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EXECUTIVE SUMMARY

Health Care Ecosystem

Secular and Structural Impacts of Covid-19

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Disclaimer: These are my (Eric Larsen) editorial views and not necessarily the views of Advisory Board/Optum/UnitedHealth Group.

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Preface

The peri- and post-pandemic period will be a sustained time of stress and kaleidoscopic shifts for all players across the health care ecosystem—especially payers, providers, and the capital allocators playing an increasingly deterministic role in our space. Many of these changes are only partially visible, and at this point, we are left with more questions than definitive answers. Some of the dynamics at play include:

- Unjustified optimism (by many providers) surrounding the timing and elasticity of a volume rebound;
- Deregulation, technology, and patient preference accelerating site of care shift, especially to the home as an epicenter of care;
- Cost pressures, workforce instability, and technological enablement speeding ‘top-of-license’ practice evolution;
- Public market disillusionment with health care equities portending a deceleration of public exits in 2022;
- Hyper-liquidity in the venture capital and growth equity markets birthing an (unsustainable) generation of 11,000 digital-forward startups;
- Impending digital health ‘winter’ ushering in a period of brutal price competition, consolidation, and a Darwinian ‘culling of the herd’;
- Overcapitalized PE firms executing buyouts (and driving up purchase multiples) of physician groups, post-acute, and hospital assets;
- Trillion-dollar market cap tech players continuing to prototype and iterate their health care disruption strategies, with little to show in terms of fundamental impact (so far);
- Global supply chains for PPE, medical equipment, and APIs breaking down, exacerbated by the Russia/Ukraine war and by intensifying U.S.-Sino posturing;
- Increasingly assertive and noisy saber-rattling from legislators and policymakers sponsoring proposals for sweeping government health care controls;
- And a newly-emboldened ‘trust-busting’ brigade of FTC and DOJ ideologues rewriting legal justification to oppose consolidation.

To borrow a phrase from evolutionary biology, we’re in a moment of “punctuated equilibrium.” And while many of these impacts remain opaque in terms of their ultimate consequences, we urgently need to begin to predict and prepare for their effects.

This report—an executive summary of a more fulsome analysis, available on request—will discuss the above major domestic and global trends, as well as offer predictions in terms of how the competitive landscape will evolve in the coming period.

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01

Hospitals and health systems

Health system sector most disadvantageously affected by pandemic—incumbents at risk of twin threats of *disintermediation* and *commodification*

Overall, the health system sector has been disproportionately negatively impacted by diminished inpatient and outpatient volumes, payer mix degradation, site of care shift acceleration, virtualization of care, workforce instability and sharply rising labor costs, capitalization of asymmetric competitors, etc.

However, the sector is not monolithic—certain for-profit hospital companies and some not-for-profit (NFP) systems that have long been vertically integrated have shown resiliency and have profited through the pandemic; systems that are hospital-centric and predominantly fee-for-service (FFS) dependent have been compromised by the several mounting threats (enumerated below). More concerningly, the list of remediation options available to these systems is shrinking.

Health systems not monolithic—'phenotyping' systems into three categories

At the risk of oversimplification, I offer three 'phenotypes' of the top 100 health systems in the country: proficient operating companies (10% of the market); vertically integrated payer/providers (10% of the market); and systems in 'purgatory' (80% of the market). This last category—those systems with middling-to-weak operational performance and FFS reimbursement profiles—are the ones most vulnerable to revenue and profit sanctuary disappearance. This simultaneously reaffirms the value (and, frankly, unattainability) of vertical integration for most health systems and highlights the nearly unbridgeable gap that systems without vertical integration must try to close.

Financial degeneration will prompt system focus on a reduced number of 'existential' priorities

Health systems' financial positions continue to erode—removing the $178B in 2021 fiscal stimulus and the $100B in loans, the average health system's 2021 operating margin was 0.03%. The early months of 2022 have seen further deterioration with a negative 4.52% operating margin in January, followed by a negative 3.45% in February. Additional clouds are forming on the horizon, with the April 1st return of the 2% sequester (after a two-year hiatus) and a projected 3.2% pay bump (which the AHA equates to an effective net pay decrease of 0.03%, given inflation). In sum, this continued financial stress may precipitate a *liquidity crisis*, which may eventually devolve into a more structural *solvency crisis*; with health system leaders consequently moving into a 'lockdown' psychology and concentrating on four priorities: cost rebasing, cash acceleration, capital preservation, and heightened competition for scarce, post-pandemic reduced patient volumes. This will shift C-suite priorities sharply and will affect how they choose to partner and form alliances going forward.

Non-operating (portfolio) *overperformance* will continue to mitigate effects of operating *underperformance*—until the correction

Hospitals and health systems continue to rely on cross-subsidy economics—the outperformance of their equities and alternatives portfolios to cross-subsidize chronic operating underperformance. As of late 2021, the top 25 U.S. health systems collectively boasted $455B in assets on their balance sheets; $180B of this in investable securities. The buoyancy and resiliency in the equities markets over the Covid period (with a sharp, two-month Covid-induced recession, followed by a record rise in U.S. and global exchanges) has disproportionately benefited the health system sector (given its large portfolio holdings), and has created a robust 'buffer' to mitigate consistently sub-1% operating margins. As an example, Ascension recorded a $5.7B net margin last year, almost all of which was attributable to non-operating performance. Other major systems reported similar ratios of non-operating to operating metrics. In other words, the performance of the $1.4T health system sector is inextricably tied to broader macroeconomic realities—when the market shifts, expect major reverberations in this part of the health care landscape.

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As the Federal Reserve (belatedly) responds to 40-year high inflation rates with an abrupt pivot from dovish to hawkish monetary policies; as we move from quantitative easing to quantitative tightening to reduce the current $9T Fed balance sheet; as we calculate the impact of as many as seven rises to the base rate across 2022 (including potential 50–75 bps raises); and as fiscal stimulus sharply comes to a close, we'll see how the economic bubble that has propped up asset prices, benefiting operationally-challenged hospitals, deflates. Indeed the correction, as of early May, is already underway—the US economy contracted in Q1 by 1.4%, the S&P 500 is down 13.3% (its worst start to a year since 1939), and the NASDAQ has officially entered bear market territory with a 21% drop. In short, macro headwinds will have a disproportionately hard-hitting negative impact on hospitals and health systems, who will no longer be able to rely on cross-subsidies from non-operating income. We will see intensified urgency to address structural cost overruns and revenue shortfalls by hospitals. The aforementioned Ascension case study is again illustrative—the first quarter of 2022 brought a $884M loss, of which $672M was attributable to operations, and the remainder to investment declines. We will see many such announcements as the year progresses.

Hospital and health system horizontal consolidation to accelerate post-pandemic—but almost exclusively non-contiguous mergers

Horizonal consolidation among health systems is set to speed up post-pandemic, as systems seek the (illusory) safe harbor of size. This process was already far advanced pre-pandemic, with the top ten largest health systems representing $324B in revenue, and the top 100 totaling $856B. Post-pandemic, a muscled-up and unabashedly ideological FTC and DOJ will discourage *intra-market* consolidation but has little legal precedent or power to contest *inter-market* consolidation. And this is where we will see the greatest health system activity—especially in the formation of multiple, new, multi-geography $20–30B systems. 2021 showed incipient signs of this—of the 49 hospital consolidations, eight were 'mega mergers' with the smaller partner's revenues surpassing $1B. Despite a 2022 Q1 slowdown in M&A—due more to macro factors than anything idiosyncratic to the health system sector—we should see an acceleration in activity across late 2022 and early 2023. Unfortunately, this horizontal consolidation is unlikely to lead to superior operational and financial outcomes—this group is predominantly a set of holding companies, not operating companies; too many can be characterized as SINOs—"systems in name-only."

Vertical integration for health systems—both in aggregating physicians as well as launching/acquiring health plans—will stall post-pandemic

Vertical integration—both *upstream* in integrating a payer function and *downstream* in integrating ambulatory assets, primarily physicians—will decelerate post-pandemic. Hospitals, already economically fragile as noted above and constrained by regulatory impediments (e.g., fair market value considerations on physician acquisitions, and RBC requirements on the health plan side), will be outgunned by the many asymmetric aggregators of physician practices (payers, private equity, SPACs, etc.) with unprecedented capital dry powder to deploy, and will similarly be unable to advance their ambitions of acquiring or starting health plans. On the former (physicians), Covid has largely been the coup de grace in ending private practice in medicine in the U.S., with 76% of physicians employed (52% by hospitals and 24% by payers and capital allocators like PE/VC investors), reducing the prospective pool of available doctors. On the latter (health plans), the past decade is littered with examples of failed attempts by providers seeking to build or buy a payor capability, and the current market will be even more inhospitable to this than recent history. Additionally, most payers—especially the Blues—will continue to show a strong disinclination to share downside risk with health systems, leaving hospitals with anemic levels of capitation (1.6% of total revenues).

Inpatient admissions unlikely to rebound in an elastic, V-shaped recovery post-pandemic

Past economic dislocations including the dot-com burst and the Global Financial Crisis witnessed slow, protracted returns to pre-crisis volumes; the pandemic will consequently see an even slower, more uneven return to pre-pandemic volume levels. Already we are observing this—separating out Covid and Covid-adjacent volumes, hospital inpatient volumes as of fall 2021 hovered at 79% of 2019 inpatient, and 84% of outpatient volumes. The myriad causes here—lingering stigmatization of inpatient and ED sites for fear of contracting Covid; pandemic-induced acceleration of site-of-care shifts; embrace of home-based

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and virtual/hybrid modalities will further suppress the return of inpatient volumes, particularly higher contribution-margin elective and orthopedic procedures. Even countervailing trends—the aging population (especially age 85+), the tragically self-rationed diagnoses and treatments (e.g., oncology) during the pandemic—will only serve to mitigate, not cancel out, overall volume decreases. Among other consequences, this will intensify financial pressures on acute care-centric providers and FFS-dependent specialty practices—all of which will further catalyze intense competition for reduced patient volumes.

VBC and capitation: Provider winners and losers

While VBC activity (and rhetoric) have increased in recent years, there is widespread (and justified) disillusionment. Ten years and $20B of allocations later, CMMI has little to show in tangible results—only 5 out of 54 CMMI models have resulted in substantial savings. And the overall savings generated by ACOs are vanishingly small relative to the $750B+ annual Medicare budget. And with the continued ambivalence toward Global and Professional Direct Contracting (GPDC) and its evolution into REACH, the migration toward more impactful risk-sharing mechanisms will slow. For providers, the mismatch between rhetoric and reality in VBC is sharp, particularly for hospitals. Despite public pronouncements around commitment to VBC, the actual levels of delegated risk (capitation) are less than 2% of revenues for health systems. Research suggests a minimum threshold of 23–29% capitation to make the economics of true population health (ambulatory-sensitive admission diversion, etc.) work.

Given the precarious financial position of health systems and FFS-dependent physicians described above, it will be difficult to fund the conversion to VBC for these groups; the divide between the ‘haves’ (vertically integrated ‘payvider’ systems) and the ‘have-nots’ (FFS-dependent systems at risk of disintermediation and commodification) will increase. And despite protestations to the contrary, most payers are going to be slow to grant delegated risk (at the risk of enabling a future competitor). The 35 independent Blues plans are especially sensitive to this existential threat. Overall, the pandemic will decelerate hospitals’ move to risk. Below, I will argue that the inverse is true for primary care physicians.

Historic levels of health sector employment unrest

Intensified labor organization tends to follow economic dislocation; the pandemic has been no exception. In fact, we are witnessing *greater* unionization in the sector specifically because of the health care nature of the recession. With the backdrop of the most pro-labor and pro-organization presidential administration in generations, we’re seeing unprecedented labor organization activities especially at the hospital level, increasingly acrimonious and ad hominem labor campaigns (e.g., SEIU and HCA), with the overall rhetoric and propaganda reaching the most vitriolic pitch in recent memory. Expect more labor upheaval across 2022, ‘wartime profiteering’ agency and travelers fees (now cresting $10K/week for certain specialty nurses in some markets) and overall SWB expenses—already the largest line-item on every health system’s budget—rising an additional 5–8% across the next year. The month of April in one state—California—is a harbinger of what’s to come: we witnessed three major executed or threatened strikes by nurses at prominent systems including Stanford (5,000 nurses, three-day strike); Sutter (8,000 nurses, one-day strike); and an impending walk-out by 2,000 Cedars-Sinai nurses in mid-May. And this instability isn’t confined to NFPs—HCA saw an almost $20B drop in its market capitalization in a single day (April 22) after lowering its 2022 guidance due to 11% higher labor costs, more dependency on agency spend, and difficultly in recruiting/retaining nurses. Expect this to get worse before it gets better.

Perishable hospital goodwill

The enormous Covid goodwill generated toward hospitals is ephemeral and will not change secular commodification/disintermediation trends listed in this analysis. It’s remarkable just how perishable the goodwill generated by hospitals by their response to the pandemic—and for that matter the goodwill generated by the biopharmaceutical industry through their Herculean effort to decode the pathogen and sprint a phalanx of vaccines to market in record time—has proved. Post-9/11, goodwill toward hospitals jumped sharply but reverted to the mean within 12 months—we will likely see a similar degradation post-pandemic. Recent studies like the April 18th Lown Institute report alleging 83% of NFP hospitals spent less on charity care than the value of their tax breaks (resulting in a $18.9B ‘fair share’ 2019 deficit) will only speed the erosion of goodwill.

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Implications for (global) supply chains—resilience, not fully re-domesticated manufacturing

Rather than running at re-domesticated sourcing, which will prove infeasibly expensive and complicated, U.S. health care should focus on improving supply chain resilience and maintaining a strategic stockpile of key medical supplies. Hospitals, health systems, and large ambulatory groups will need to create their own strategic reserves and maintain their own PPE stockpiles, and not rely on impractical and unrealistic plans to re-shore and re-domesticate manufacturing capabilities. Already the first (well-intentioned but impractical) wave of corporate efforts to re-shore PPP manufacturing have folded under the weight of unsustainably high labor and CapEx costs.

De-Globalization? No. De-Chinafication? Yes.

The pandemic has exposed underlying infrastructure weaknesses and vulnerabilities in our health care supply chains, including an over-reliance on China and Chinese-made goods. We've seen prices spike and supply deliveries disrupted, resulting in shortages of (chiefly) commodity items. To mitigate these vulnerabilities—particularly in more sensitive areas such as APIs (as well as non-health care areas such as rare earths), the U.S. is coalescing around a "de-Chinafication" policy that is unlikely to slow down during the Biden Administration.

De-Chinafication, however, is not synonymous with de-globalization. Globalization after a peri- and post-pandemic slowdown, will resume its relentlessly upward historical arc. Decoupling from China, in contrast, will move forward—perhaps with acceleration given the tightening alliance between Russia and China—and we will see a shift in manufacturing and commodity purchases to low-cost production countries that do not have great-power geopolitical agendas (India, Romania, Vietnam, Mexico, Bangladesh, etc.).

Outsourcing 'Golden Age'

Returning to the domestic front, all indicators—quantitative and anecdotal—point to a multiyear surge in outsourcing contracts as a result of hospital and health system economic fragility. The trend will be widely-encompassing (RCM, IT, analytics, cybersecurity, application development, infrastructure and data centers). Pure-play solutions have aggressively expanded in the market, and the valuations rose sharply across 2021 (declining along with the broader equities markets toward the end of the year). Eventually there will be "multiple dispersion," and as winners emerge in each sector, the next 12–24 months will be a land grab among these companies. We will see more public exits for privately-held RCM and IT companies once the IPO window reopens (e.g., Ensemble and Conifer).

Bottom line—commodification and disintermediation of health systems

All sectors of the health economy have been profoundly affected by the pandemic—but one sector in particular will emerge weaker and more vulnerable: health systems. Overall, this group has been disproportionately negatively impacted by diminished inpatient volumes, payer mix degradation, acrimonious labor relations, site-of-care shift acceleration, virtualization of care, capitalization of asymmetric competitors, etc.

Post-pandemic, hospital-centric health systems will be at heightened risk of *commodification* and/or *disintermediation*—the holders of risk (payers, PMPM-bearing PCP groups, etc.) and the newly well-capitalized non-traditional competitors will be able to take advantage of the trends inventoried above (impaired volumes, site of care shift, virtualization adoption, etc.) to reduce the relative leverage of traditional FFS-dependent providers. This will be a moment of 'competitive encirclement' as these players move in on the 6% of GDP sitting in these hospitals and seek to divert admissions, drive down reimbursement rates, ally with 'value-oriented' and lower-cost players to shift market share, and bet on DTC plays—all of which undermine incumbency advantages for health systems.

Final hospital and health system note—'personality-driven' sector representing 6% of GDP

Remarkable for a sector of this size and complexity—6% of GDP, the '14th largest country' in the world (following Australia and ahead of Spain) if it were a standalone economy—the industry is disproportionately controlled by 100 individuals—the 84 men and 16 women comprising the top 100 systems. In my estimation, this sector functions much more as a cottage industry and is predominantly a "personality-driven" sector. These CEOs drive the most consequential decisions across the industry, with a surprising degree of individual authority and autonomy. I struggle to find an analogous situation in another part of the economy. It is worth noting that

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this sector is not immune to the 'great resignation' economy-wide dynamics—indeed, we are seeing a hospital CEO resignation *every 72 hours* so far across 2022 (29 in Q1, vs. 15 in Q1 2021). Let's turn to that phenomenon now.

02

Workforce

The Great Resignation is here to stay—with far-reaching consequences for the health care workforce

Lots of (digital) ink has been spilled on this phenomenon, and the numbers justify it—4.5M Americans left their jobs in November 2021 even as openings remained elevated, the largest number since 2000. Worth noting that this is not a singularly American phenomenon—it's reflected in China's "lie flat" movement, with young Chinese opting out of the frenetic '996' phenomenon (widespread practice of working 9 a.m.–9 p.m., 6 days a week); Japan, which originated the word "Karoshi" (death by overwork), is proposing a four-day workweek; and several European countries led by Denmark and other Scandinavian countries are doing the same. This peri- and post-pandemic trend will be pronounced and highly consequential in health care, with its 16M-strong workforce. And some of the most destabilizing impacts—including wage inflation and the impending wave of retirements—are yet to appear in force (inflation impacts overall are delayed in healthcare, but will appear with a vengeance across 2022). Health care employers need to fundamentally reevaluate their workforce strategies, especially around driving productivity gains to mitigate structural staffing shortages. Nearly 1 in 5 health care workers have quit their jobs during the pandemic, and another 12% have been laid off; overall, 1/3 have been dislocated, either voluntarily or involuntarily.

Wage inflation and workforce instability will impact providers at a moment of heightened financial vulnerability

Workforce destabilization may emerge as the number-one issue for health system CEOs in 2022. Of course this has been a perennial concern, with salary, wages, and benefits representing 55–60% of the average NFP health system's net patient revenues, but pandemic-related burnout, early retirements, and exploitative pricing by staffing agencies are moving it quickly to the foreground. There are currently 1.8M job openings in health care, up almost 50% YoY. Resignations in health care are also up 50% in the past 24 months; average hospital turnover increased to 19.5% in 2021, up from 17.8% in 2019 (and anecdotally, some markets are pointing to turnover as high as 30%). In sum, health systems are cumulatively paying $24B more per year for clinical labor than they were pre-pandemic—this on a negative average operating margin as noted above. (Worth noting that $24B annual industry labor cost almost exactly parallels the one-day market capitalization loss HCA experienced in Q1 when it lowered forward guidance due to mounting labor costs.) The instability isn't confined to hospitals—similar trends affect urgent care, ASCs and SNFs, each closing or limiting operations due to staffing shortages. The tone between administrators and nurses (in particular) has become more acrimonious, with flashpoints in most geographies around the country: Tenet's 285-day nursing strike in Massachusetts, the three April California health system strikes noted above, and the strife between SEIU and HCA (with allegations of in appropriate ED admissions and other charges) are illustrative.

Pandemic only exacerbated preexisting workforce fault lines

These are structural, long-term issues—we've known about the demographic and burnout issues for years. It is well-documented that the workforce is aging—43% of workers are over age 55, and over half of RNs that are eligible to retire (20% of the overall workforce), plan to retire within the next three years. These impending retirements represent not only a loss of staff, but a loss of clinical and operational knowledge—and we are not educating and graduating sufficient numbers of nurses to fill the breach. Nurse graduation rates have averaged 4.4% CAGR over the past four years (with 158,000 graduates in 2021), but the retirement

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levels (pre-pandemic) almost symmetrically cancel this out at 5% (161,000 retirements in 2021). As a result, current estimates forecast a deficit of 200,000 RNs by 2025. Even when there are enough nurses to staff units, anecdotally we are hearing about confusion and frustration with newer, inexperienced (often agency) staff stepping in to fill vacancies. All of this will be exacerbated in the coming years by simultaneous growth in job demand (largest number of job openings in the next decade is projected to be in health care) and growth in the over-65 demographic (hospital utilization among adults over 65 is double that of the under-65 cohort; for the over-75 cohort, that number is 4x). In short, these are not transitory challenges, and we will need to fundamentally rethink and redesign our care delivery system to meet them.

'Top of License' technology and process enablement must mitigate the 75% of caregiver time spent on administrivia

All of the above suggests there is no imminent, silver-bullet solution—we aren't graduating enough replacement staff, we aren't doing enough to mitigate burnout and disaffection, and we have the inexorability of the aging of both the workforce and patient population. What we *can* do is attack the disproportionate percentage of workload that is unrelated to patient care. Nurses spend only 25% of the day caring for patients; the other 75% is consumed in documentation, searching for equipment, medical administration, intra- and inter-departmental communication, etc. There is rampant inefficiency in workflow—the average RN walks three miles during the course of a shift, on average standing for no more than 20 seconds at a time. Physicians spend an estimated four-plus hours per day fighting with the EHR. This kind of non-clinical administrivia contributes directly to burnout. "Top of license" practice enablement—which allows us to redesign workflow and care delivery processes—is imperative, and there are several promising technology and process solutions that can facilitate this. Stryker/Vocera, Voalte, and Halo (symplr) are platforms that can help mitigate operational inefficiencies and staff safety issues. Ambient documentation or lower-compensated scribes can reduce administrivia by up to four hours a day (e.g., Nuance, Augmedix or Suki). We will need to refine and expand team-based care protocols, enabling less expensive clinicians (e.g., NP/PAs) or non-clinician staff unburden clinicians of non-top-of-license responsibilities. We'll need more sophisticated capacity prediction and management analytics to forecast patient volume trends (e.g., TeleTracking, symplr, PerfectServe); RPA and AI to automate administrative and documentation (Olive, Health Catalyst, Nym) and patient scheduling, checking and in-take, triage, etc. (Phreesia, Vecna Healthcare); health care learning management systems (LMS) to codify and relay clinical and operational competency (Workday and HealthStream); staffing automation to optimize nurse deployment (Trusted); and refinement of virtual nursing units to scale the reach of the existing workforce. The unprecedented capital flowing to digital health solutions (described below) in the past 24 months has meaningfully advanced our ability to address these concerns.

Physicians

Physician-centricity, not consumer-centricity—will define the next decade

The complexity and impenetrability of the U.S. health system have frustrated efforts to foster greater consumer-centricity over the past decade. The post-pandemic actors best positioned to inflect TCOC, NPS and market share movement are risk-bearing PCPs—due to the near-term scarcity of PCPs (only 229,000 PCPs in the country, with 25% over the age of 65), emerging vulnerability of FFS exposed practices, and unprecedented industry-wide interest in capitalizing PCPs, and unprecedented, industry-wide interest in capitalizing PCPs.

Physician 'enablement and enfranchisement' will destabilize health systems

Companies and capital allocators who land on primary care physician enablement and enfranchisement will be well-positioned in the post-pandemic era. The combination of these risk-bearing primary care groups (e.g., Oak Street, ChenMed, Cano Health) and physician enablement companies (e.g. Aledade, agilon, Privia, etc.), will be a market-shifting and likely destabilizing force to incumbents such as FFS-based hospitals and health systems.

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This will be the case regardless of the current disenchantment in the public markets for these players. Transitory valuation and multiple instability on recently-public entities (e.g., 60–80% drops in market cap—across both center-based and enablement APC players—as of early 2022) don't change the central thesis—the enshrinement of team-based, data and analytics-enabled, risk-bearing PCPs as the central node of the health care ecosystem to lower costs, improve coordination, manage care longitudinally, and ultimately synchronize medical, behavioral, pharmaceutical and social determinants of health. This is a structural shift likely to carry through the entire decade. Depending on how long these publicly-traded APC (advanced primary care) companies are under pressure, we may see de-listing and take-private moves—including potential overtures by late-to-the-game vertically integrated payers like Aetna CVS (who are pivoting toward a PCP-centric strategy) to acquire them outright. Already we are seeing activist investors (e.g., hedge fund Third Point taking a 6.4% stake in Cano), agitating for change, which may catalyze take-private moves.

Accelerated primary care model specialization (and capitation)

Within the primary care space, there is particular dynamism around identifying the optimal clinical and business models to manage the top 1–3% most expensive poly-chronic, poly-pharmacy Medicare Advantage patients. Extensivist models have been around for years but what's new is the recognition among capital allocators of these players' significance in the market. Valuations of these companies went parabolic as PE firms set their sights beyond heavily FFS specialty practices to focus on risk-bearing primary care models (see: November 2020 51x multiple at a $4.6B valuation for Cano), and then proceeded to crash (as of May 2022 Cano hovers around $1.1B) but setting aside the mercurial investor and analyst community, firms that can offer these models pose the single greatest threat to acute care-centric incumbents like traditional health systems.

Valuations for companies that can manage low acuity, 'walking well' patients (e.g., Forward, One Medical, etc.) will be high as long as the broader equity markets are overheated, but overall will have less of an effect on the industry than those managing high-acuity patients.

Continued conventional aggregation and platform building with specialists

We will see some limited movement toward sub-capitation (e.g., in oncology) as well as continued acquisition of specialty practices, including by private equity and other capital allocators. However, these acquirers will deploy a more conventional scale building 'platform play,' and focus on rationalizing and professionalizing back-office functions for cost efficiencies. FFS-specialty practices will be subject to some of the same commodification and disintermediation trends as hospitals. The intense negative media scrutiny on PE-rollups, especially around hospital-based physicians and dermatology, is also a cautionary tale (and headwind).

Future clinician demand overstated

The post-pandemic shift in demand articulated above will have implications for the need for future clinicians. The current model of physician service delivery is inadequate. However, that doesn't automatically translate into a surge in demand for additional physicians (including the AAMC's breathless—and self-serving—projection of a 130,000+ physician shortfall in the coming years). The more prudent posture is to stop panicking about a looming shortage, and instead hasten the adoption of the clinical model delivery innovations pioneered by several of the risk-bearing groups described in this analysis.

Physician generational shift and the disappearance of independent practice

There will be a large group of late-career physicians retiring in the coming year. The secular shifts described above will be most disruptive to mid-career physicians who predicated their practices on a FFS model. Next-generation and emerging physicians will seek the perceived safe harbor of employment—far fewer will elect to stay independent. The purchasers will not be hospitals. A wider circle of new suitors—the publicly traded MCOs, the 35 BCBS plans, SPACs, and perhaps a few large, well-capitalized multi-specialty groups will predominantly be the aggregators. The net of this will be a generational reshuffling of employment relationships and physician allegiances. The pandemic, when we look back, will have been the coup de grace

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to the model of independent physician practice in the United States—as noted above, 76% of physicians are now employed. The corporatization of the American physician is largely complete.

Payers

Payers: Incontestable advantage post-pandemic

The divergence in fortunes between acute care-centric, fee-for-service dependent providers, and risk premium-holding payers will become magnified in the post-pandemic period. Much has been written about the suppression of utilization during the pandemic and projections around the elasticity of those volumes going forward. Indeed, certain projections are already suggesting that the volumes are rebounding to pre-pandemic, 2019 levels. As noted above, if you separate out Covid and Covid-adjacent admissions as of fall 2021, we are 15–20 percentage points lower than 2019 hospital inpatient volumes. The numbers will become clear over time but what is apparent now is the strengthening of the payers' strategic position versus that of the providers. Payers, as we've observed with hospitals and physicians, are not monolithic, and not all will see their strategic position improved. The true beneficiaries of the pandemic will be government-indexed payers (MA and managed Medicaid) who are vertically integrating (especially with risk-bearing primary care doctors who will disintermediate and commoditize higher-acuity, higher-cost providers and settings downstream).

The principal winners will be those that have effectively created a robust services divisions (e.g., Optum, and perhaps fast-followers like Cigna's Evernorth and Anthem's Diversified Business Group) that can capitalize on the unregulated profit streams in this sector, take advantage of the popularity of outsourcing back-office functions (RCM, IT, analytics), and continue their aggregation of non-acute clinical delivery assets. Longer-term questions remain around the sustainability of the underwriting business as a whole and the increasing government dominance of the sector (now at 58%), with the attendant headline and regulatory risk. But the key question post-pandemic will be: What do payers do with their balance sheets that have been fortified through the pandemic? An emerging answer is to acquire virtual and telemedicine capabilities, and to double down on ambulatory acquisitions.

Inevitable resurgence of purchaser cost control post-pandemic

The historic infusion of fiscal stimulus to the health care sector during the pandemic—$178B in funding and an additional $100B in loans—will not be repeated. With the impending insolvency of the Medicare Trust Fund (now estimated to hit in 2026), and perennial state budgetary crises, both Medicare and Medicaid will reassert efforts to control future spending growth. The approaching redetermination reckoning for Medicaid this fall is an important example.

Overall, the timeworn strategy of hospitals shifting government reimbursement shortfalls to the commercially-insured will not prove viable for much longer. Purchasers may have temporarily suspended price sensitivity during the pandemic, but on the whole, employers are no longer willing to tolerate prices an average 256% above Medicare for the same service, especially as health expenses are employers' second-highest cost item after employee wages ($850B+). In short, the former cross-subsidy economics of the past two decades will simply not obtain in the future.

Medicare Advantage—Continued incumbent dominance (and Blues stagnation)

MA is a juggernaut that will continue to grow unabated; 42% of the 62M Medicare-eligible beneficiaries are enrolled in an MA plan and we will reach 50% by 2025. Despite Progressive saber-rattling, I see very little probability of a U-turn in policy (the MA base rates from 2020–2022 was the highest three-year cumulative update in decades, and 2022's estimated 8% rise is the highest on record). And while the Biden Administration may not prove to be an evangelical champion to the MA industry, it is improbable we will see headwinds in the coming 2–3 years.

The real news in this space is the continued dominance of for-profit incumbents—particularly UHC (27% of overall market share and 37% capture of net-new enrollees last year) and Humana (18% of market)—and

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the near-total immobilization of the Blues. The Blues (ex-Anthem, with 6% total market share) are being comprehensively outmaneuvered—they collectively control 10% of enrollment but only captured 6% of 2021 new growth, underlining continued structural disadvantage—a vulnerability that will increase as full-risk commercial inexorably moves to ASO, and as the November 2020 antitrust settlement catalyzes a new wave of Blues M&A.

November 2020: Starting gun on BCBS consolidation

The anti-trust settlement agreed to at the end of 2020 is going to have a catalytic effect on BCBS consolidation in the coming years Expect bifurcation of the "consolidators" and "consolidated," with the total number of Blue plans collapsing by perhaps a third in the coming years. The aggregators will most likely be Anthem, Guidewell, Highmark, and Blue Shield of California (note my skepticism on HCSC as an aggregator). The lifting of restrictions of intra-Blue competition will embolden an aggressive reshaping of alliances in this group. This will have implications for the 7 publicly traded MCOs as well as the 700 smaller scale payers and will potentially unleash new, pricing competition among payers, potentially ending this prolonged counter-cyclical underwiring period.

Digital health plans capturing headlines—but not membership

The proliferation of new, digital-forward health plans (Bright, Devoted, Oscar, Alignment, etc.) has been celebrated in the press, and at least a few of these companies provided impressive preliminary capital returns (not to last, I'm afraid) for the venture capitalists backing them. Already, disillusionment is starting to set in (e.g., Oscar, with strong enrollment growth now cresting 1M covered lives, is still down 85% from its ambitious IPO pricing; and both Oscar and Bright have taken on private capital infusions this year to bolster liquidity (convertible notes and direct investments). But relative to the size and strategic positioning of MA incumbents (UHC with 7.5M lives, Humana with 5M lives), digital plan membership gains are inconsequential. In January 2022, the total aggregate enrollment of all new MCOs started since 2017 is still less than 1% of the total MA market—size and growth have been completely asymmetric between incumbents and aspirants. Provider-sponsored MA plans are particularly disadvantaged and subscale. The bottom line is that these new aspiring disrupters will likely crest at suboptimal membership numbers and eventually may be acquired by incumbents. More ominously for these new entrants, incumbents aren't holding still—several are mimicking their UI and digital strategies; Humana and UHC, as examples, have both launched digital-forward plans of their own. The correction is well underway—Wall Street's disaffection with the entire insurtech sector (market value declines of 60–80%) may portend take-privates and future acquisitions by incumbent MCOs. Bright Health, as an example, as of May 2022 trades at $1.68 a share, down from $18, with a current $1.1B valuation—with speculation they will need an additional capital infusion in 2022 to maintain operations.

Capital allocators and the impending digital health winter

Never a better time to be a capital allocator in health care?

Scanning the health care capital spectrum, we've seen hyperactivity across seed, Series A/B, growth, crossover and buyouts—collectively these categories raised $733B in fresh capital in 2021.

Let's start with the latter category. Take the private equity titans, who are now routinely raising $20–30B funds, with the biggest of them all—Blackstone—targeting an additional $150B raise in 2022 (which will vault them over $1T AUM by end of this year). Across PE, a material allocation of this dry power—11% by 2021 estimates—is going to health care: KR, Apollo, Carlyle and their ilk have been energetic, with an estimated $150B deployed in health care buyouts over 2021. This capital is no doubt drawn by the record **27% IRR** for health care over the past decade, the best of any sector returns for PE (even surpassing technology at 24%).

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Moving from PE to crossovers, hedge funds, too, have jumped headlong into the act, tapping some of their combined $4T AUM and moving opportunistically upstream to earlier stage companies—with an estimated of 70% of all VC funding rounds last year having at least one hedge fund or crossover participant. Overall, all this frenetic private market financing has created (on paper) 57 unicorns—private companies with a valuation of at least $1B.

Not just private markets—public markets busiest since 1998

All of this capital isn't being deployed altruistically—capitalists expect a return, and beyond the uninterrupted flow of funding announcements (it was not unusual in 2021 for a digital health company to raise a new round a few months—or even weeks—after a previous round) with corresponding massive step-ups in private valuations, the public markets have been busy. 2021 was a record year for health care exits: out of 1,006 IPOs and SPACs in 2021 (the busiest year since 1998 and the eve of the dot-com bust), 155 exits were in health care, with 29 specifically in healthtech. This level of health care exit volume is all the more remarkable considering the three year hiatus from 2016–2019 without a *single* digital health IPO.

It was fun while it lasted—the 499 day bubble

It is hard to pinpoint a singular moment that catalyzed this tidal wave of capital allocator activity in health care—but an argument can be made that the floodgates were officially opened on August 5, 2020, the day Teladoc announced its acquisition of Livongo for $18.8B, creating (at least for a brief moment) a $45B market cap behemoth. This was the dog whistle to the capital markets that digital health had definitively arrived. Not only did this help precipitate the wave of funding described above, but more subtly, attracted an unprecedented migration of Silicon Valley programming, technology and engineering talent—historically wary of the hyper-regulation and incumbent-domination of health care—into the industry.

The Fed sneezes and the market catches cold (or recession)

Fast forward 499 days to December 17, 2021—the date of the Federal Open Market Committee (FOMC). This, in my opinion, is defensibly the date of the end of the bubble. Reading those notes (released January 5, 2022) put the markets into a tailspin, precipitating a 17% drop in the NASDAQ in the subsequent three weeks. Let's remember that when the Fed sneezes, the public (and, eventually, private) markets catch a cold. And depending on how hard the Fed pivots, it might not be a cold it transmits, but a disease. This is a Fed that is getting religion fast—belatedly acknowledging inflation as persistent and structural, and not that much-derided 2021 word 'transitory'. It also became clear at the December 17 meeting that the Fed was unambiguously turning hawkish, projecting multiple rises in the base rate in 2022 (potentially seven 25 bps rises, later raised to 50–75 bps), and moving to not just decelerate quantitative easing—the fountainhead of the market's past two years of hyper-liquidity—but moving to quantitative tightening, and lowering the $9T fed balance sheet.

With the pulling of the Fed punch bowl, we have seen a quick correction in equity markets—especially in high-flying growth stocks—and health care companies, especially unproven digital health ones without profits (or even predictable revenue streams) are getting caught in the crossfire. As noted above, the S&P 500 is off to its worst annual start since 1939, and the NASDAQ has entered bear territory. The decline in equities is quickly infecting the private markets, first with late-stage and crossover valuations (e.g., Instacart slashing its valuation by 40% to $24B earlier this year), and inexorably hitting earlier-stage raises. Suddenly we're seeing a pivot from growth to profitability, and more protracted diligences for companies across the entire capital allocation spectrum. Let's look at VC-backed companies as an example.

The consequences of hyper-liquidity on digital health—too many, too immature, too fragmented

VC invested $37.9B into health care digital startups in 2021 alone. With this quantum of capital looking for deployment, GPs rushed to inject capital into (often) immature digital health companies (and inexperienced executives), and then rush those players to market—often in advance of sure product/market fit, or demonstrable efficacy (e.g. clinical impact, therapeutic efficacy, cost savings/revenue generation ROI, etc.). GPs were motivated to get their capital deployed—and fast—and then turn right back to LPs to raise the next round. (Tiger Global, as an example, raised $6.7B in early 2021 and is rumored to have spent it in 90 days; Tiger just

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announced they hit their hard cap of $12B in February 2022 on the next round; Andreesen raised $9B across 3 funds, etc.) Given this boom and rush, consequently too many of these digital health companies—either newly public via an IPO or the more expedited (and riskier) path via a SPAC reverse merger—were simply not ready for the quarterly 'interrogations' that come with being a public company and fumbled embarrassingly after their first analyst call (e.g., Bright HealthCare or LifeStance). The public missteps have accumulated (see: behavioral health with Cerebral, Modern and Talkspace all blundering publicly). There are now *11,000 digital health companie*s in the market—but there are simply not enough experienced or talented executive teams, compelling and unique product/company offerings, or patience in the purchaser community for this many new players.

Purchasers are confused and irritated

Indeed, the proliferation of proposed point solutions has pushed employee benefits managers past the point of frustration to exhaustion—they are loudly complaining about the free-for-all of confusing (and sometimes contradictory) offerings. The startups, recognizing the emerging problem, are adapting. We're starting to see new additions of adjacent service offerings, as well as increased M&A, so they can make stronger representations to employers of their 'one-stop shop' capabilities. These developments will help to thin the herd in terms of broad numbers of point-solutions and serve as a cap on stampeding valuations. It will also stimulate acquisitions by insurers of some of the more differentiated offerings. We will also see evolution in the payment structures, as employers encourage companies to move from PMPM to a more use-as-you-go offering, given the high percentage of unused apps and solutions by employees.

Too much capital and the VC 'Foie Gras Effect'

The ramp up in valuations is having a 'Foie Gras Effect"—these companies are being force-fed excessive amounts of capital to chase hyper-growth. One acute issue for these VC-backed digital health companies may be an increasing inaccessibility of the C-suite of health systems. The post-pandemic period threatens to be harder on health system leadership than the pandemic itself. Unless point-solution companies link their product or service to one of the higher-order anxieties of health systems, access will be an issue, and these VC-backed companies will have a hard time growing into their valuations.

Telehealth isn't the only collapsing sector

The most spectacular digital health transaction, the aforementioned Teladoc/Livongo merger, has turned into a morality tale—Teladoc's market cap has cratered from its October 2020 high of $45B to less than $6B as of May 1st,—*one third the value of what it paid for Livongo*, with leaked insider accounts of internecine Livongo/Teladoc squabbling and the unseemly quick departure (within a matter of months) of almost every top executive from the acquired company. Teladoc witnessed 40% of its market capitalization vaporize in a single day in late April 2022, after announcing a $6.7B goodwill impairment charge on its Livongo acquisition. And Teladoc is the tip of the iceberg—the roster of health care companies that went public (either by IPO or SPAC) in 2020–2021 have faltered colossally across the past year. The stock prices of 2021 healthtech companies *fell by an average of 45%* (as of December 31st) since their opening day as public companies—with the sector falling an additional 20–30% across early 2022—with the carnage democratically distributed across all sectors with digital health, including: the telemedicine sector trading at a 75% discount off of 52-week highs and in some case taken private at pennies on the dollar (SOC Telemed); insurtech players stumbling out of the gate, often after their very first quarterly report-outs (Clover, Bright, and Oscar all trading at least 75% lower than their day-one valuation, with two of the three have forced to take on private funding); biotech as a sector down 65% in the past six months (more on that below), with the VIX (ETF for Biotech) now trading below levels last seen in 2015, with 7 years of appreciation wiped away; digital therapeutic companies like Pear or Akili that went public in advance of definitive (or provable) clinical outcomes or efficacy measurements seeing their valuations collapse (e.g., Pear trading 70% lower than its opening day price); initially-hot advanced primary care plays have come back down to earth (Agilon, Oak Street and Cano all ~75% off their 52-week highs) after tempering forward guidance or running afoul of regulators; and hedge funds like Tiger Global, Coatue and Alkeon, some of the most active crossover investors, now abruptly offering markedly lower valuations and multiples to health care startups, going so far as to rescind term sheets offered as recently as December 2021.

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Hedge funds are the canary in the coal mine

Health care and technology will be the two areas most impacted by impending market corrections. In fact, one of the very reasons for the rise in valuations and multiples for healthtech startups and late-stage private companies has been the invasion of the long/short hedge funds in funding cycles for these companies. Following a disappointing post-GFC performance record in equities (juxtaposed against the overperformance of VC and PE over the same period), along with a more structural 'de-equitization' trend of fewer publicly-traded companies to trade (2020 had roughly 50% of the total number of public companies as 2000), a brigade of these players—led most famously by Tiger Global, Coatue, Alkeon and their ilk—shifted from long/short equities to investing first in crossovers and eventually moving fully upstream toward growth and early-stage players, bringing with them some of the estimated $4T allocated to this asset class, and pushing multiples and valuations skyward. We witnessed the emergence of 'high-velocity venture capital' that upended a lot of the verities and conventions of venture practices—startup founders and capital allocators watched with a mixture of disbelief and awe as these new players flooded the private market landscape with capital, essentially inviting founders to name their price, outsourcing diligence (to the extent they performed rigorous diligence at all), completing 24-hour term sheet turnarounds, etc. Tiger, with vast reserves and firepower due to its positions in JD.com, Coinbase, Roblox and Snowflake, was the most prolific VC investor of last year, with deployments in more than 300 startup deals in 2021. 2022 has seen a return to sobriety—fewer deals, longer diligences, more conservative valuations. And most notably we've seen a deceleration by hedge funds in late-stage and crossover participation, with a migration earlier upstream to Series A/B. In other words, the presence of hedge funds in venture has been an accelerant to a series of developments that would have happened inevitably as part of a correction—just slingshot forward given their ambidexterity between public/private companies.

SPACs: This will not end well

The SPAC phenomenon is inseparable from the broader quantitative easing (QE) and hyper-stimulated monetary and fiscal environments. As the Fed pulled the punch bowl and telegraphed an aggressive ratcheting up of interest rates, SPACs were disproportionately affected as one of the more speculative vehicles in this market. There is widespread disenchantment here—the blank-check market is over-saturated and recent deals have performed abysmally. SPACs raised $160B on U.S. exchanges in 2021, double the 2020 tally. 600 SPACs are now hunting for an acquisition, with another 250 or so gearing up to list shares. But now we are seeing a massive deceleration—businesses that merged with these vehicles have been among the worst affected by the general equities downturn. SPACs that completed transactions in 2021 have fallen an average of 34% against the baseline $10 a share price, with some health care stocks—most notoriously Chamath Palihapitiya-sponsored Clover Health—dropping more than 70%. SPAC shareholders are losing faith fast, with redemptions greater than 60% in December, and anecdotally upwards of 90% so far this year. This is going to be a brutal reckoning for these companies, and 2022 will see greater SEC scrutiny, continued high-percentage redemptions (forcing greater financings through PIPEs), and a general market move away from these instruments.

What's next? Down rounds, price wars and platform consolidation

The upshot of all of this hyper-liquidity infusion, followed by an abrupt about-face, will be a rough period for digital health and capital allocators. We will look back at the IRR and MOIC of 2020–2021 as a low point, as valuations are slashed and companies consolidate; these VC and PE vintages will be under water for some time. Digital health companies with insufficient runway—less than 24–36 months of cash—will be under intense pressure to conserve cash and slow their burn, all in order to avoid a dreaded 'down round.' We will see aggressive competition and a 'race to the bottom' on pricing to secure increasingly skeptical and scrutinizing clients, accelerated consolidation (especially by relatively better-capitalized 'platforms' seeking to add verticalized solutions to their horizontal platform—such as navigation companies like Included adding virtual primary care), euphemistically described strategic 'pivots' (often revealing an imperfect product/market fit or an admission of market failure), and an overall Darwinian natural selection of category winners. We will also see companies whose valuations are reduced see disaffected employees – with their options under water, and with little immediate possibility of an exit (given the closing of the IPO window and FTC/DOJ scrutiny slowing strategic acquisitions by larger publicly-traded

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companies)—considering other cash-rich offers (often by big tech) or more established, better capitalized companies. The talent wars will intensify.

Amid this frenzy, the contours of future competition (and consolidation) are becoming clear. These larger, better-capitalized players will seek to be an aggregator of these smaller, verticalized solutions, and will vie for primacy in their negotiations with employers and payers—who will, in turn, increasingly recognize them for the commodity offerings they are, further depressing pricing power. We will likely see the emergence of a handful of post-nuclear winter survivors, who have aggregated enough of the verticalized solutions that employers and payers will choose to concentrate their contracts and purchasing with these players. But overall this is going to be a rough storm, with untested leadership teams (and impatient and nervous capital allocators) scrambling for umbrellas.

Capital allocators with deployable capital will capitalize post-correction

Capital allocators that have ample dry powder, however, will be highly advantaged—with multiple and valuation compression, there are plenty of attractive investment opportunities in 2022. We will see the emergence of category winners, a winnowing of players, and a migration from go-to-market speed to demonstrating therapeutic and ROI efficacy. We will see a sharp correction in the private markets (more calibrated to the new, lower valuations in the public markets), and a resetting of the cycle. Late 2022 and 2023 will present a super-abundance of attractive investments in digital health, once the correction is complete. In fact, I predict this period will be the highest IRR and MOIC for VC/growth equity investments since the end of the GFC.

Taking a step back: Biotech as an analog—and predictor—of what's to come in digital health?

As of early May 2022, the Biotech sector is catatonic. The sector dropped 45% in 2021 and is already off to a further 300% fall in 2022. This has evaporated billions in public-market value—the XBI index (S&P Biotech exchange-traded fund) fell a further 18% in April alone, extending the biotech bear market to 14 months—and the revaluation in the private markets is already underway. The valuation surge in recent years has all but been erased in the past few months, and the sector is feeling battered. Is this a prologue of what imminently may happen in digital health? There are a concerning number of mounting similarities and points of convergence.

A quick retrospective on the Biotech collapse—and how this prefigures the same for digital health

For years, biotech was vibrant and consistently beat the market. Hundreds of companies queued to go public via IPOs and SPACs, or raised at buoyant multiples with well-capitalized VCs, with entrepreneurs and capitalists alike imagining the next Amgen or Moderna. 2020 was the apex, as panicked investors globally rotated cash from cyclical, pandemic-affected sectors to biotech. Biotech was ascendant. Until today.

The IPO window has slammed shut. The XBI as noted above is down from a May 2021 high of 174 down to 76 (May1, 2022). SPACs have been discredited and sidelined (with 600 still looking for targets, and an additional 178 looking to complete their already-announced-but-still-incomplete mergers). And as the infection starts in the public markets, it quickly spreads to the private markets—VCs slower to allocate (at nosebleed valuations), a murmuring of an imminent 'mark to market' revaluations, and a chilled fundraising environment. Anxiety among capital allocators and startups alike is palpable…made the more acute because we don't know where the bottom is. Further amplifying the heartache is the lack of an overt trigger or catalyst to cause the correction. Yes, there was accelerated selling in Q4 2021 in anticipation of higher tax rates; certain funds wanted to pin down gains on the year; there was heighted short seller activity on some of the more Icarus-like biotech stocks; a spate of hedge funds were overextended and needed to draw back; but overall—like in digital health—the correction seems to be inextricably tied to macros—tightening money supply, too many overexuberant and impatient companies going public with too little data or therapeutic efficacy proof, etc.

Lots of parallels with the coming digital health correction

And there were more signs that the market was overheated when biotechs without any drug candidates in the clinic—or even years-long pipelines—went public. Too many undifferentiated companies, too many fully-scaled (inexperienced and underqualified) executive teams of CEOs, CMOs, HR heads for a company with a

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product that is years away, going public too early in their maturity; too many 'platforms;' too much competition… which will lead to natural selection of fewer companies, more consolidation and M&A (perhaps along the lines of General Atlantic-backed Centessa, an aggregation of ten individual companies with standardized infrastructure and deconstructed R&D to support a portfolio of single-asset companies each pursuing their own molecules)—in other words, a culling of the herd.

Winner take all: Rise of the incumbents

As an interesting paradox and comparison to the above sections on the innovation in the venture, growth equity and PE spaces, I believe we will see a strong countervailing trend: post-pandemic, the biggest firms in the economy will triumph. Even with the recent drawdown in large-cap technology stocks, the five largest companies in the S&P 500—Apple, Microsoft, Amazon, Tesla and Alphabet—collectively represent more than 23% of the total market capitalization of the entire index. In other words, innovation is conventionally considered a democratizer, but that seems not to be borne out by the data over the past two decades. Big companies are getting bigger and there's a lot of dynamism at venture and growth phases; it's the middle phase companies that are getting squeezed.

06 Care delivery shifts

Home as an epicenter of care—hype justified, but timing will be more gradual

One of the most enduring impacts of the pandemic will be the mainstreaming of home-based modalities of care. While this shift was certainly developing pre-pandemic, regulatory accommodations, capitalization, and patient disinclination to visit higher-acuity sites of care have all accelerated this trend. But for all the breathlessness, there is a worrisome over-optimism about the coming speed of the transition—this will be more complex, and more protracted, then advocates are allowing for. Overall, we will continue to see a 'natural selection' against institution-based post-acute (LTACH, SNF, IRF) and an acceleration towards non-institutional models—including hospital at home, ED and SNF delivery at home, home infusion, home dialysis, home labs, etc.—but we ought to be a bit more circumspect on our expectations around timing.

The capital markets, of course, aren't waiting passively. There will undoubtedly be multiple compression in the coming months, but overall, however, this is a 'right side of history' shift; those companies (both incumbents and disrupters) that fundamentally enable the home as a central site of care will be rewarded.

The eventual wave of hospice and home care IPOs

As the post-pandemic period illustrates and confirms, the structural shift to the home as an epicenter of care and the capital flowing to the sector will only increase and accelerate. Consequently, we will begin to see a migration of private to public companies, as the multiples commanded by these companies become unattractive to private investors while the public markets are willing to pay a "liquidity premium" for these assets. For now, with the equity markets correcting, companies that were gearing up for an IPO are pausing their floatation plans—but when energy returns to the IPO space these players will queue up.

Atlanta-based Aveanna Healthcare, a pediatric home care provider, is illustrative—they filed a $100M IPO this past April, after charting a strategic shift to add adult home health and hospice. Likely fast followers to the public markets will be Kentucky-based BrightSpring and Dallas-based AccentCare. The multiples for BrightSpring and AccentCare will likely be comparable to the current public companies (in the low to mid 30's, at least pre-correction). PE is (understandably) balking at these kinds of parabolic numbers and therefore an IPO is the more probable path. And if these two do indeed exit, we will likely see an emulation of the play by a group of larger regional players as well, including Help at Home (backed by Vistria), or Bayada Home Health Care (based in New Jersey).

Deconstructing the recent market activity in behavioral care

Behavioral health is the area where telehealth will see the most profound (and sustained) shift in the next several years. We have seen a quick embrace of digital and virtual modalities (e.g. AI-enabled CBT; synchonous/

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asyncronous communication; ‘gamification’, etc.) on the part of behavioral health consumers, reflected by high utilization, engagement and retention scores. A combination of digital modalities and virtual care are gaining credibility and validation as established protocols of care, and while several experts have expressed reservations about the efficacy of these new pathways, the consumer market hasn’t waited—users are voting with their feet and the uptake is dramatic.

Vaulting valuations already into correction territory

All of this has translated into billions of dollars in valuations—SoftBank-backed Cerebral ($4.8B valuation), Lyra ($4.6B), Ginger/Headspace merging in August 2021 with a $3B valuation, Noom raising $540M in funding last May, etc: in total, global funding to mental health tech startups reached $5.5 billion in 2021, jumping 139% from $2.3 billion in 2020. The majority of 2021 deals (68%) were early-stage—indicating room for further growth in the mental health tech space. This infusion of capital, however, has proceeded in advance of credible or peer-reviewed efficacy or therapeutic data—and disillusionment has started to set in. Already we are seeing more temperate valuations, collapsing publicly-traded behavioral company valuations (especially companies that went public via a SPAC like Talkspace, whose valuation has disintegrated from $1.4B down to $215M as of May 2022), to rumors of market saturation (Teladoc said its behavioral client D2C acquisition costs were up marketedly due to aggressive competition), and intimations of market abuse (WSJ reporting that Cerebral and Done were over-liberally prescribing Adderall and other controlled substances). The high-velocity go-to-market emphasis is slowly giving way to a more considered evaluation of efficacy and impact, portending a bumpy period ahead for these companies.

Irrespective of market volatility, overall demand is intensifying—five ecological factors that make this an historic moment for behavioral health

Setting aside the volatility in the public and private markets for behavioral health, it is inarguable that we are in an historic period for this sector. I submit there are five environmental factors that combine to make this a discontinuous moment for this market: First, the ‘pandemic after the pandemic’—Covid-19 has indisputably escalated demand for mental health services; second, the U.S. ‘zeitgeist’ is embracing more openness and transparency with mental health—“need” is enthusiastically translating to “demand”; third, the structural scarcity and geographic maldistribution of behavioral health providers (as a nation, we are singularly unprepared to respond to this increased demand and societal acceptance with conventional treatment modalities alone); fourth, consumers may actually prefer the new delivery modalities over the old—perhaps the most compelling factor to consider is that consumers are embracing the new technological modalities of providing behavioral care not as ‘tolerated’ substitutions for the original service, but as improvements upon the traditional model of meeting face-to-face with a therapist, psychologist or psychiatrist; fifth, the embrace of these new modalities will, paradoxically, make the shortage of behavioral specialists worse in the short term—the rising popularity of these non-insurance teletherapy platforms may indeed be exacerbating the already-acute shortage of therapists, psychologists and psychiatrists.

Urgent Care, the ‘woodwork effect,’ and what this means for telehealth

Seemingly forgotten amid the pandemic is the age-old question: Do lower-cost modalities and sites-of-care stimulate greater demand and utilization, or is the much-vaunted “substitution effect” in play? The April 2021 volume of *Health Affairs* attempted to deconstruct this question, this time around urgent care centers. Do these (estimated) 6,000–8,000 centers nationally substitute for low-acuity and inappropriate ED visits and therefore save the system money? Or do they stimulate greater demand because of lower cost and wide accessibility? It seems the answer is emphatically the latter—on average, urgent care centers stimulate *37 additional UCC visits for every reduction of one lower-acuity ED visit*. Even though each lower-acuity ED visit costs $1,646 (almost 10x the average UCC visit cost), the 37:1 ratio in increased UCC utilization more than evaporates any savings—to the tune of $6,327 increase in UCC costs. This news is highly inconvenient for the UCC industry. Not only does this have implications for how we think about urgent care centers in a broader context of FFS and FFV payment frameworks, but it also likely has predictive implications for the data and analysis we await on telehealth utilization—substitutive or stimulative?

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Aspiring disrupters—big tech and retail

The top five tech companies in the U.S. economy are juggernauts; the combined market valuation of Apple, Alphabet, Microsoft, Amazon, and Facebook was over $10T as of early 2022; and even with the dramatic correction in big tech stocks across the first four months of this year, they still collectively weigh in over $8T. In fact, if these five companies were a stand-alone country—even with their diminished valuation at the moment—heir market cap would rank as the third largest GDP in the world—after China and larger than Japan. Societally, there seems to be an inexorability about how and when (not if) these multi-trillion dollar valuation companies will penetrate into every sector in the economy, leaving behind a trail of disintermediated or outmaneuvered incumbents in retail, grocery, automotive...and health care.

But while the revolution has been breathlessly predicted for years (if not decades), 2021 was far from a banner year for tech giants in health care: from the messy dissolution of Haven (the ill-fated joint venture among Amazon, JPM, and Berkshire Hathaway) in January to the Wall Street Journal's (rather embarrassing) deconstruction of Apple's struggles in health care and Google's internal restructuring and the ultimate departure of David Feinberg to Cerner in June, Alphabet's Verily and its constant internecine warfare with Google Health, etc.. These stand on the shoulders of past failures; let's not forget Google and Microsoft's efforts to reconceptualize personal health records in 2012 and 2019, respectively, which were subsequently—and quietly—deaccessioned. These are just a few (public) reverses.

Why big tech has failed to revolutionize health care

There certainly hasn't been a dearth of effort or activity on this front—and the pandemic, hyper-driving digital adoption and virtualization of care, has been an accelerant. Whether it is providing capital to aspirant tech startups (U.S. digital health funding reached $37.9B in 2021), designing and mass-selling wearables (Apple Watch stacking capabilities, including walking steadiness in July 2021, or Google's January 2021 $2.1bB acquisition of Fitbit), or moving health care data to the cloud (Microsoft vs. Google vs. Amazon vs. Oracle), threatening to upend the pharmacy delivery and PBM sectors (Amazon...weekly), the tech companies are relentlessly probing and searching for their beachhead. But while each of these companies is pursuing individualized ends, there are some emerging commonalities for why they have so far failed: first is the byzantine internal complexity of these companies; second is the byzantine external complexity of the health care industry.

Internal complexity. Most tech giants are traditionally organized around tech products. Because health care investments and strategies don't necessarily cohere neatly around one 'device' or product, they can messily overlap with similar or competing projects, with different bailiwicks controlling different elements. Poor companywide coordination can lead to balkanized and tribalistic division battles. And the complexities are compounded when multiple of these companies seek to partner (e.g., Haven and Amazon Care, Verily and Google Health). Arguably, the bigger risk is that the extracurricular adventuring and investing in health care can complicate or endanger the core profit engine.

External complexity. When a tech giant launches one of these bold, ambitious, 'change the health care industry' ventures, out of necessity the effort resides within the overall enterprise as a division or a subsidiary. They are effectively 'intrapreneurial' efforts—but they still compete for scarce company resources. They are also on an (often unreasonable) timetable to produce and prove results and dislocated or deprioritized when the core business runs into trouble. While the CEO or senior team may be personally passionate about or committed to the incubated health venture, winning in health care is not an existential priority for the company. Wall Street's quarterly interrogation cycle doesn't help these players, either. Health care is disproportionately controlled by a small number of individuals and these relationships take time to foster and cultivate—this doesn't always match up with a 90-day reporting cycle for analysts.

Still, it would be dangerous to underestimate these protean, apex predator corporations. We will see

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Microsoft with the most defensible health care strategy, with continued success in purveying cloud services to the industry, followed by a gradual and focused weaponization of its Nuance acquisition. Google will continue to sign splashy partnerships with progressive health systems to analyze vast troves of data but will be able to go no faster than the societal sensibilities around data privacy will allow. Amazon will continue to relentlessly prototype solutions for its own employees and then opportunistically seek to commercialize those internal solutions. M&A will be impeded by a muscular and ideologically-driven FTC and DOJ. Overall, serious encroachment of Big Tech into health care will take much longer, and be much more incremental, than the hyperventilating press coverage is currently allowing.

Walmart's continuing ambivalence in health care

For years, pundits and insiders have speculated loudly about Walmart's ultimate ambitions in health care. Would the colossus—with $572B in revenue, 240M weekly store visits across 10,500 stores and clubs, and 2.3M associates—expand upon its outstandingly successful collaboration with Humana in PDP and acquire the insurer? Does Walmart's application for a brokerage license portend a sector-wide disintermediation of incumbents? And most breathlessly, what will Walmart do to reconceptualize primary care?

It seems, for the moment, that Walmart's primary health care strategy will be to react to whatever play Amazon makes. The past two years have been bumpy for Walmart's health care agenda: around a dozen of the senior most health care team departed across 2020 and 2021, with U.S. CEO Greg Foran (who championed and funded the strategy) and president of Walmart Health Sean Slovenski (tasked with deployment) the two most conspicuous departures. Walmart's ambitious clinic rollout plan to expand from 20 centers to 1,000 by 2024 and as many as 4,000 by 2029 seemed to be strategically deprioritized in favor of a broader e-commerce overhaul and other tech initiatives to respond to Amazon. Walmart's May 2021 acquisition of MeMD was seen as a direct response to Amazon's March 2021 rollout of virtual primary care services. (For the moment, both strategies seem to be working: Walmart's February 2022 market cap hovers in the neighborhood of $380B, and its health business was the fastest-growing comp business in Q4 2021, according to its February 2022 earnings call). For now, however, we can conclude Walmart is at least reconsidering its health care approach, and we seem to have another example of a non-traditional, cross-sector disrupter who is pausing its attack in the face of health care's byzantine complexity.

Looking beyond Walmart to the broader retailer sector, this does raise questions in my mind about the overall viability of the retailer's clinic strategies, with CVS' plan to open 1500 'Health Hubs' by end of 2021, and Walgreen's much-analyzed partnership with VilliageMD to build 1,000 clinics.

Covid-19
The 'starter pandemic'

The mRNA vaccine—sequenced within 48 hours of studying the pathogen's genome—is an historic human achievement and should be celebrated as such. The sobering reality is that this is likely the first of multiple zoonotic pathogens to come; society will require absolute and unprecedented vigilance moving forward. With rampant urbanization, relentless encroachment on animal habitats, industrialization and rising prosperity leading to greater meat consumption (with unsanitary and unsafe factories to meet demand)—the transmission of diseases from animals to human will intensify. Covid-19 has provided a preview of the forthcoming battles.

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