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# The Supply of Clinical Trial Sites

## Openings, Closings, and Longevity

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# EXECUTIVE SUMMARY

Clinical trials utilize at least one and often several physical locations or sites. Participants typically need to travel to one of these sites for part of the trial. Despite the importance of sites to clinical trials, little is known about their overall life cycle and supply at a macro level.

Using all US-based sites involved in phase 1–4 pharmaceutical clinical trials beginning in 2017–2024, we document how frequently new sites open (are born), how often they close (die), and how long they remain in operation (site longevity). We also document the relationships between site longevity and the features of the clinical trials hosted at the sites and the features of the counties in which the sites are located.

Each year, many sites are born (host their first observed clinical trial), and many sites die (host their last observed clinical trial). The net of these births and deaths determines whether the overall supply of sites is growing (more births than deaths) or shrinking (more deaths than births). Between 45 and 60 percent (depending on how the data are constructed) of sites that are born in a given year do not host any new clinical trials after that year (die that same year). Sites that survive past the first year have considerably higher survival rates for subsequent years.

The strongest predictor of site longevity among the correlates studied was the number of clinical trials hosted at the site in the first year. Sites that host multiple clinical trials have a noticeably higher survival rate than sites that host only one study, and the more studies a site hosts, the higher its probability of surviving. Other features, such as the study funder, were also correlated with survival.

Features of the county had a weak relationship with site survival, which suggests that characteristics of the hosted studies and not the site's specific location are more relevant for site longevity.

# BACKGROUND

Clinical trials can be run across one or multiple sites. Clinical trial participants typically must travel to one of the sites for at least part of the trial. Proximity to a clinical trial site is not evenly distributed geographically in the United States, which can lead to disparities in access for potential participants (Friedson et al. 2024).

Site operation is a considerable part of a clinical trial budget: site-specific costs are estimated to be around 13 percent of the total cost of running a clinical trial, with a portion of those costs being fixed start-up costs (Sertkaya et al. 2016). Site-specific factors also influence the execution of a clinical trial. For example, sites with faster ethics approval processes are more likely to hit enrollment goals (Levett et al. 2014).

Despite the importance of sites to clinical trials, little is known about their overall life cycle and supply at a macro level. Research on the life cycle of sites focuses on operational questions such as “How is a site successfully started?” but does not capture information such as “How many sites start up each year?” or “How many sites continue to attract new research for multiple years?” (Ditts and Sandler 2006, Kearney et al. 2014). The answers to these questions are fundamental to identifying strategies to expand access to clinical trials sustainably and to bring them closer to communities.

Using all US-based sites involved in pharmaceutical clinical trials (phases 1–4) beginning in 2017–2024, we document how frequently new sites open (are born), how often they close (die), and how long they remain in operation (site longevity). Birth, death, and longevity characteristics have long been collected for businesses in the United States, and we compare the life cycles of new sites to those of new businesses. We also document how site birth, death, and longevity vary based on the characteristics of the site and of the site’s hosted studies.

# DATA

Our primary source of information is the Clinical Trial Transformation Initiative's Aggregate Analysis of ClinicalTrials.gov (AACT) database. The AACT data contain all information that is publicly reported on ClinicalTrials.gov (Tasneem et al. 2012). We collect information on all pharmaceutical clinical trials in phases 1–4 with a start date between January 1, 2017, and October 17, 2024. This time frame represents the universe of clinical trials for pharmaceuticals aimed at the US market, because under the 2017 Final Rule for the Food and Drug Administration Modernization Act, any clinical study for a drug to be considered for eventual US Food and Drug Administration (FDA) approval must be registered on ClinicalTrials.gov. During this time frame, 24,950 clinical trials were registered.

Each registered clinical trial includes a list of attached sites. Each site is associated with a site name and city, state, county, zip code, and geographical coordinates of latitude and longitude. We define a site as a unique site name and geographic information (longitude, latitude, and zip code) pair.

This definition treats different locations run by the same overarching entity as unique sites. So, two university labs with different coordinates and zip codes would be captured as unique sites even if registered under the same university name. That said, this definition possibly overstates the number of sites, because renaming the same site without making any other changes would result in recording two unique sites in the data.

## Alternative Data Construction

To address this possible overcounting, we verify findings using both an alternative definition of site and an alternative data collection process via the Global Action Alliance's (GAA) WISE-R platform. WISE-R is an advanced AI capability specifically designed for the life sciences industry while remaining completely data agnostic. The platform integrates and analyzes cleaned and validated data across the entire life sciences spectrum—from early research and patient data to clinical trial information, regulatory filings, business intelligence, market data, and commercial partnerships—providing a holistic view that enables more accurate verification and validation of our findings. This multifaceted approach ensures that our site counting methodology is both robust and reliable, eliminating biases that could arise from single-source data collection processes while leveraging the platform's AI-driven insights to identify discrepancies and confirm the accuracy of our analytical results.

WISE-R collected all pharmaceutical clinical trials with at least one US location listed as the site from 2017 through 2024. It then processed all site locations using a geospatial application programming interface (API) to identify the latitude and longitude of the sites. In cases with slight differences in address but the same site name, WISE-R considered these to be the same site.

This second data source does not count places with the same address but different names as separate sites; the WISE-R constructed data avoid our overcounting problem. However, because multiple sites may be co-located (such as one trial run in a hospital intensive care unit and another run in the same hospital's outpatient clinic), the WISE-R constructed data provide instead a likely undercount of the number of sites.

Because one data construction is a likely overcount and the other is a likely undercount, the true values fall between the results from the two datasets. Therefore, when both data sources have similar findings, we have a great deal of confidence in the results.

## Other Data Sources

We draw information from several additional data sources. The first is the American Community Survey (ACS) five-year estimates, which provide county-level characteristics (US Census Bureau 2024). These characteristics are assigned to sites based on the county in which the relevant zip code primarily resides. Specifically, the county characteristics of interest are total population, poverty rate, median household income, and percentage of the population with some form of health insurance. We then use the county urban-rural classification scheme from the National Center for Health Statistics to assign levels of urbanization to each county.

## Variables of Interest

The primary analytic unit in our data is a site, which is identified via a site name—geographic information pair (or just a set of coordinates for the WISE-R constructed data). For each year, we count the number of clinical trials listed at that site with a start date during that year. Using this information, we can observe when a site has a trial start for the first time in our data, which we refer to as the site being “born.” We can also observe when a site has no further new trials starting for the rest of the dataset, which we refer to as the site “dying.” The interval between birth and death of a site is the site’s “longevity.”

Based on this construction, any site that existed before 2017 appears as being born in 2017, and any site that operates after 2024 appears as dying in 2024. As such, we focus on site births post-2017, particularly on the 2018 birth cohort, because this group of sites has the longest time frame to observe. We also view a site that dies in 2024 as indistinguishable from that site continuing operations post-2024.

A site may have one or more clinical trials that begin each year. We count the total number of trials started at each site in each year. We also construct variables for whether a site hosted at least one clinical trial in a given phase or with a given funder. Finally, we assign each site characteristics of the county in which the site is located: population, poverty rate, median household income, and percentage of the population with some form of health insurance.

# BASIC CHARACTERISTICS OF THE SUPPLY AND LONGEVITY OF CLINICAL TRIAL SITES

To begin, we compare the longevity of clinical trial sites to the longevity of a widely studied and historically better-documented set of entities: businesses. Figure 1 follows the 2018 cohort of new sites (we do not use the 2017 cohort because that year includes incumbents), as well as the 2018 cohort of new businesses reported by the US Bureau of Labor Statistics (BLS)'s 2024 Business Employment Dynamics. Approximately 60 percent of the sites in this cohort are observed in one and only one year. Of those that survive the first year, the survival rate greatly increases.

This pattern is similar to, but more pronounced than, patterns found for business openings and closings in the US. Approximately 20 percent of businesses in the 2018 cohort are seen in only one year.

**Figure 1. Survival of New Clinical Trial Sites and New Businesses**



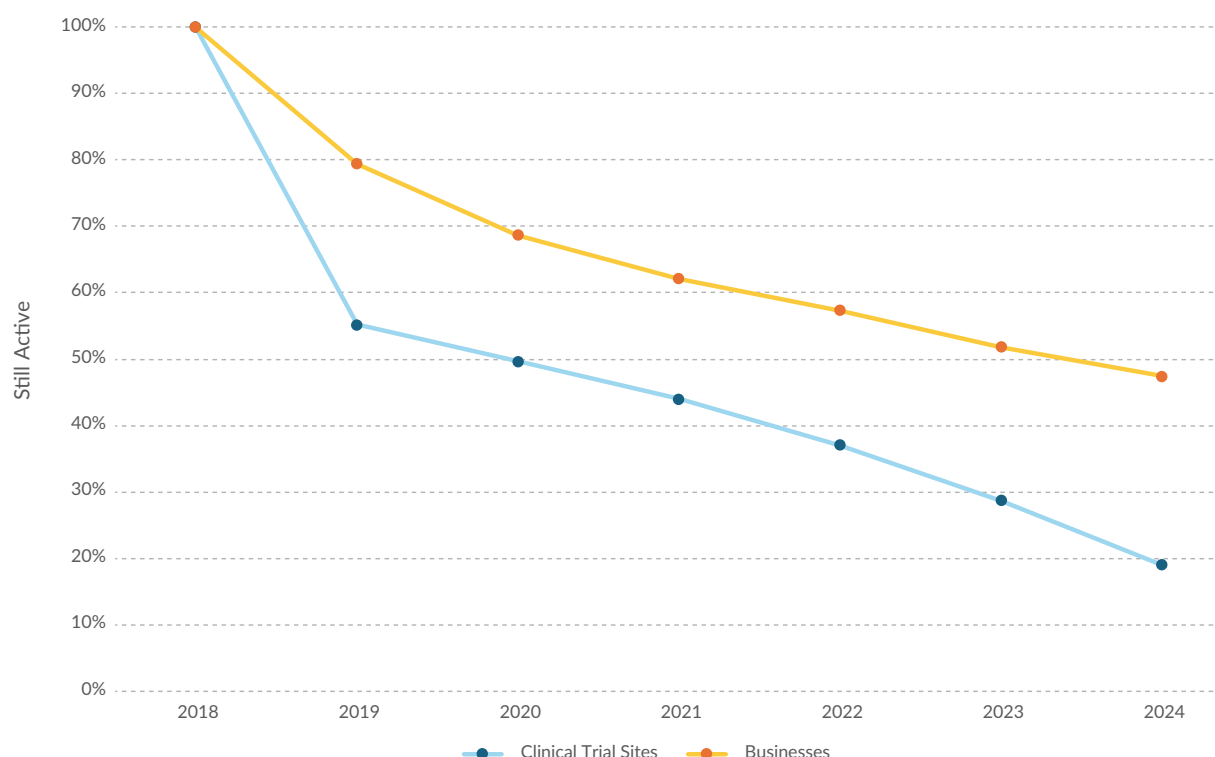
*Source: Authors' analysis of AACT and BLS Business Employment Dynamics data (2025)*

A new site is three times more likely than a new business to die in the first year. Conditional on surviving past one year, death rates are then much closer to each other (which can be observed in Figure 1 as similar slopes from 2019 onward).



We repeat this exercise using the WISE-R data (Figure 2). The pattern of results is similar using an undercount of sites: new sites are still far more likely than a new business to die in the first year, but to a lesser extent, and sites are twice as likely to die in the WISE-R data compared to three times as likely in our analysis of the AACT data.

**Figure 2. Survival of New Clinical Trial Sites and New Businesses (Alternative Data)**



Source: GAA WISE-R (2025)

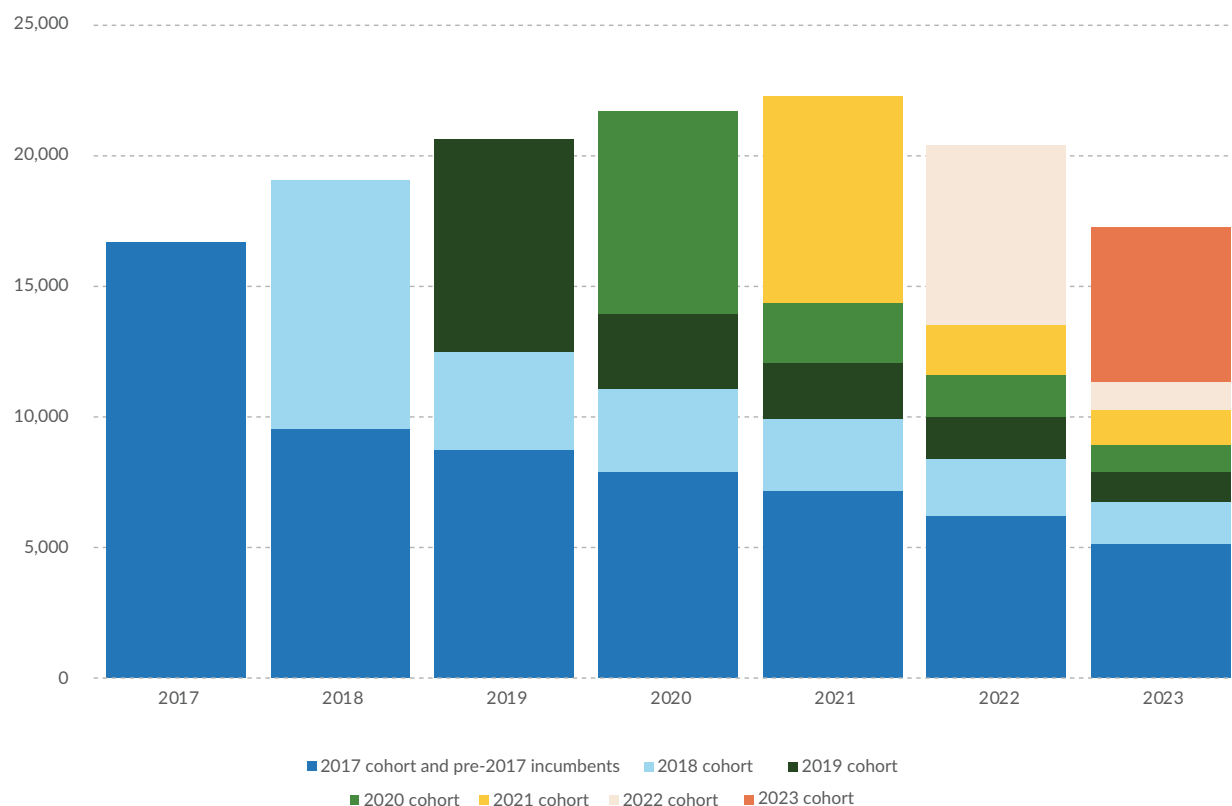
Taken together, the findings highlight that although the supply of sites and the supply of businesses both have a birth and death process, sites are subject to specific forces that are particularly strong in the first year. For example, over half of clinical trial principal investigators are “one and done,” with greater than 60 percent of them reporting workload balance between trial and other work responsibilities as a point of difficulty (Corneli et al. 2017). As another example, early indications that a pharmaceutical is unsafe or ineffective can quickly end a clinical trial (Cefis et al. 2022).

Despite the large attrition of sites during the first year, the supply mirrors that of businesses in terms of general year-to-year dynamics. The total supply of sites in a year is the sum of the stock of sites from the previous year and two flows: the outflow of sites that die and the inflow of sites that are born.

Figure 3 demonstrates inflows and outflows of sites for 2017 through 2023. In 2017, 16,700 clinical trial sites had a new trial begin. These sites are a combination of sites that came on line for the first time in 2017 and that existed pre-2017. This number is the total supply of sites at the start of the sample period.

Then, from 2017 to 2018, 7,136 sites died (were not again observed with a new trial in the data). At the same time, 9,498 sites had their first observed clinical trial start in 2018. On net, the number of active sites grew from 2017 to 2018, but this net growth is happening at the same time as considerable churn: a great number of sites are dying off, and a great number of sites are being born.

**Figure 3. Supply of Clinical Trial Sites**

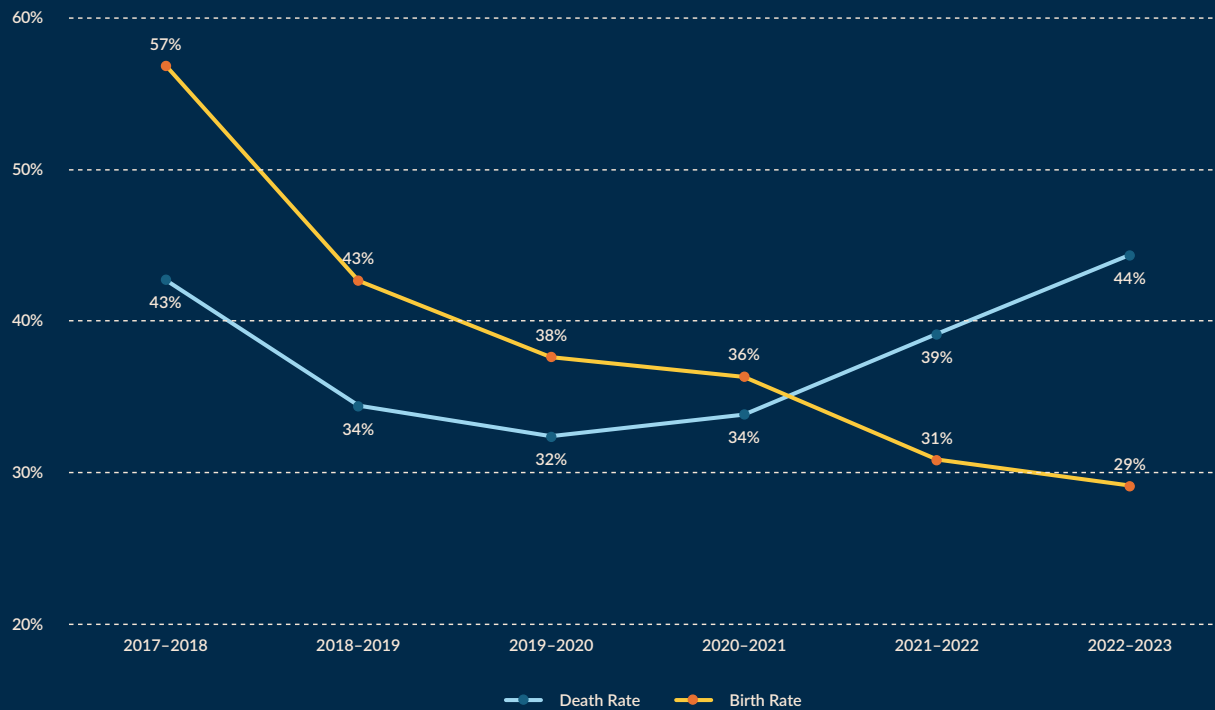


Source: Authors' analysis of AACT data (2025)

This pattern repeats in subsequent years. Each year, a considerable number of incumbent sites die off, and a new cohort of sites is born. The net of these births and deaths is the change in clinical trial site supply. From 2017 to 2021, the net was positive, and therefore the supply grew. Then, from 2022 onward, the net was negative, and therefore the supply shrank.

This pattern can be seen in Figure 4, which plots the birth and death rates of sites between each year. When the birth rate exceeds the death rate, the net growth is positive (which in Figure 3 can be observed as an increase in supply), and when the death rate exceeds the birth rate, the net growth is negative (which in Figure 3 can be observed as a decrease in supply).

**Figure 4. Birth and Death Rates of Clinical Trial Sites**

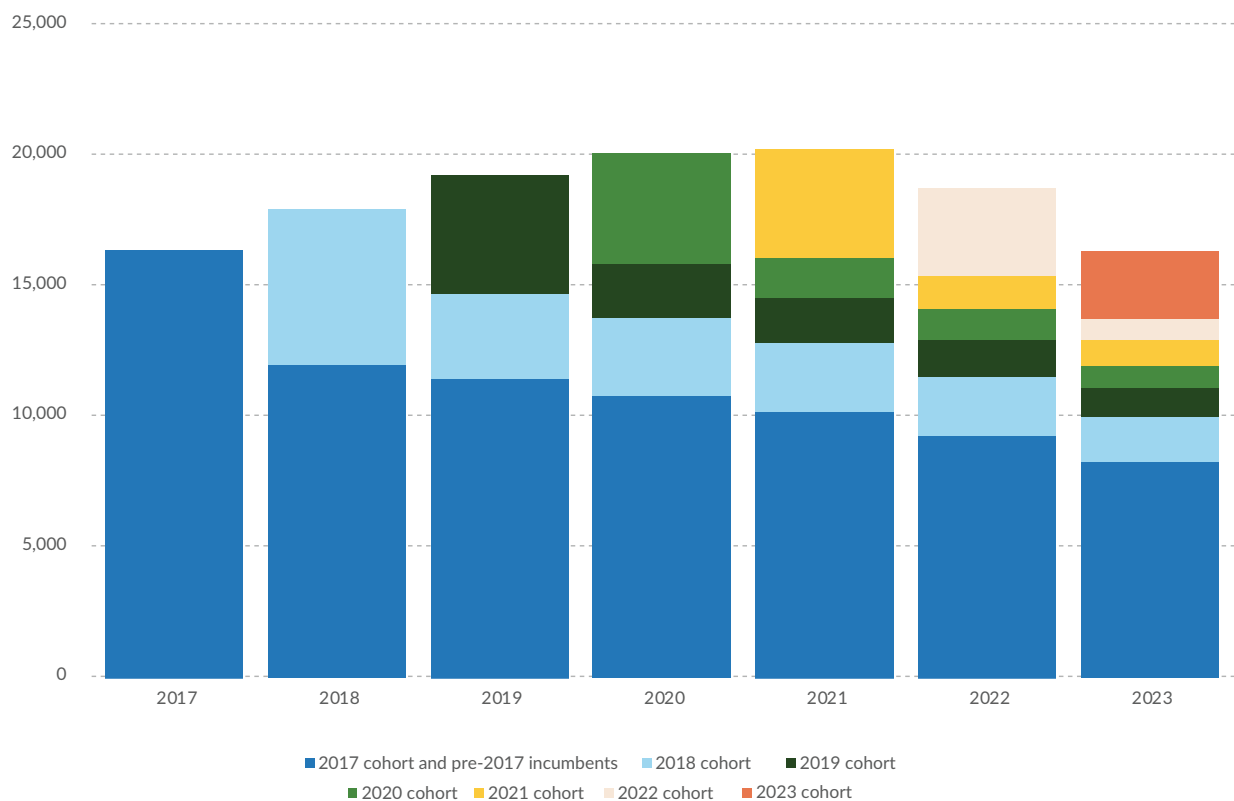


*Source: Authors' analysis of AACT data (2025)*

Note that the crossing of the birth and death rates occurs around the time of the COVID-19 pandemic, when many site openings were delayed and many existing trials attempted to transition to “siteless” alternatives.

Using the WISE-R constructed data, we verify the above results, which are shown in Figure 5. The overall features of the data (inflows of new sites, site longevity, and overall supply) follow the same general pattern as found using the AACT data, but with slightly lower birth and death rates.

**Figure 5. Supply of Clinical Trial Sites (Alternative Data)**



Source: GAA WISE-R (2025)

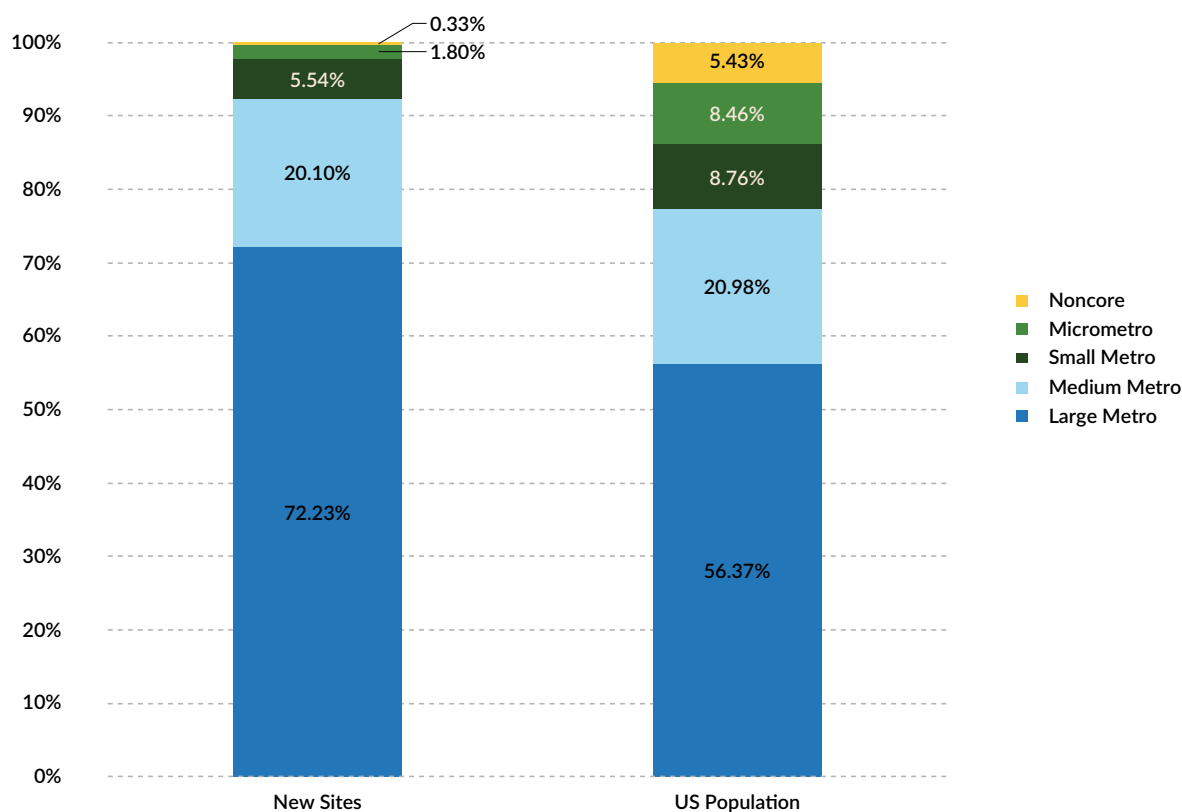
# SITE LOCATION

The surrounding location may influence the birth, death, and longevity of clinical trial sites. Factors include the local costs of opening and operating a site (either at a new facility or as part of an existing clinical practice) or the local population of potential trial participants.

## Population

A large difference is observed in how many sites open based on the population of the county in which the site is located. Figure 6 shows the distribution of all newly opened sites based on the population in the county, as well as the distribution of the US population across those counties. Large metro areas (counties in Metropolitan Statistical Areas [MSAs] of 1 million or more population) account for the largest share, greater than 70 percent of newly opened sites and slightly greater than 56 percent of the population. Large metro areas are followed in order by medium metro areas (counties in MSAs of populations of 250,000 to 999,999), small metro areas (counties in MSAs of populations less than 250,000), micropolitan areas (counties in micropolitan statistical areas), and rural areas (nonmetropolitan counties that did not qualify as micropolitan, or noncore).

**Figure 6. Distribution of New Sites Based on County Population, 2018–2023**

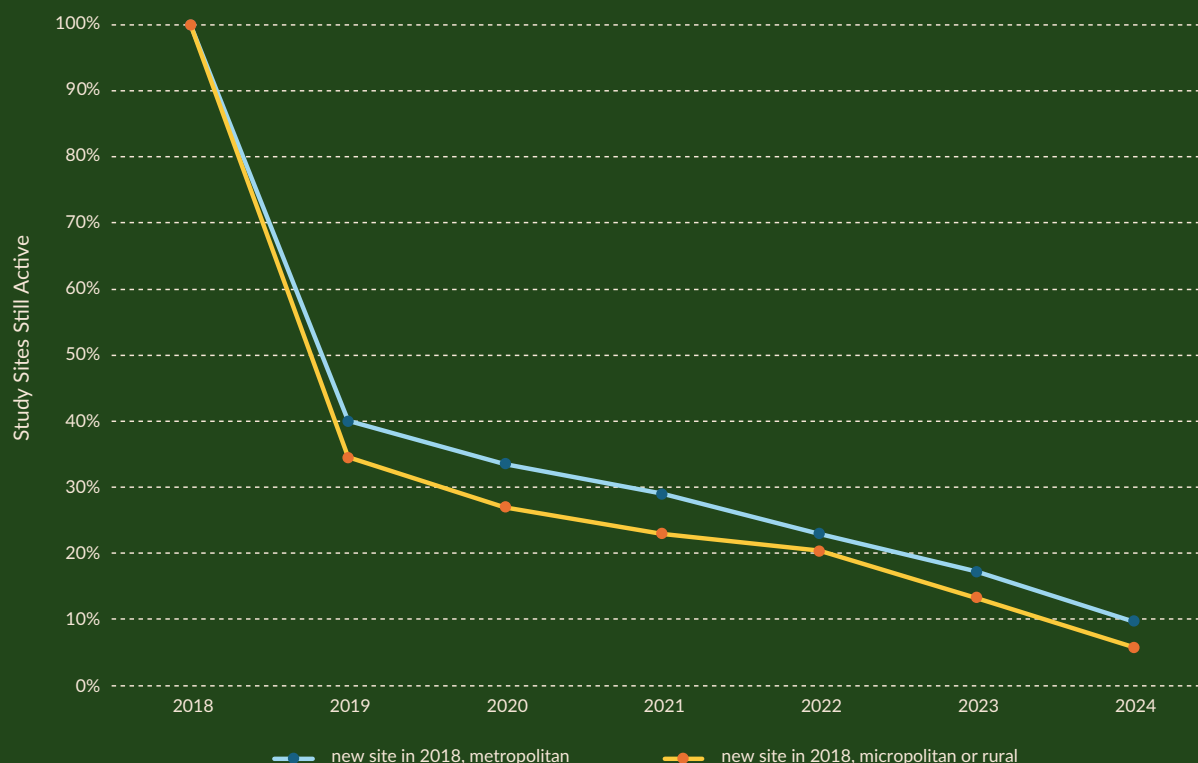


Source: Authors' analysis of AACT and ACS data (2025)

Figure 6 shows that the distribution of sites is not proportional to population: the most populated counties have a larger share of new sites than their share of the population. All other counties have a smaller share of new sites than their share of the population. This disproportionate focus on highly populated areas is partly due to local resources being concentrated where population is concentrated: more populated areas have more facilities and a larger available pool of both staff and potential study participants, making them more attractive locations to run trials (Mulligan 1984). It is also partly due to site opening decisions that consider local prevalence of the disease being studied, which may be concentrated (or better detected) in more populated areas.

Despite the larger investment in more populated areas, the difference in site survival based on the size of the local population is not large, as shown in Figure 7. All classifications of metro areas (large, medium, small, and micro) had nearly identical average site longevity and are combined into one grouping. Less populated areas have slightly worse site survival, but the differences are small. This finding suggests the influence of factors more important to site longevity than the general available population alone.

**Figure 7. Survival of Clinical Trial Sites by County Population**



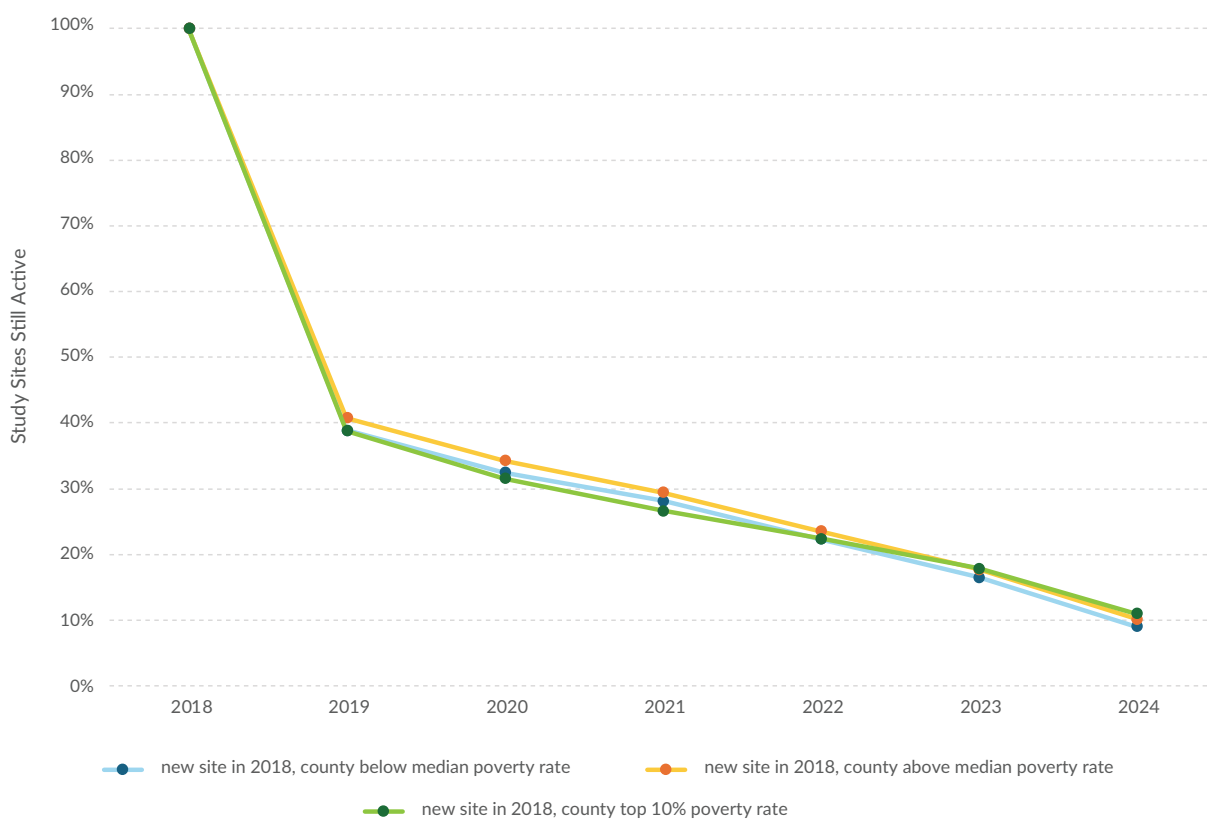
Source: Authors' analysis of AACT and ACS data (2025)

## Local Economic Conditions

Locations with populations that are economically distressed may have a more difficult time supporting clinical trials. It is also possible that local finances may influence an individual's ability to participate in trials, for example, the inability to get time off to participate or the opportunity cost of participation.

Figure 8 shows site survival in counties with poverty rates at or below the median county poverty rate, above the median county poverty rate, and in the highest 10 percent of poverty rates. The difference in site survival across these locations is minimal, meaning that any difference in site survival due to the local economy is unlikely to be driven by the bottom end of the income distribution.

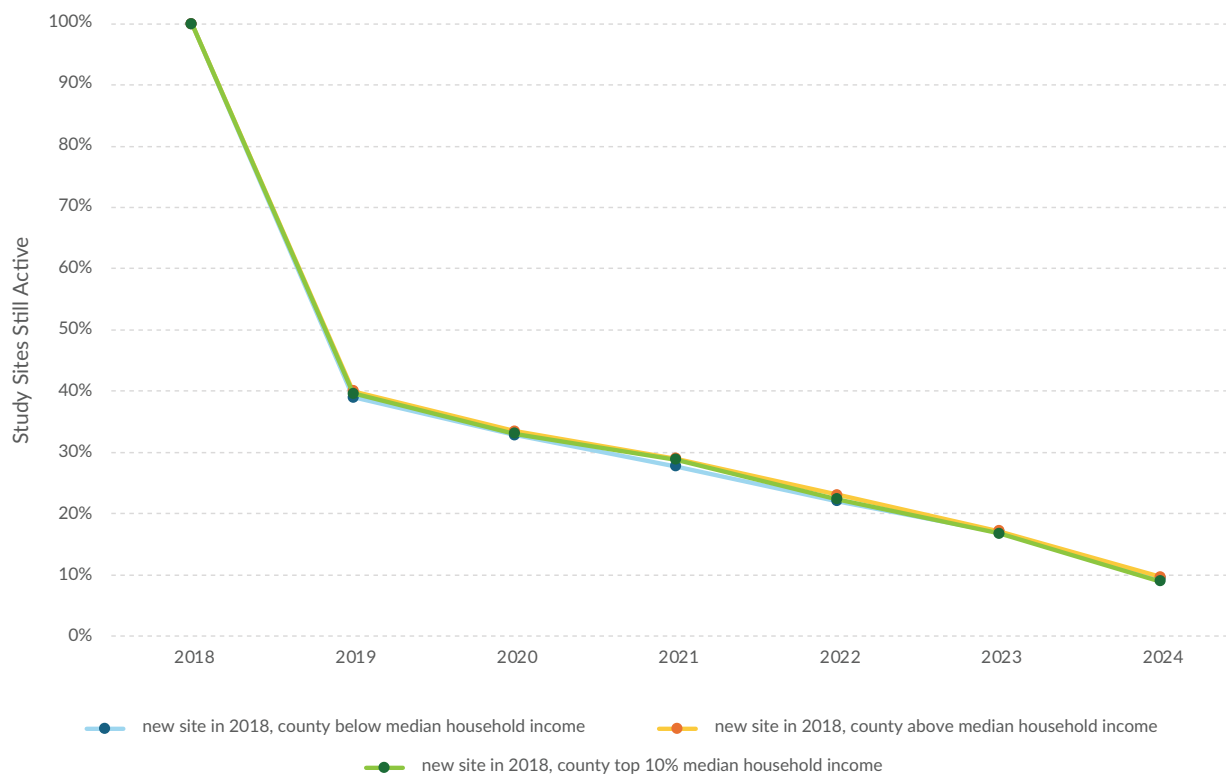
**Figure 8. Survival of Clinical Trial Sites by County Poverty**



Source: Authors' analysis of AACT and ACS data (2025)

A similar pattern is observed for median household income (shown in Figure 9). The income level in a county has little relationship with site survival. Combined with the evidence on poverty, this finding suggests that local economics (at least insofar as they relate to population income) are not correlated with site survival.

**Figure 9. Survival of Clinical Trial Sites by County Median Household Income**

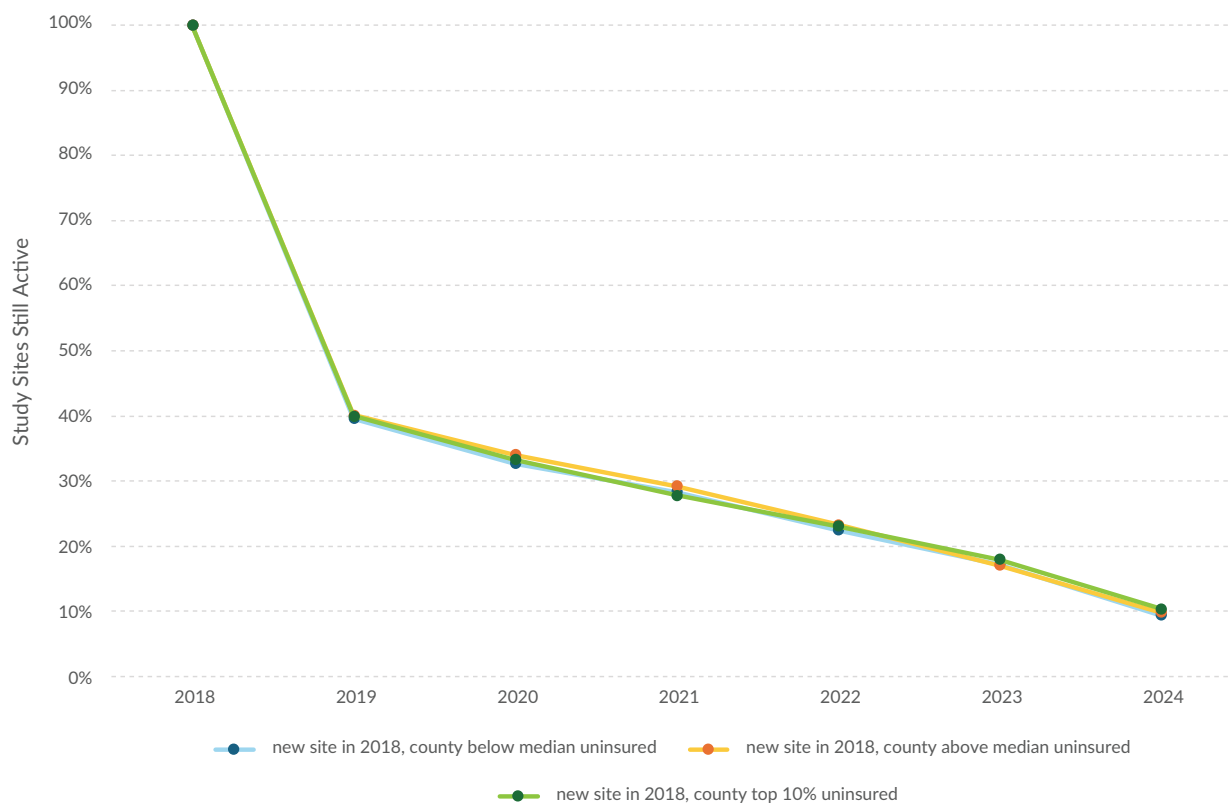


*Source: Authors' analysis of AACT and ACS data (2025)*

Other relevant local factors might influence site survival. For example, health insurance is a major factor in access to medical care (Finkelstein et al. 2012). Clinical trials may be differentially supported by patient populations in locations where they have either better or worse connections to the health-care system. However, no empirical relationship between local health insurance coverage and site survival is evident (Figure 10).



**Figure 10. Survival of Clinical Trial Sites by County Health Insurance Coverage**



Source: Authors' analysis of AACT and ACS data (2025)

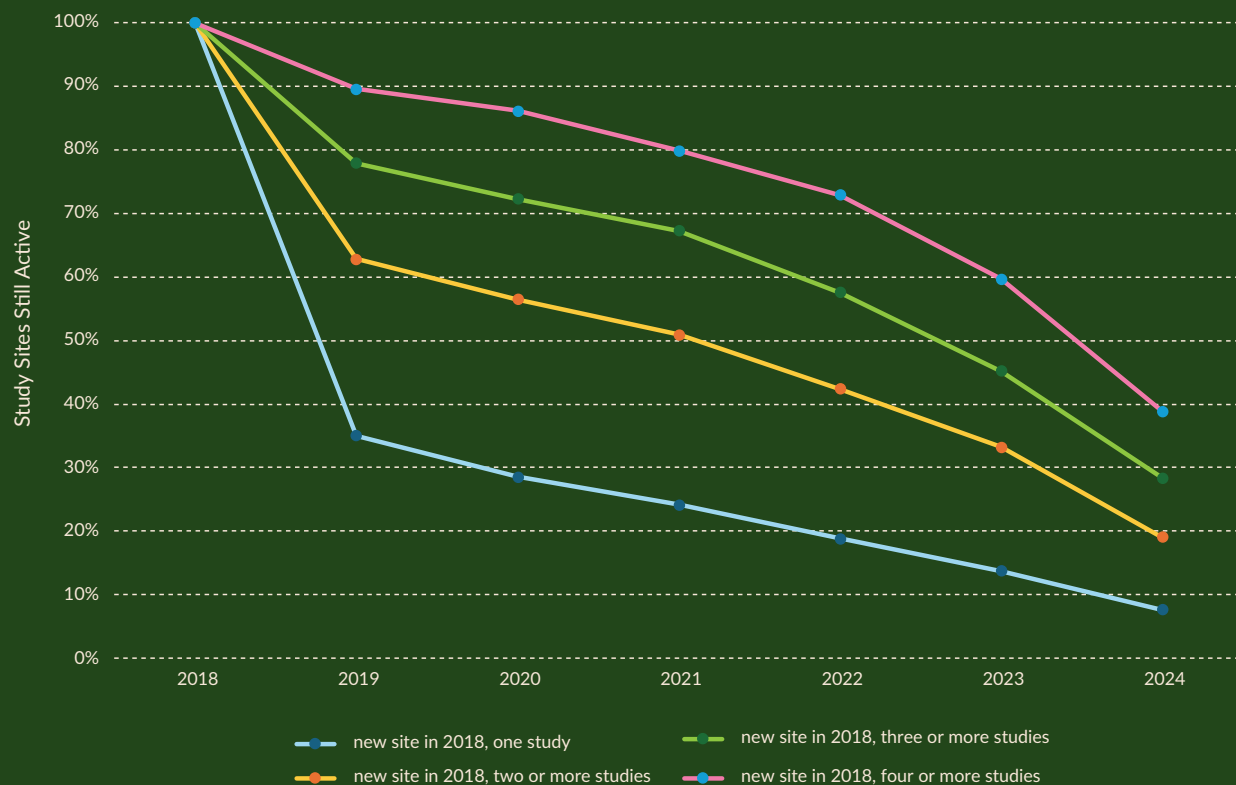
# CHARACTERISTICS OF THE HOSTED TRIALS

Which (and how many) trials are held at a specific clinical trial site may be related to the longevity of that site. To explore this hypothesis, we focus our attention on the 2018 cohort of new sites—which is the cohort for which we observe credibly new sites (as the 2017 cohort includes incumbent sites), over the longest time—and observe how site longevity differs based on the characteristics of the hosted trials.

## Number of Trials at a Site

Figure 11 shows different survival rates for sites based on how many trials are held at a site in the first year for the 2018 cohort. The pattern is immediate and obvious: sites that host more trials are more likely to survive.

**Figure 11. Survival of Clinical Trial Sites by Number of Trials Held in the First Year**



Source: Authors' analysis of AACT data (2025)

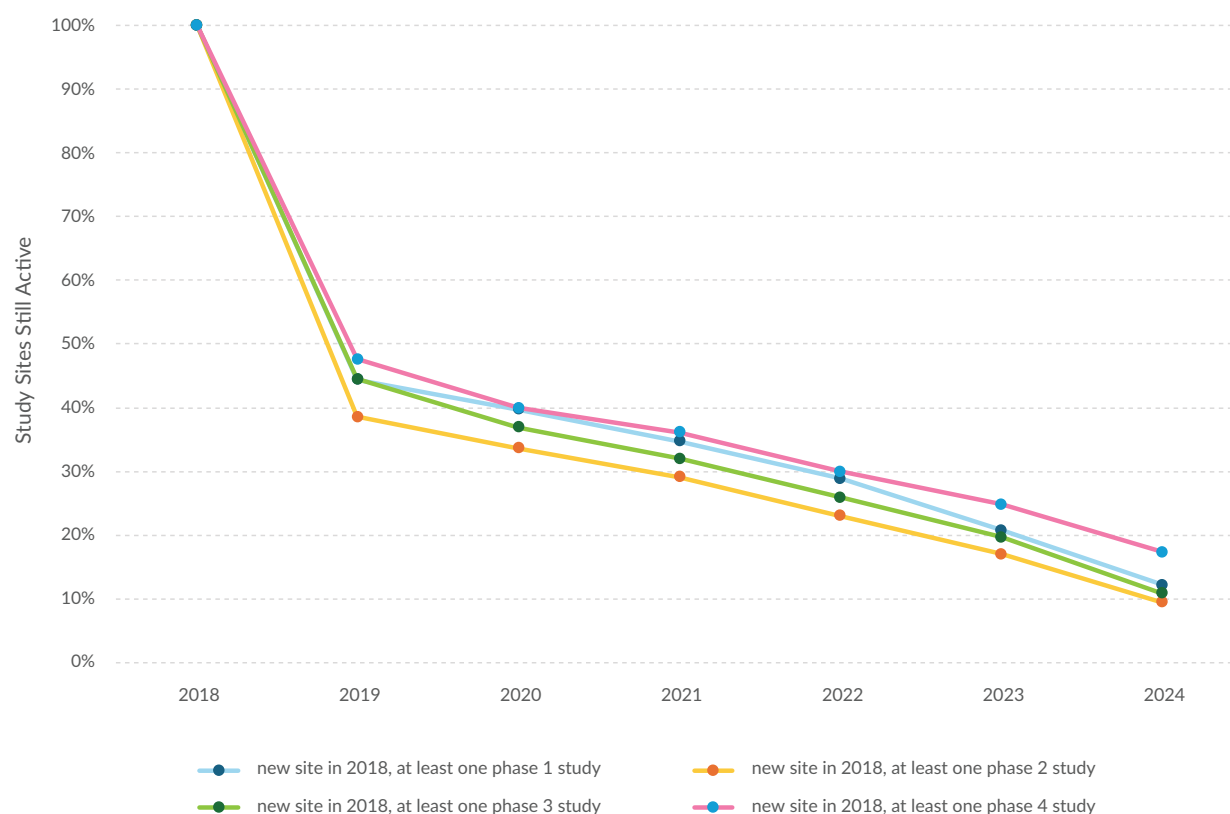
We are not implying that it takes longer to close sites with more trials because they have more operations to complete before closing is feasible (although that may be true). Rather, based on our measure of death, a site dies when it has no further new trials. So, the pattern in Figure 11 shows that sites that host more trials in their first year are more likely to continue to launch new trials in future years.

## Phase

The phase of the hosted clinical trial is less strongly related to the survival of the site (Figure 12). Each line shows the survival of a site conditional on its hosting at least one trial of a given phase. Because sites can host multiple trials at one time, and because these trials need not be the same phase, these categories are not mutually exclusive.

Generally, sites that hosted at least one phase 4 trial in their first year had the best survival, and sites that hosted at least one phase 2 trial in their first year had the worst survival. However, the survival differences between these groups are much smaller than the differences based on scale. The number of studies hosted is much more strongly related to site survival than the phase of the trials hosted.

**Figure 12. Survival of Clinical Trial Sites by Phase of the Hosted Trials**



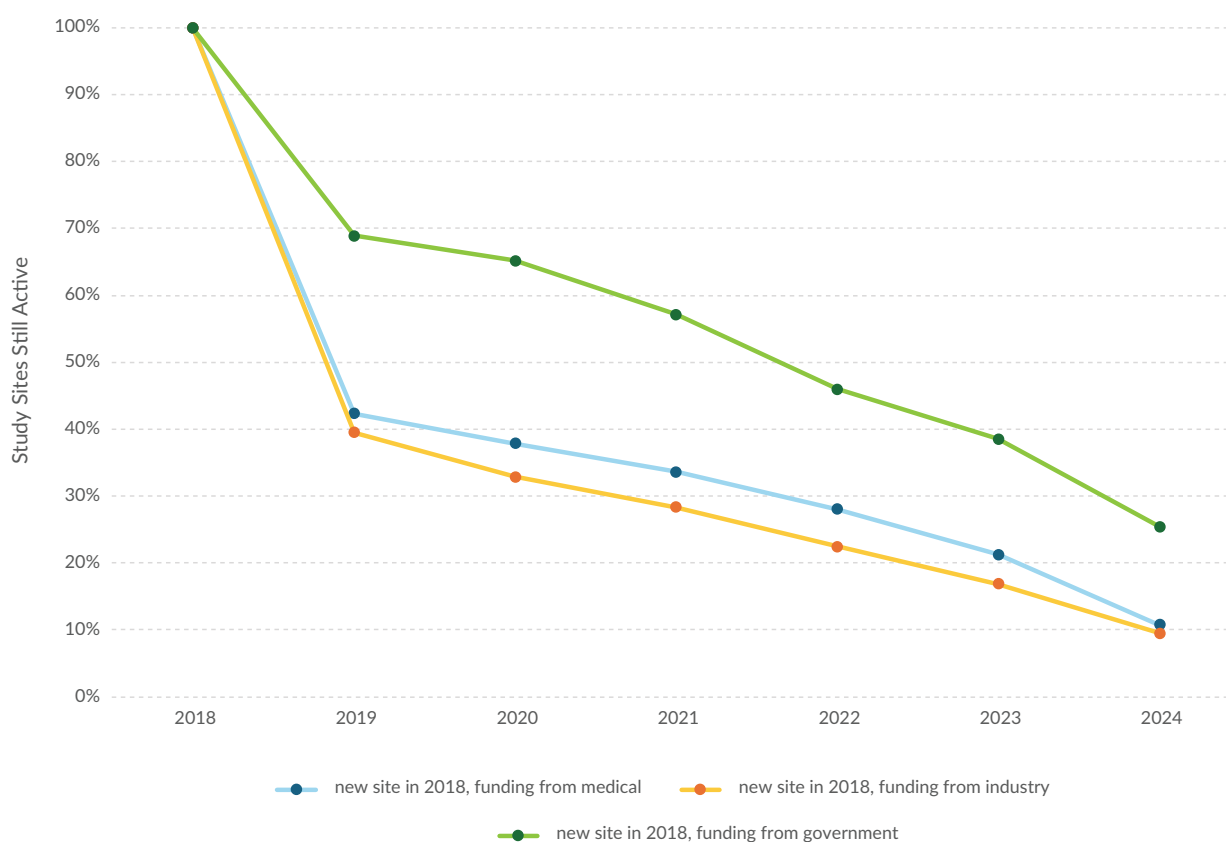
Source: Authors' analysis of AACT data (2025)

## Funder

Figure 13 shows different survival rates for sites based on who provided the funding for at least one of the trials performed in the site's first year. The three categories shown are sites with at least one first-year trial funded by the government (which is predominantly the National Institutes of Health [NIH]), sites with at least one first-year trial funded by industry, and sites with at least one first-year trial funded by a medical entity (e.g., a hospital, academic medical center, health system, or patient organization).

Government-funded sites have by far the best survival rates, but it is unclear whether government funding enhances site survival or whether site survival better attracts government funding. Sites might only be able to attract NIH dollars if they can demonstrate stability and the ability to maintain operations into the future. However, the opposite is also possible; NIH might provide support for trial infrastructure and personnel that industry does not provide (or provide to the same extent). It is also possible that the nature of government-funded studies differs in a way that correlates with site survival (e.g., the government may fund a larger proportion of longitudinal studies). In addition, because this report is limited to studies for drugs seeking eventual FDA approval, we are not capturing the full spectrum of research funded by the government.

**Figure 13. Survival of Clinical Trial Sites by Funder of the Hosted Trials**



Source: Authors' analysis of AACT data (2025)

# CONCLUSION

The number of clinical trial sites grew consistently from 2017 to 2021. This growth was followed by a downturn in total supply. The change in overall supply masks a significant amount of churn: each year, many sites are established (take on their first clinical trial) and many others are discontinued (take on no further new trials). The net of this site creation and site destruction is what determines the movement in the overall supply of sites.

Certain characteristics of a clinical trial site are predictive of site longevity. The strongest predictor is the number of trials a site hosts concurrently: the more trials a site hosts, the more likely a site is to continue to host additional new clinical trials in the future. Also predictive is the funder, with government-funded sites having longer lifespans. This relationship is not necessarily causal; there are several possible reasons for this relationship, so the exact mechanism by which government funding is related to site longevity is unknown.

The characteristics that are not related to site longevity are also notable. The phase of hosted clinical trials and the population of the county in which the site is located are only weakly related to site longevity. In addition, the economic well-being of the local population (as measured by the poverty rate, median household income, and health insurance coverage) appears to be uncorrelated with site longevity—possibly due to the heavy concentration of sites in urban (and economically somewhat similar) locations.

Understanding how and why sites open and close is central to addressing questions of access and community engagement. This report provides a benchmark against which we can evaluate interventions that help build out community research infrastructure. For example, when organizations share best practices through forums such as Enabling Networks of Research Infrastructure for Community Health through Clinical Trials (ENRICH-CT), the data in this report can be used to evaluate their performance in terms of site longevity, given the characteristics of the site.

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**Andrew Friedson, PhD**, is the head of research for Milken Institute Health. He is an economist with a specialization in health care and related sectors. Before joining the Milken Institute, he spent over a decade in academia, where he was an associate professor of economics at the University of Colorado, Denver, with a secondary appointment in the Department of Health Systems, Management and Policy at the Colorado School of Public Health. He is the author of the textbook *Economics of Healthcare: A Brief Introduction*, which is published by Cambridge University Press and used in classrooms around the country.

Friedson has wide expertise in health economics and has published peer-reviewed research on health behaviors, markets, and policy in premier journals in economics, public policy, and medicine, including the *Journal of Public Economics*, *Journal of Law and Economics*, and *JAMA Health Forum*. His research has been covered in popular press outlets, including *The Economist*, *The New York Times*, and *The Wall Street Journal*. He received the Richard Musgrave Prize from the National Tax Association in 2014 and the Excellence in Research Award from the University of Colorado Denver College of Arts and Sciences in 2022.

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