

A working demonstration of agent-driven research

The clinical-trial pain map, computed from public data.

One person and a set of agents turned 454,031 registered trials into a structured, sourced map of where amendment, enrollment and startup pain concentrates by disease area and phase. Every figure carries its denominator. This is a sample of the method, not a claim about a market its readers already know.

What the map reads

- 01 **The tax concentrates at Phase II.** Phase I cells average 22 on the pain index; Phase II jumps to 64 and stays high through III and IV (59 and 55). Eligibility rewrites, a conservative proxy for amendments, run from 7% to 64% across cells.
- 02 **Pain and volume are different axes.** A few small cells score highest on pain alone (Hematology Phase II, 664 trials), while the largest pain-and-volume cell is oncology Phase II at 91.8 of 100 across 9,542 industry trials. At the industry average of \$450k direct cost per amendment, delay uncounted, on the order of \$2.5B of amendment cost sits in that single cell.
- 03 **Exposure and concentration are different lenses.** Novartis leads by exposure (1,501 US trials) and also tops concentration; below it the two orders diverge, Bayer 67, Hoffmann-La Roche 65, Sanofi 62. Volume leaders carry the most total pain; concentrated sponsors feel the most per trial.

The five hardest cells

#	Cell	Pain	Industry trials
1	Hematology, Phase II	96	664
2	Rare & Genetic, Phase II	95	1,045
3	Rare & Genetic, Phase IV	94	145
4	Hematology, Phase IV	92	206
5	Oncology, Phase II	92	9,542

Pain and size are not the same thing: some of the hardest cells are small. The amendment figure is a disclosed proxy from sampled registry version histories. CRO involvement is not recorded in public fields and is not reported.