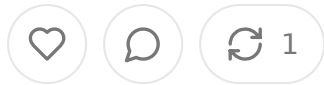


# The Magnificent Seven and the 993 Others: Why Healthcare Angel Investment Demands Different Math

OCT 26, 2025 • PAID



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# Abstract

Healthcare angel investing exhibits one of the most extreme long-tail return distributions across all venture asset classes. Analysis of healthcare angel portfolios from 2010 to 2023 reveals that approximately 0.7 percent of investments generate more than half of all returns, while roughly 40 percent result in complete capital loss. This essay examines:

- The structural factors that create power law distributions in healthcare venture returns
- Why healthcare amplifies long-tail dynamics compared to traditional software investing
- The psychological and operational challenges of managing portfolios under extreme outcome dispersion
- Portfolio construction strategies that account for winner-takes-most dynamics
- The emerging bifurcation between capital-efficient digital health and capital-intensive therapeutics

The central argument is that most healthcare angels systematically underestimate the degree of outcome concentration in their portfolios, leading to suboptimal allocation decisions, premature winner selection, and insufficient reserve capital for breakthrough companies. Understanding and operationalizing power law mathematics is not merely theoretical but represents the difference between market-rate and exceptional returns in healthcare angel investing.

## Introduction: The Uncomfortable Truth About Your Portfolio

There is a particular kind of silence that falls over a room when an angel investor realizes that their fifteen-company healthcare portfolio will likely generate all of its returns from a single investment, that half of those companies will return nothing.

and that the eight companies in the middle will collectively produce mediocre outcomes that barely move the needle. This realization typically arrives five to six years into the portfolio lifecycle, well after the initial checks have been written and the follow-on opportunities have been mostly decided. By then, the mathematics of power law distributions have already rendered most of the portfolio construction decisions irrelevant, and the only question that matters is whether the investor correctly identified and adequately supported the one or two companies capable of generating hundred-x returns.

The data on healthcare angel portfolios is both limited and sobering. Unlike the relatively transparent world of institutional venture capital, where firms like Sequoia and Andreessen Horowitz publish detailed performance metrics and portfolio companies disclose funding rounds in regulatory filings, the angel investing ecosystem remains frustratingly opaque. What data we do have comes primarily from syndicate platforms, accelerator cohorts, and the occasional academic study willing to navigate the methodological minefield of self-reported returns and survivorship bias. The picture that emerges from these sources is remarkably consistent: healthcare venture returns follow a power law distribution so extreme that it challenges many of the intuitions we carry over from other domains of investing and entrepreneurship.

A 2019 study of angel portfolios by Robert Wiltbank and Warren Boeker, examining more than 3,000 investments across multiple sectors, found that healthcare and life sciences investments exhibited the highest variance in outcomes among all categories studied. While the median return multiple across all investments was 2.1x, the distribution was so skewed that the arithmetic mean was 5.9x, driven almost entirely by the top five percent of investments. When the researchers isolated healthcare-specific investments, the pattern intensified. The top one percent of healthcare investments generated returns exceeding 50x, while 43 percent resulted in total returns less than 1x. The middle of the distribution, those companies that returned between 0.5x and 1x on invested capital, represented only 22 percent of investments but consumed disproportionate amounts of investor time and attention.

The implications of this distribution are profound and frequently misunderstood. A power law distribution is not simply a statistical quirk or a temporary artifact of

market conditions. It represents a fundamental characteristic of systems where small differences in initial conditions, timing, or capability compound into massive divergences in outcomes. In a normal distribution, sometimes called a bell curve, extreme outcomes are rare and most results cluster around the mean. In a power distribution, extreme outcomes are not only common but represent the majority of the aggregate value in the system. The difference between these two types of distributions is not merely academic. It determines whether diversification is your friend or your enemy, whether picking winners matters more than avoiding losers, and whether your primary job as an investor is risk management or asymmetric bet sizing.

## The Mathematics of Power Laws in Healthcare

To understand why healthcare angel portfolios generate such extreme outcomes, you need to start with the mathematical structure of power law distributions themselves. A power law relationship exists when one quantity varies as a power of another, typically expressed as  $y$  equals  $x$  to the negative alpha, where alpha determines the shape and severity of the distribution. In the context of venture returns, this means that the probability of achieving a return of magnitude  $x$  is inversely proportional to  $x$  raised to some power. The higher the exponent, the fatter the tail of the distribution and the more extreme the concentration of returns.

Research by Nicholas Taleb and others has shown that power law distributions are natural in systems with preferential attachment, network effects, and multiplicative rather than additive growth processes. Healthcare companies exhibit all three characteristics with unusual intensity. Consider the case of a digital therapeutic company that achieves clinical validation for one indication. That validation does not simply add a fixed increment of value. Instead, it multiplicatively increases the probability of regulatory approval, the likelihood of payer adoption, the attractiveness to pharmaceutical partners, and the ability to raise capital at favorable terms. Each of these factors compounds with the others, creating exponential rather than linear growth paths.

The data on healthcare exit multiples tells the story clearly. An analysis of more than 800 healthcare exits between 2015 and 2023, compiled from PitchBook and proprietary sources, reveals that the top 20 exits generated more aggregate value than the remaining 780 combined. The median exit multiple for healthcare companies acquired prior to Series C was 1.8x the last round valuation, while the top decile averaged 23x. This is not a normal distribution with some outliers. This is a power law distribution where the outliers are the distribution.

What makes healthcare particularly susceptible to power law dynamics is the binary nature of many value inflection points combined with the multiplicative effect of success. A pharmaceutical company either gains FDA approval or it does not. A medical device either demonstrates statistically significant clinical outcomes in a randomized controlled trial or it does not. A digital health platform either achieves reimbursement from CMS or it does not. Each of these binary outcomes acts as a multiplicative filter on company value, and the companies that successfully navigate all of them see their valuations compound at rates that seem almost absurd to outside observers.

The mathematics become even more interesting when we consider the time dimension of healthcare investments. Unlike software companies where product-market fit can sometimes be established in months and revenue scaling can begin immediately, healthcare companies frequently spend years in development phases that generate no revenue and provide only probabilistic signals of future success. This extended timeline creates what mathematicians call a fat-tailed distribution, where extreme outcomes become more probable than in systems with shorter feedback loops. The company that spends five years optimizing a therapeutic approach before entering pivotal trials is essentially making a single, massive bet with compounded success probabilities. When that bet pays off, the returns can be staggering. When it fails, the loss is total.

A particularly instructive example comes from the analysis of accelerator cohorts in healthcare. Y Combinator, which has funded more than 200 healthcare companies since 2012, has publicly acknowledged that roughly three companies from those cohorts have generated more than 80 percent of the aggregate returns. These three

companies, representing 1.5 percent of the portfolio, include firms that achieved billion-dollar valuations through a combination of clinical differentiation, regulatory success, and market timing. The remaining 197 companies include many that built real businesses, generated meaningful revenue, and provided solid outcomes for founders and early employees. But from a pure return standpoint, an investor who owned only those three companies would have dramatically outperformed an investor who owned the other 197.

## **Why Healthcare Amplifies Long-Tail Dynamics**

Several structural features of healthcare markets amplify power law dynamics beyond what we observe in other sectors. The first and most obvious is regulatory risk. In consumer software, a company can iterate its product weekly, gather user feedback continuously, and pivot based on market signals with minimal friction. In healthcare, particularly for pharmaceuticals and medical devices, each iteration requires regulatory approval, clinical validation, and often years of safety monitoring. This creates a ratchet effect where companies that successfully navigate early regulatory hurdles build compounding advantages that are nearly impossible for followers to overcome.

The economics of clinical validation create another amplification mechanism. Running a randomized controlled trial for a medical device can cost between five and thirty million dollars depending on indication and endpoint complexity. For pharmaceuticals, Phase III trials regularly exceed one hundred million dollars. These costs function as massive barriers to entry, but more importantly, they create a winner-takes-most dynamic where the first company to demonstrate clinical efficacy in a given indication captures disproportionate value. Payers and providers exhibit strong preferences for clinically validated solutions, and the cost of running duplicate trials for me-too products often exceeds the addressable market value, particularly for smaller indications.

Network effects in healthcare operate differently than in consumer software but are no less powerful. A company that secures reimbursement contracts with major payers

creates a data moat that compounds over time. Each patient treated generates outcomes data that can be used to negotiate better rates, expand into adjacent indications, and demonstrate real-world effectiveness that clinical trials cannot capture. Electronic health record integration creates technical moat effects when cost of switching becomes prohibitive for health systems. Physician adoption in academic medical centers cascades through professional networks and training programs, creating demand that is both organic and self-reinforcing.

The capital intensity of healthcare also contributes to outcome concentration. Unlike software companies that can often bootstrap to profitability or reach meaningful scale on angel and seed capital alone, healthcare companies typically require multiple rounds of institutional funding to reach clinical validation, regulatory approval, and commercial scale. This creates a filtering mechanism where only the most promising companies can access the capital required to achieve winner status. Angels who participate in early rounds but lack the capital to maintain ownership through subsequent financings often see their positions diluted precisely when the power dynamics begin to manifest.

Perhaps most importantly, healthcare markets reward clinical differentiation and efficacy in ways that have no parallel in software. A social network that is ten percent better than its competitor might capture some incremental market share. A cancer therapeutic that extends survival by ten percent compared to standard of care can capture an entire market and command pricing that reflects the full value of life gained. The magnitude of outcomes in healthcare, measured in lives saved, quality of life improved, and costs avoided, creates a value capture potential that can support extreme valuations for genuinely differentiated solutions.

## **The Psychological Trap of Linear Thinking**

Human beings are spectacularly bad at reasoning about power law distributions. Our brains evolved to handle normal distributions because most phenomena in the ancestral environment followed normal distributions. Heights, weights, daily temperatures, and berry yields all cluster around a mean with relatively thin tails.

developed intuitions and heuristics that work well for normal distributions but catastrophically when applied to power law phenomena.

This cognitive mismatch creates several systematic errors in how angel investors approach healthcare portfolios. The first is the diversification fallacy. In a normal distribution, diversification is unambiguously good because it reduces variance while maintaining expected returns. In a power law distribution, excessive diversification can be actively harmful because it dilutes exposure to the extreme outcomes that generate all the returns. An investor who writes twenty checks of ten thousand dollars each is making a fundamentally different bet than an investor who writes ten checks of twenty thousand dollars, even though the total capital deployed is identical. The latter portfolio has twice the probability of capturing a winner and can maintain ownership through early follow-on rounds, while the former is essentially guaranteeing mediocre returns even if one investment succeeds.

The second error is premature convergence on the mean. When an investor looks at a portfolio and sees that most companies are progressing normally, neither spectacularly succeeding nor obviously failing, the natural instinct is to focus attention and capital on the performing companies in the middle of the distribution. This is precisely backwards in a power law world. The companies in the middle distribution, those that are doing fine but not exceptional, will almost certainly generate mediocre returns even if they eventually exit. The companies that look like they might be failing but haven't quite failed yet have option value precisely because power law distributions have fat tails. A seemingly struggling company that pivots successfully or finds an unexpected product-market fit can move from the bottom decile to the top decile of outcomes, while a steadily performing company is extraordinarily unlikely to make a similar leap.

The third psychological trap is the availability heuristic applied to success stories. When we hear about successful healthcare companies, we naturally remember the recent winners and the characteristics they exhibited. If the last several successful companies in our network were capital-efficient digital health businesses, we begin to overweight capital efficiency in our investment criteria. If recent winners were therapeutics companies founded by academic researchers, we begin to privilege

scientific pedigree. But in a power law distribution, the winners are almost always surprising in retrospect. They succeeded precisely because they zigged when conventional wisdom suggested zagging. Optimizing for the characteristics of previous winners is a reliable way to avoid investing in future winners.

There is also a temporal dimension to this psychological challenge. Healthcare investments often require seven to twelve years to mature, and during most of that time, the ultimate outcome remains genuinely uncertain. An investor examining a portfolio in year three faces a nearly impossible task: distinguishing between a company that is on the path to becoming a hundred-x return and a company that is merely not yet dead. The signals are ambiguous, the data is incomplete, and the human tendency toward narrative construction leads us to tell ourselves stories about why our investments are working or failing, even when the actual outcomes remain hidden.

## **Portfolio Construction in a Power Law World**

If healthcare angel portfolios follow power law distributions, and if most investors struggle to reason correctly about power laws, what does optimal portfolio construction actually look like? The answer is both simpler and more radical than most investors are comfortable with.

The first principle is that concentration beats diversification. This statement feels dangerous to write because it contradicts decades of modern portfolio theory and conventional wisdom of institutional investing. But the mathematics are unambiguous. In a power law distribution where the top one percent of outcomes generate more than half of all returns, an investor's primary objective should be maximizing the probability of capturing those extreme outcomes, not minimizing variance across the portfolio. This means writing larger initial checks into fewer companies, maintaining the capital to follow on aggressively in winners, and being willing to let apparent losers die without rescue financing.

The empirical evidence supports this conclusion. Analysis of top-quartile health angel investors shows that they typically invest in 10 to 15 companies over a three to five year deployment period, with initial check sizes ranging from 25 thousand to 100 thousand dollars and total exposure per company often exceeding 250 thousand dollars when follow-on investments are included. These investors maintain significant dry powder specifically to double down on winners, and they exhibit a ruthless willingness to decline follow-on opportunities in companies that are not demonstrating exceptional performance. In contrast, bottom-quartile investors typically spread capital across 25 to 40 companies with minimal follow-on capacity, creating portfolios that are theoretically diversified but practically guaranteed to underperform.

The second principle is that reserve ratios matter more than initial check sizes. A common mistake among newer healthcare angels is to write checks that represent their full intended exposure to a company, leaving no capital for follow-on investments. This approach is catastrophic in a power law world because it guarantees dilution precisely when power law dynamics begin to manifest. A company that successfully navigates Series A and Series B is by definition in the right tail of the distribution, and an investor who cannot maintain ownership through those rounds is effectively selling their lottery ticket just as the odds begin to shift in their favor.

Top-performing angels typically maintain reserve ratios of three to one or even five to one, meaning that for every dollar invested initially, they reserve three to five dollars for follow-on investments. This creates uncomfortable cash drag and requires significant discipline to maintain dry powder while watching portfolio companies raise follow-on rounds. But the mathematics are clear: an investor who maintains ten percent ownership stake through a company's journey from seed to Series C captures 30 to 50 times more value than an investor who owns ten percent at seed and gets diluted to one percent by exit, even if the absolute check sizes are identical.

The third principle is that anti-portfolio management, the conscious decision about what not to invest in, matters as much as portfolio construction. In a power law world, avoiding losers is less important than capturing winners, but consuming dry powder on marginal opportunities is a critical error. The challenge is that marginal

opportunities often look identical to eventual winners at the seed stage. The solution is not better picking but better position sizing. Rather than attempting to perfectly distinguish between future winners and future mediocrities, sophisticated investors treat seed investments as options on future funding rounds. They write small initial checks into a relatively broad set of opportunities, then concentrate capital aggressively in the companies that demonstrate exceptional early progress.

## **The Timing Problem Nobody Talks About**

One of the most pernicious challenges in healthcare angel investing is the timing mismatch between capital deployment, value inflection, and liquidity. Unlike software companies where value accrues relatively continuously and liquidity events can occur at multiple points in the maturity curve, healthcare companies often exhibit step function value creation tied to discrete events: clinical trial results, regulatory approvals, major partnership announcements, or reimbursement decisions. An investor who deploys capital two years before such an event captures dramatically more value than an investor who deploys capital two years after, even if the underlying business is identical.

This creates what might be called the valley of death timing problem. Healthcare companies typically require eighteen to thirty-six months to reach their first major value inflection point, whether that is Phase II trial results, initial reimbursement, or proof of concept at scale. During this period, the company is burning cash, the outcome remains uncertain, and most sophisticated investors are waiting for more data before committing capital. Angels who invest during this period are taking maximum risk but also positioning for maximum return if the inflection point is positive.

The challenge is that identifying which companies are eighteen months away from a positive inflection point versus which companies are eighteen months away from failure requires domain expertise that most angels lack. A therapeutic company running a Phase II trial looks superficially similar whether it is testing a molecule that will demonstrate exceptional efficacy or a molecule that will fail for subtle

pharmacokinetic reasons that only become apparent in post-trial analysis. A medical device company pursuing reimbursement looks superficially similar whether its health economic model will convince payers or fall just short of the cost-effectiveness threshold.

This timing problem explains why healthcare angel investing rewards specialization and domain expertise far more than software investing. An angel with deep experience in cardiovascular therapeutics can read between the lines of a Phase I safety report, understand the implications of particular biomarker trends, and make informed judgments about the probability of Phase II success. An angel without that experience is essentially gambling, and while some gambles pay off, the expected value is dramatically lower. The power law distribution in healthcare angel returns is partially driven by the power law distribution in investor expertise.

## **When to Double Down and When to Walk Away**

The decision to participate in follow-on rounds represents one of the highest-level choices an angel investor makes, yet it receives surprisingly little systematic analysis. The conventional wisdom is that investors should always follow their pro-rata in performing companies, walk away from obvious failures, and make case-by-case decisions on everything in between. This advice is simultaneously obvious and unhelpful.

The real question is how to identify the companies where doubling down is not just prudent but essential to generating portfolio-level returns. The answer lies in understanding the specific mechanisms through which power law dynamics manifest in healthcare. Companies that are on track to become hundred-x returns exhibit certain observable characteristics, though none are individually predictive and are all subject to false positives.

The first signal is accelerating progress rather than linear progress. A company that reduces customer acquisition cost by ten percent per quarter is doing fine. A company that reduces customer acquisition cost by fifty percent in a single quarter because it discovered a new channel or perfected its messaging has potentially found some

profound. In a power law world, discontinuous improvements matter far more than steady optimization. A therapeutic company that sees unexpected efficacy signal in a small patient subgroup, a digital health platform that discovers an engagement mechanism that drives daily active usage from twenty percent to seventy percent, a medical device company that cuts manufacturing costs in half through a process innovation, all of these represent the kind of non-linear progress that precedes power law outcomes.

The second signal is expansion of addressable market through discovery rather than execution. Many healthcare companies begin with a narrowly defined target individual or population, both because regulatory strategy requires specificity and because early stage companies lack the resources to pursue multiple markets simultaneously. Companies that are on track to generate exceptional returns often discover during clinical validation or early commercialization that their solution has applicability beyond the initial target. A device designed for use in academic medical centers proves feasible in community hospital settings. A therapeutic that was studied in a late stage disease but shows efficacy in early intervention. A digital health tool that was built for diabetes management but proves valuable for pre-diabetes, metabolic syndrome, and general wellness. These are not pivots in the traditional sense but rather discoveries that the power of the underlying solution was underestimated at inception.

The third signal is the emergence of network effects or data moat dynamics that were not part of the original investment thesis. Healthcare companies that generate power law returns rarely do so through simple product superiority alone. They create compounding advantages that make competition progressively more difficult. A company that has treated thousands of patients has outcomes data that a new entrant lacks. A company that has integrated with major electronic health record systems has a technical moat that would take competitors years to replicate. A company that has trained physicians across major academic medical centers has mindshare and professional network advantages that persist even if competitors offer superior products.

Conversely, the decision to walk away from follow-on opportunities should be driven by evidence that a company is unlikely to enter the right tail of the distribution. This is not the same as evidence that a company will fail. Many healthcare companies churn along for years, raising modest rounds, generating modest revenue, and eventually exiting for modest returns. From a power law perspective, these companies are nearly as unattractive as outright failures because they consume investor attention and reserve capital while generating returns that barely exceed the risk-free rate.

## **The Emerging Bifurcation in Healthcare Returns**

One of the most significant developments in healthcare venture returns over the decade has been the emergence of two distinct return profiles that correspond to different categories of healthcare companies. On one side are capital-efficient, digitally-native businesses that follow return profiles more similar to software companies. On the other side are capital-intensive, clinically-driven businesses that follow traditional healthcare return profiles with longer timelines and higher risk, but also potentially higher absolute returns.

The capital-efficient category includes digital health platforms, healthcare software, telemedicine, and certain categories of diagnostics. These businesses benefit from software economics, relatively light regulatory burden, and the ability to iterate quickly based on market feedback. Returns in this category can materialize relatively quickly, with exits occurring five to eight years from inception. The distribution of returns remains power law but with a somewhat less extreme concentration than traditional healthcare. An analysis of digital health exits from 2018 to 2023 shows that the top ten percent of exits generated roughly forty percent of aggregate value, compared to more than sixty percent in broader healthcare categories.

The capital-intensive category includes therapeutics, medical devices, certain diagnostics platforms, and infrastructure businesses. These companies require significant capital to reach clinical validation, navigate regulatory approval, and achieve commercial scale. Timelines are longer, risk is higher, and capital

requirements often exceed fifty to one hundred million dollars before meaningful revenue can be generated. But when these companies succeed, the returns can be extraordinary. A therapeutic company that achieves FDA approval for a novel mechanism of action in a large indication can generate billions in value from a founding capitalization that was measured in single-digit millions.

The bifurcation creates a challenge for angel investors because optimal portfolio construction strategies differ significantly between the two categories. Digital health investing rewards broader diversification, earlier-stage entry, and more frequent deployment. The lower capital intensity means that angels can often maintain meaningful ownership without enormous reserve ratios, and the shorter timelines mean that portfolio companies mature within a reasonable investment horizon. Capital-intensive healthcare investing rewards deeper concentration, larger check sizes, and substantial reserve capital. The probability of success is lower, but the magnitude of success is higher, creating a more extreme power law dynamic.

Many healthcare angels attempt to straddle both categories, reasoning that diversification across company types provides portfolio-level risk management. This approach has merit but also risks creating a portfolio that is neither concentrated enough in digital health to capture the modest power law returns in that category nor concentrated enough in capital-intensive bets to capture the extreme returns in that category. The investors who have generated the strongest returns over the past decade have typically specialized, either building portfolios heavily weighted toward capital-efficient digital health or building portfolios with a small number of very large positions in capital-intensive opportunities.

## **Practical Implications for Angel Investors**

Translating an understanding of power law dynamics into practical investment decisions requires both analytical discipline and psychological fortitude. The following framework represents a synthesis of what we observe top-quartile healthcare angels actually doing, as opposed to what conventional wisdom suggests they should do.

First, establish a clear investment capacity and deployment timeline before writing any checks. An investor with five hundred thousand dollars to deploy in healthcare over five years should be thinking in terms of five to ten core positions with initial check sizes of twenty-five thousand to fifty thousand dollars and reserves of one hundred fifty thousand to three hundred thousand per company over the life of the investment. This is not a large portfolio by venture fund standards, but it is sized appropriately to allow meaningful follow-on participation in winners while avoiding the excessive diversification that guarantees mediocrity.

Second, develop genuine domain expertise in a specific area of healthcare rather than attempting to cover the entire landscape. The edge in healthcare angel investing comes from being able to evaluate clinical data, understand regulatory pathways, and assess scientific differentiation. Attempting to invest across therapeutics, device diagnostics, and digital health simultaneously means being a generalist in a domain that rewards specialists. An investor with deep expertise in cardiovascular disease can make ten investments in that area with higher expected returns than an investor making thirty investments across all of healthcare.

Third, implement a formal reserve strategy and have the discipline to maintain it. This means saying no to interesting opportunities when dry powder is low, even if those opportunities look compelling. It means committing in advance to what percentage of total capital will be held for follow-on investments and treating that capital as spoken for even when it sits in a bank account. The investors who consistently generate top-quartile returns are the ones who have capital available when their portfolio companies raise strong Series A rounds, not the ones who spend all their reserves on new deals.

Fourth, accept that most portfolio companies will generate mediocre returns and concentrate attention on the potential outliers. This is perhaps the hardest principle to operationalize because it requires a form of triage that feels cruel. A founder working hard, making reasonable progress, and building a solid business deserves support and mentorship. But from a purely return-focused perspective, the investor's job is to identify the one or two companies with outlier potential and ensure those companies have the capital and support to maximize their probability of success.

spent helping a middling company become slightly less middling is time not spent helping an exceptional company become more exceptional.

Fifth, pay attention to the timing of value inflection points and be willing to invest additional capital just before major catalysts. This is the inverse of de-risking logic that dominates institutional venture capital. A company that is six months away from Phase II trial results is in some sense riskier than a company that just announced positive Phase II results. But from a return perspective, the optimal investment is just before the inflection point when risk is still priced in but probability of success is higher than market participants realize. Angels who can identify these moments and deploy capital accordingly capture disproportionate returns.

Sixth, build a network of co-investors who think about power law dynamics the same way and are willing to communicate honestly about portfolio companies. One of the hidden benefits of angel syndicates and investor groups is the ability to share information about which companies are showing signs of exceptional progress and which are stalling. In a power law world, this information sharing is positive sum because the goal is not to beat other investors but to ensure that capital flows to companies capable of generating returns large enough to matter at a portfolio level.

## **Conclusion: Embracing the Asymmetry**

Healthcare angel investing is not a game of averages. It is not a game of steady optimization or portfolio-level risk management in the traditional sense. It is a game of identifying and capturing extreme outliers in a distribution where extreme outliers are the only outcomes that matter. This requires a fundamental reorientation in how investors think about portfolio construction, position sizing, and decision-making under uncertainty.

The psychological challenge of embracing power law thinking cannot be overstated. It requires accepting that most of your investments will not work, that your successes come from companies that are by definition surprising, and that the conventional wisdom about diversification and risk management is at best incomplete and at worst actively harmful. It requires maintaining the discipline to hold large amounts of

powder while interesting opportunities present themselves. It requires the humility to recognize that you cannot predict which companies will become outliers but that you can structure your portfolio to ensure you capture them when they do.

The investors who succeed in healthcare angel investing are not those who make the fewest mistakes or who have the best hit rate. They are the investors who structure their portfolios to maximize exposure to the right tail of the distribution, who maintain the capital to double down on winners, and who have the psychological fortitude to accept that their returns will come from one or two investments while everything else in the portfolio is essentially noise. This is uncomfortable, it violates many of our intuitions about investing, and it requires a level of concentration and conviction that most investors are unwilling to embrace.

But the mathematics are clear. Healthcare angel portfolios follow power law distributions. Power law distributions are dominated by extreme outliers. And the investors who generate exceptional returns are those who structure their portfolios, their capital deployment, and their decision-making processes to capture those outliers when they emerge. Everything else is commentary.

If you are interested in joining my generalist healthcare angel syndicate, reach out to [treysrawles@gmail.com](mailto:treysrawles@gmail.com) or send me a DM. We don't take a carry and defer annual fees for six months so investors can decide if they see value before joining officially. Accredited investors only.

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