that.

To make this concrete, we took a typical Phase IIa Parkinson's disease trial with a twice-weekly subcutaneous injection schedule and ran a full return on investment model against it — applying MRN's Home Trial Support model to the visit structure. The results are set out in the infographic attached to this newsletter.

References

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