

The Six Stages of Health Tech Grief

A Crash Course on How US Healthcare Works



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Introduction

You know in horror movies when characters go into certain rooms and you're yelling at the screen cause you know what's about to happen? The music starts picking up and you close your eyes, sobbing uncontrollably.

How different would those movies be if they could hear you yelling through the screen?

This is how I feel about people new to healthcare. This guide is me yelling through the screen when you're about to go check out those creepy looking woods on a dark stormy day.

My name is [Nikhil](#). Through the course of my research at [CB Insights](#), my work at [TrialSpark](#), and now my time building [Out-Of-Pocket](#), I've seen many startup pitches, analyzed hundreds of healthcare companies, and [invested](#) in several healthcare startups.

This guide outlines the path followed by 90% of new health tech entrepreneurs I talk to and turning their experiences into public knowledge meant to be shared. I'm trying to give you a heads up on the challenges that come from building a company in healthcare so you can avoid the common traps and prepare yourself for the inevitable speed bumps. Almost every person new to healthcare goes through this journey at some point, which I call "The Six Stages Of Health Tech Grief."

The Six Stages of Health Tech Grief



When this “stages of grief” meme made the rounds, people assumed I was scoffing at the hubris of tech people entering healthcare. That’s not true at all. I’m actually doing the opposite.

These six stages are common ideas that entrepreneurs think through as they’re figuring out how to fix the healthcare system. Going through it means that person is asking the correct questions. If we want to fix the system, we need people that are constantly asking why things are the way they are.

In this guide, I’ll go through each phase and share examples of companies and obstacles that you might see in a given stage, and strategies to be successful at that stage. If you find this guide helpful, and want more healthcare analysis (or just the memes), check out the rest of the [Out-Of-Pocket](#) posts and newsletter.

Tables of Contents

Stage 1: “We Should Pay For Healthy Behaviors”

Stage 2: “We Need To Build A New EMR For Patients”

Stage 3: “Let’s Start With Self-Insured Employers”

Stage 4: “There Are Too Many Entrenched Interests, It’s Not Fixable”

Stage 5: “Let’s Make This One Process 5% More Efficient”

Stage 6: “I Guess We’re A Services Business”



STAGE 1

We Should Pay People For Healthy Behaviors

SUMMARY

- Because there are currently no entities in healthcare that care about long-term health, there's low willingness to pay from both individuals and businesses for programs that promote regular, healthy behaviors.
- The exception is healthcare events that only have to happen once, or happen within a time window (e.g. while you're taking a course of medication).
- The cost-effectiveness of paying people to do healthy things is mixed.

The Six Stages of Health Tech Grief



I don't think anyone disagrees that many of the health issues that plague our country are generally an amalgamation of unhealthy behaviors. Poor eating habits, sleep deprivation, stress, etc.

Wouldn't it make sense to pay people small amounts today to make healthier choices so we spend less as a system in the long-term?



There are two parts of this to address.

First: who would pay for something like this? The reflexive answer would be an insurance company or other payer. But insurance companies don't actually care about long-term health outcomes, since you're going to have to switch your insurance before they reap the benefits of your health actions. When you switch jobs, you're forced to switch insurance plans ([a uniquely US problem](#)), so the long-term costs aren't their issue. Considering people are [switching](#) jobs ~4 years (with that tenure decreasing over time), this is a problem. That means nudging healthy, everyday behaviors to prevent those long-term health issues also isn't a priority for those health insurers. In many cases, Medicare ends up footing the bill when you turn 65 and chronic disease complications start setting in.

The reality is that unless you can lower the cost on a very specific health issue AND you can attribute your specific solution to improving the bottom line by \$X—like directly preventing an expensive hospital admission or convincing a patient to get a test, procedure, etc. done in a cheaper setting—paying for healthy behaviors isn't a very attractive proposition.

Attribution is one of the most difficult parts. You need a tight feedback loop and an understood relationship between a behavior and an outcome. That's why some areas where there is a willingness to pay include:

- **Anything diabetes management** – The biomarker (blood sugar) is easy to measure, reacts very quickly to lifestyle changes, and is attributable to several diabetes-related complications if it doesn't work.
- **Medication adherence for readmission prone disease areas** – Congestive heart failure, COPD/Asthma, etc. require you to pick up your meds and actually take them. Many patients don't do this because they "feel fine" and forget, or they can't pay, which leads to more acute issues down the line.
- **Screening for at-risk patients** – For people that are at-risk of developing a disease that would be much more expensive if caught later, payers will give incentives for regular screening. Gift cards for mammographies to screen for breast cancer is one example.

Screening(s) Completed: (See next page for description)	2019 Screening date
☐ Annual Wellness Visit - \$25 gift card	
☐ Bone Mineral Density (BMD) Test/DEXA scan - \$50 gift card	
☐ Breast Cancer Screening (Mammogram) - \$50 gift card	
☐ Colorectal Cancer Screening - Colonoscopy or Sigmoidoscopy - \$50 gift card	
☐ Colorectal Cancer Screening - FOBT kit or Stool DNA test - \$15 gift card	
☐ Diabetic Eye Exam (Recommended for diabetics) - \$25 gift card	

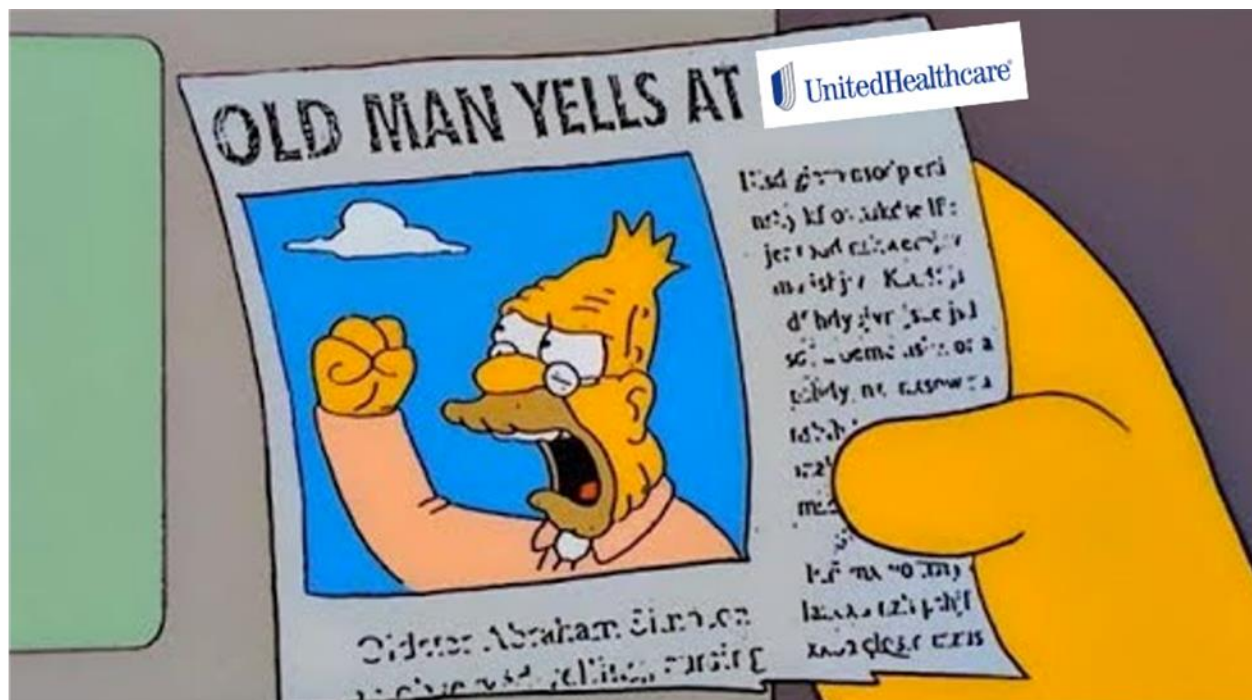
- **Post-surgery** – Hospitals get penalized if patients are readmitted [for certain diseases](#). Making sure patients follow certain protocols if they have one of these diseases is financially important for the hospital. Unsurprisingly, targeting this readmission program is [a common case study](#) for adherence companies.
- **Getting care in a cheaper setting** – Companies like [SmartShopper](#) will directly pay patients if they choose to get things like MRIs or infusions done in freestanding clinics, which can be considerably cheaper than hospitals.

Many of these “pay to do healthy things” initiatives target people on Medicare Advantage plans, not only because they tend to have a lot of the issues I stated above, but also because Medicare Advantage is one of the few places where consumers actually shop themselves, since it’s independent of their employers. If your plan doesn’t have attractive benefits, people will actually switch off.

In 2018, UnitedHealth decided [to stop covering SilverSneakers](#), a fitness program for seniors. This is not a group you want to get pissed off.

“ Graves, who works out four to five days a week and has a UnitedHealthcare Medigap policy, decided to seek coverage elsewhere after the company raised his policy’s rates and eliminated SilverSneakers in California. He has signed up for a new policy with Blue Shield of California...

Ray Liss, who retired seven years ago, just changed over from UnitedHealthcare to a Humana Medicare supplemental policy with his wife. The loss of SilverSneakers precipitated the switch...



Even after you figure out who will actually pay, the second question to answer is whether your solution measurably improves outcomes. In the article about SilverSneakers, UnitedHealthcare said <10% of people even used the service.

The evidence is mixed on whether these incentive programs work. So far, data suggests that incentives for one-time actions like getting a screening done or signing up for a prevention program [are pretty effective](#). Longer term behaviors like medication adherence or keeping up with a chronic disease management program [don't show much consistency](#).

It's also hard to figure out if these programs actually reduce cost to the system because they can take decades to study. There are many other variables that will impact these patients during that period—like fitness apps and cardio health—and it's difficult to tell if those same patients would have done those behaviors anyway without incentives.

For example, Medicaid operates the [Medicaid Incentives For Prevention Of Chronic Disease](#) (or the unpronounceable MIPCD) program, where 10 states set up incentive programs for Medicaid recipients to implement healthy behaviors like smoking cessation, diabetes prevention, diabetes management, blood pressure management, etc. [The report](#) on its cost-effectiveness is an interesting read. Generally, the findings suggest that there are short-term benefits, like getting Medicaid beneficiaries to enroll in services or programs, yet unclear cost savings.

Table 9-1
Short- and long-term benefits and costs of MIPCD programs

Program focus	Benefits			Costs		
	Incentives increase use of preventive services (Source: MIPCD State MDS)	Incentives improve short-term health outcomes (Source: State evaluations)	Incentives prevent chronic diseases (Source: authors' interpretation)	Incentives increase program costs (Source: MIPCD State MDS, Administrative Costs Form)	Incentives reduce other Medicaid costs in short-term (Source: claims analysis)	Incentives reduce other Medicaid costs in long-term (Source: authors' interpretation of impact on chronic diseases)
Diabetes prevention	Yes	Questionable	Unlikely	Yes	Possibly	Unlikely
Smoking	Yes	Yes	Probable	Yes	No effect	Possible
Blood pressure	No	No	No	Yes	No effect	No
Diabetes management	No	No	No	Yes	No effect	No
Other (Texas)	Yes	Yes	Uncertain	Yes	No effect	Uncertain

But maybe these programs fail because of the incentive design itself. Giving cash to patients if they do something is a pretty blunt tool – more likely than not, each behavior you want to induce will require a unique incentive scheme. [This paper](#) goes through some interesting examples derived from behavioral economics, e.g. for patients with substance use disorders, they increased medication compliance by having the value of the reward steadily increase over time and reset to 0 if they failed.

Paying patients to do healthy things might work in specific areas where you can prove behavior changes with a short-term return on investment. I don't think the idea of giving patients cash for healthy behaviors is a bad idea – but it has to be extremely targeted to a specific behavior. I also don't think this is a standalone business, and is likely a feature in a larger risk-bearing entity like an insurer.

Also, honestly, this is probably a better pitch to life insurance than healthcare.

STAGE 2

We Need To Build A New EMR for Patients

SUMMARY

- EMRs and providers have no business incentive to make their data portable or accessible. Additionally, EMRs are designed for the purpose of billing, not to improve patient care.
- Companies that want to build new EMRs generally try one of a few different approaches: building a personal health record, creating a new EMR for providers, or buying and repurposing an existing EMR. Each approach has pros and cons.
- There are new opportunities opening up to use healthcare data inside and outside of the EMR thanks to a combination of new legislation requiring data interoperability, the adoption of new payment models requiring less documentation for billing, and more data being created outside of hospital settings.

The Six Stages of Health Tech Grief



Eventually, everyone who starts building a healthcare company hits the same problem. All the valuable data is locked in a disparate network of Electronic Medical Records (EMR) and it's hard to get that data out. *What we need is a new, and better EMR.*



For a little bit of context, in 2009 the [HITECH Act](#) gave hospitals more than \$35B in subsidies to shift their paper health records to digital ones. This [increased the penetration of EMRs significantly](#), and health insurers were actually [providing](#) some of the money to help hospitals make that shift. Because EMRs were a core part of how hospitals knew what to charge payers, their function was mostly focused on documenting the line items of things to charge and assigning billing codes for everything. EMRs are not broken – they do the exact job that they were built for, which is billing.

And since this was really before widespread understanding of APIs, there were no requirements about how the data should be standardized or how it should be easy to take out of a health system. This led to a land grab of market share by the existing EMRs and no interoperability between the systems, creating the vast land of data silos you see today.

The other part of this that's worth saying: despite what hospitals may say about interoperability and data sharing, they do not want patients to be able

to easily take their records to a new hospital, because it would cause “patient leakage.” It is not their incentive to let this data out of the hospital. However, the physicians that use the EMRs for the most part hate how clunky they are and how much time they have to spend in them.



So many health tech entrepreneurs see that end users are unsatisfied with EMRs as a product (patients and physicians) and that applications are hamstrung by the lack of access to data and functionality within the EMRs. This usually leads to one of a few different approaches to building a new EMR:

EMR Approach 1: We are going to make a personal health record directly used by patients

People in this camp usually discover that most people actually aren't demanding access to their own health records, because they don't use the health system that much. Plus, the average person doesn't want to take the time to input and structure the data. This makes it difficult to find a business model since patients won't pay for this service themselves as infrequent users.

Google tried building a personal health record with Google Health way back in the day, and [this post-mortem](#) outlines some of the issues the company faced. This included:

- It was tough for patients to input the data. It was time consuming to constantly input the data, the interface was clunky, and it was difficult for them to assess what information was actually important (surprisingly few patients wanted to go through 4+ years of med school just to learn to use Google Health). Very few patients actually found the personal health record useful or solving a specific pain point
- Providers weren't included in the data, so it was hard to connect the personal health record with the hospital record
- People had privacy and trust issues understanding how Google would use the data
- There was no clear business model for Google and it didn't get the internal resources it needed to market it

Today, personal health records are valuable for motivated patients with complex care in multiple settings. But, for a business to exist here, the (de-identified) data needs to be valuable to someone willing to pay for it. Currently, buyers tend to be life sciences companies that are looking to

improve clinical trial recruiting, understand how a disease naturally progresses over time, and create new types of clinical trial designs that use real-world data. Examples of companies in this area are [Ciitizen](#) (cancer) and [RDMD](#) (rare disease), and I would imagine there's interest in the neurodegenerative and autoimmune side of things.

But with most other patients, you're in for a tough time if you want them to use your personal health record. Getting patients to download an app, get their existing records from multiple places, update their records, etc. is a tough sell, if they're not regular users of the healthcare system. I basically only download new apps now because of peer pressure from my other tech friends.

EMR Approach 2: We are going to make a new health record for doctors that they actually enjoy using

People in this camp end up discovering how risk-averse hospitals/physicians are as purchasers. No one wants to learn how to use a new EMR after learning their current one. The downside risk of switching to a no-name EMR is very high, since you're dealing with patient lives and patient data. The process of switching over to a new EMR is very intensive and takes years.

Plus, it's important to recognize the main use of an EMR is NOT to be a good medical record – it's being good at billing for services. Good UX is not the reason people buy the tool. The purchasers (hospital administrators) and the users (physicians) are different people.

EMR Approach 3: We will buy an existing EMR and re-develop/repurpose it.

This became a popular pitch after Flatiron Health bought Altos Solutions for \$100M in 2014 and combined it with their analytics + data structuring process to eventually sell to Roche for ~\$2B in 2018. While not impossible, this is really expensive and IMO somewhat unique to the oncology space due to the prevalence of independent cancer centers, high pharma interest in oncology, and a reasonably priced option to buy with decent market share. [Modernizing](#)

[Medicine](#) is another company that used this strategy, acquiring gMed to move deeper into the gastroenterology field.

But honestly, if you can find someone to write you a check big enough to try this strategy, go for it. And also give me a cut or something.

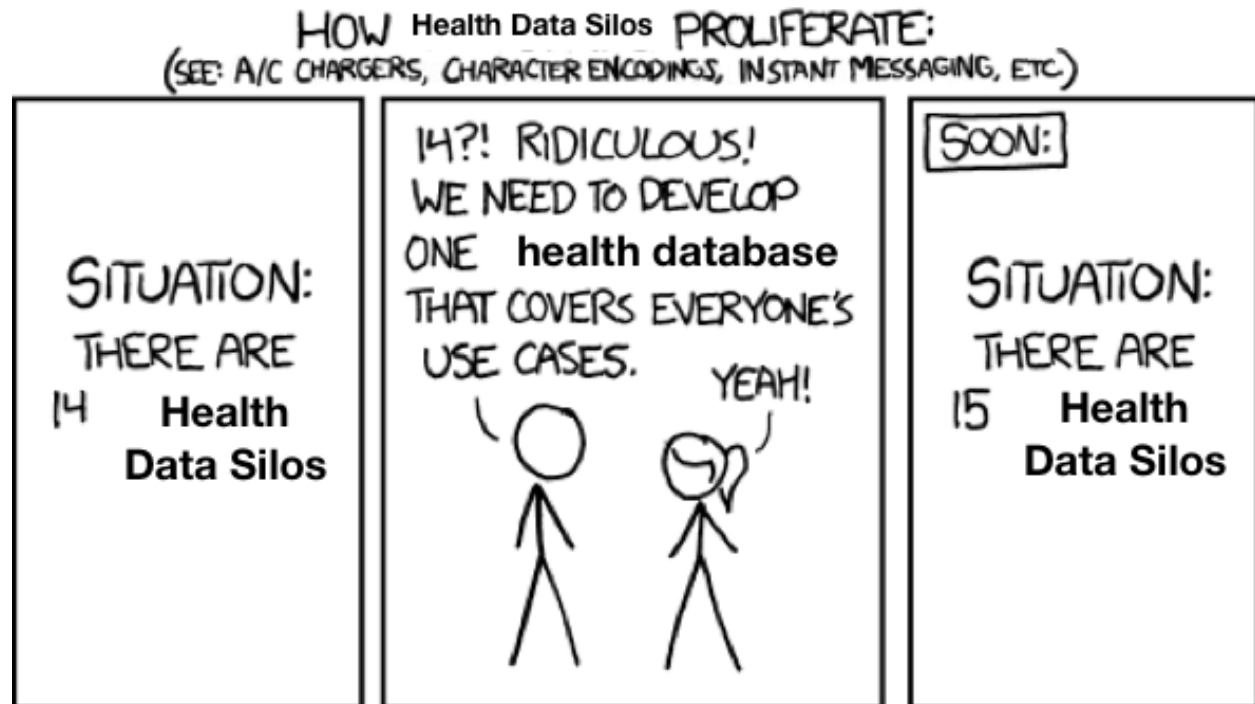
Another strategy that's akin to this is buying or partnering with registries, which are usually run by specialty societies.

EXAMPLE

An example is [DataDerm](#) from the American Academy of Dermatology Association. A dermatologist will connect data from their EHR to a registry that has data from other dermatologists, which allows each dermatologist to see how their practice compares to other, similar practices. Registries also allow practices to take part in quality improvement programs like [MIPs](#), take part in clinical trials that require real-world data, and participate in more stuff related to compliance and reimbursement.

Companies like [Verana Health](#) and [Corrona](#) are taking this structured registry data and using it in new areas like life sciences. Registries are a viable approach to building a business, but the data is still coming in from EMRs, so you're not really replacing the EMR so much as finding new use cases for data.

EMR Approach 4: We will connect data from all the existing EMRs into a single, structured place



This is doable but it's a slog. You have to go to each provider one-by one, get an agreement, integrate with them, and then standardize/structure data. Then, one of three things happens:

- You can use and give de-identified patient data to third-parties. This data is useful when it comes to understanding the individual patient journey for X disease, identifying providers that see certain kinds of patients, or other types of B2B analyses where it's useful to analyze a "type" of patient. However, this data isn't useful if you actually want to do something that requires contacting patients directly or get patients involved in their health record.
- You can use identifiable data if you outline a specific use case with a hospital in a Business Associate Agreement (BAA). This is a bespoke agreement with each individual hospital, so it is difficult to scale. While this is good if you want to build something specifically that benefits your company and the hospital, you can't build a platform for other

third-parties to access the data that you've received or combine datasets (usually).

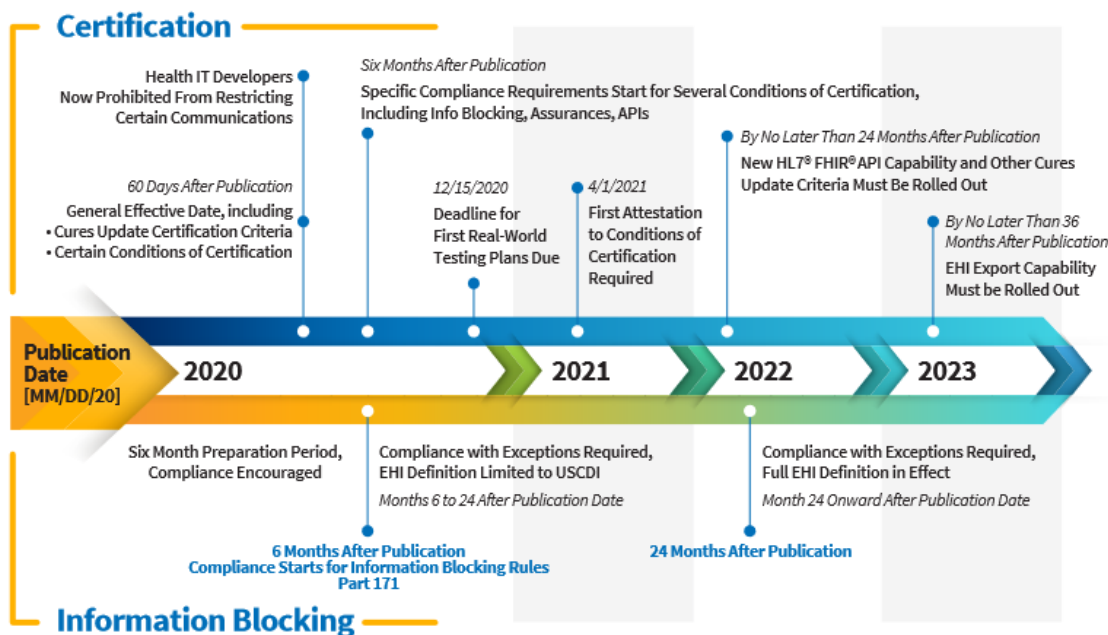
- You get patients to give you consent to use their identifiable data for third-parties, but this requires them to actually go through the process of giving you consent. Usually this requires logging into each EMR where they received care, but how many patients even set up an account with their EMR, let alone remember the username and password? This actually might be different post-COVID, where many patients set up accounts with an EMR to be able to see their COVID test results.

This strategy sounds good in theory but is extremely slow and takes a very long time to execute—even for companies like Apple that have built-in distribution with their Apple Health app already installed in millions of phones. Apple allows users to pull their health records into the Apple Health app by logging into their EMR portal with each hospital that Apple is integrated with. After 2–3 years, Apple is still only integrated with [474 healthcare institutions](#). This doesn't include the product development time leading up to the announcement. And they're Apple, not your tiny startup with no vowels.

Record Breaking

I might sound like a hater, but I am actually optimistic for a new EMR to emerge and am hopeful that it'll happen in the next decade. Some reasons:

- ONC/HHS [have established the final rules](#) and timelines for health data to be available via API in a standardized format (only took like 12 years, sigh healthcare). Though the timelines are probably messed up due to COVID, healthcare data should become much more readily accessible by 2023. This doesn't mean we're in the clear. Even after this happens, I think we'll discover a lot of the data in these EMRs is actually designed for billing and not TRUE patient records. But it'll be a good starting point, and we'll likely see layers built on top of this.



EHI = Electronic Health Information USCDI = United States Core Data for Interoperability

- My hunch is that many new care models focusing on customer experience may build new EMRs that do actually act as platforms. For example, One Medical built their own EMR since it was critical to the care experience. I also think the wave of specialty-specific or demographic-specific care models will build versions of their own EMRs for third-party applications to build on top of (analytics companies, clinical trial recruitment services, APIs to order different tests and services, etc.).
- Currently, EMRs are built for a fee-for-service environment. I'm bullish on the entire payment landscape changing, either to one that places a heavier emphasis on patients paying/choosing options, and/or one that includes government-run payers or providers. A change in healthcare payment will radically change what's needed in a medical record. You see some examples of this in the cash pay segment where companies like Ro and Elation have built new types of EMRs for cash pay provider

transactions. You also see these examples with primary care companies focused on Medicare Advantage patients – companies like lora have built their own EMR since they don't need to bill for every single patient encounter (and are usually paid per patient).

- The amount of data that patients are generating outside of the hospitals via wearables, at-home diagnostics, etc. is likely to grow exponentially post-COVID, as care is forcibly being pushed into home settings. This will increase the demand to have a patient-hub, where patients can view their data regularly and have it incorporated in their records. Current EMRs definitely can't do that well, and it's an open opportunity for the middle layers between the hospital EMR and wearables, like Apple Health. It's also an open opportunity for companies building consumer-facing health applications that want to pull in data from hospitals, which will be standardized in a machine-readable format and (theoretically) will be much easier to access.
- I'm still interested in middle-ware documentation companies (using software like voice-to-text transcription) as a tool to potentially build their own patient record. Tools like Notable Health, Nuance, etc. help frontline staff document parts of a patient's visit into the EMR through voice dictation, as well as new machine learning software tools that parse out a physician note into the relevant billing codes (e.g. AWS Comprehend Medical). By stringing these tools together, you could potentially create a new interface focused on managing the health of patients, and use the existing EMR exclusively for billing purposes.

All-in-all, I don't think what we currently call "Electronic Medical Records" are records at all – they are systems of billing. There's room to actually build a new TRUE record. But don't just "build an app a patient can input their health data into." There needs to be some thought in the type of patient being targeted, the person paying for the record, and how the app will be distributed.

STAGE 3

Let's Start With Self-Insured Employers

SUMMARY

- Self-insured employers are good buyers for digital health services thanks to word of mouth effects between employees, fast distribution with channel partners (e.g. benefits brokers), and relatively shorter sales cycles.
- The self-insured employer channel is saturated with companies making similar pitches and a few large companies cover most of the patients.
- There are several challenges when selling to employers, especially with actually rolling out a solution to employees and getting them to use it.



Usually, people new to healthcare will discover that:

- Consumers generally have a low willingness to pay.
- Hospitals also have a low willingness to pay unless it's linked to getting them more money (i.e., patient referrals or increasing billing/reimbursement).
- Insurers want proof that your solution works and they have a super long sales cycle.

These factors create a Catch-22. How can you find customers to demonstrate that your solution works when no one will try it? Companies might enter pilots with hospitals or insurers, but it can be difficult to get these organizations to commit. In some cases, these organizations just want to test the waters or get a research paper written. Pilots are destined to fail if they don't have internal buy-in and champions that are actually incentivized to make sure the startup succeeds. Your pilot might be with a patient population that's too small or extremely difficult to manage, you might not get access to internal data you need in a timely manner, etc. A successful pilot will have to ensure that it has clear, incentivized champions from both the startup side and healthcare organization.

Plus, just because you run a pilot with somebody doesn't mean they necessarily become a customer. There's a graveyard full of [“death by pilot” startups](#), where a company is used as a case study but not as a long-term partner.

Enter the self-insured employer ([primer here](#)). You've probably looked at some of these cute surveys about employers wanting to adopt new health solutions and employees wanting to use more healthcare services, and thought to yourself: “wow I'm the first person to notice this, I've cracked the code.”

Solution	Percentage of workers who said this solution would be "extremely" or "highly" valuable to them and their family
An app that helps me find the right doctor or medical care when and where I need it	51%
An app that helps me find an expert doctor based on my diagnosis anywhere in the world	49%
Personal individual and family medical records that are electronic and portable	47%
Self-managing health conditions using wearable technology, e.g., diabetes, heart failure	45%
Self-managing well-being using wearable technology, e.g., fitness, sleep, blood pressure, diet, fertility	43%
Tele-medicine (remote video-chat, text with a doctor or nurse) for a significant health issue like diabetes	42%
Tele-medicine (remote video-chat, text with a doctor or nurse) for a simple health issue like a rash or a cold	42%
Customized treatment and medicines using algorithms based on my genetic sequence	41%



A higher salary instead of any of these things: 100%

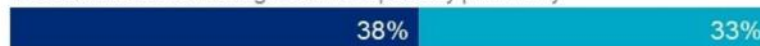
STRATEGIES RATED AS IMPORTANT / VERY IMPORTANT FOR THE NEXT FIVE YEARS

Employers with 500 or more employees

Monitoring/managing high-cost claimants



Focused action to manage cost for specialty pharmacy



Focused strategy for creating a culture of health



Improving patient empowerment through advocacy, shared decision-making, multi-channel navigation, etc.



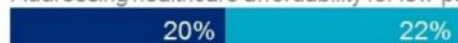
Focused strategies for behavioral health



Offering employees more plan or benefit options with decision support tools



Addressing healthcare affordability for low-paid employees



■ % employers rating strategy "Very important"
■ % employers rating strategy "Important"

On the surface, going the self-insured employer route has a lot of benefits (lol). The sales cycle is shorter and more straightforward vs. selling to health insurance carriers, and you have a built-in distribution channel to many employers simultaneously via benefit brokers. Plus, there may be a higher willingness to test out low-risk products that will reduce spend or increase employee satisfaction.

So the obvious plan is to go to some self-insured employers, prove your value and get some data, then go to larger self-insured employers or insurance companies with data in hand. Healthcare is easy.

Some things companies will discover when taking this route:

The sales and distribution problem

Customers are very concentrated in the employer segment. [About 4% of plans cover 65% of total lives](#). The big companies are very big.

Table 1. Distribution of Health Plans and Health Plan Participants, by Plan Participant Counts (2016)

Participants in plan	Plans	Percent	Participants (millions)	Percent
Zero	1,859	3.3%	0.0	0.0%
1-99	3,914	7.0%	0.2	0.2%
100-199	18,127	32.2%	2.6	3.5%
200-499	17,098	30.4%	5.3	7.1%
500-999	6,520	11.6%	4.5	6.0%
1,000-1,999	3,774	6.7%	5.3	7.1%
2,000-4,999	2,749	4.9%	8.5	11.3%
5,000+	2,170	3.9%	48.7	64.8%
Total	56,211	100.0%	75.2	100.0%

Source: Form 5500 health plan filings.

Note: Numbers may not sum to totals due to rounding.

Additionally, most of those employers are not super willing to try new solutions. You know it's bad when Comcast [is considered](#) one of the more innovative companies in plan design and trying solutions...

The Last Company You Would Expect Is Reinventing Health Benefits

Well this seems hopeful

Frustrated with insurers, some large companies — including a certain cable behemoth — are shedding long-held practices and adopting a do-it-yourself approach.

The innovative employers see a million identical pitches for the same solution each quarter. No employer wants to hear another pitch where the entire value proposition is “give your employees telemedicine so they avoid ER visits.” There are A LOT of those companies already.

The sales cycles into self-insured employers is extremely varied as well, due to company size, the number of people needed for approval, time of year when budgets are sorted, etc. These cycles can be super short, or extremely long, and the process for each company is very different. For example, diabetes management company Livongo Health [has an average sales cycles of less than 6 months](#) with some deals taking less than a month and some taking more than 12.

And you have to catch these employers when they’re setting up the following year’s budgets. Otherwise, you’re going to have to wait until the next cycle. If you’re trying to DISPLACE an existing solution that’s already in place, the burden of proof is even higher because most employers would rather just press the “auto-renew” button.

“Your health spend will outpace inflation,
but you won’t get fired for picking us again”



Part of this sales process includes figuring out who is actually doing the diligence for your solution. In smaller companies, it might just be the head of benefits doing everything. Many times they aren’t healthcare experts but are thinking about compensation more holistically (e.g. perks, 401(k)s, bonuses, etc.).

In most cases, self-insured employers will rely on benefits consultancies like Mercer, Aon, Willis-Towers Watson, etc. to help them come up with overall employee compensation plans that make the most sense, which will include health benefits along with life insurance, 401(k)s, etc. Some digital health

startups will choose to partner with these benefits companies, but these channels are more saturated than most companies realize, and some brokers have...[interesting commission structures](#) that need to be navigated.



There haven't been too many big successes that have scaled solely via the self-insured employer route, and almost all of them have used a benefits partner to get there ([Livongo-Mercer](#), [Castlight-Willis](#), [Hinge Health-Meritain](#), [Grand Rounds-Mercer](#), etc.).

There's no easy alternative. You could partner with one of the health insurance companies that sell [non-health insurance products to](#)

[employers](#) (e.g. the plans that act as an administrator for the employer), but then you'd face the same problems around selling into health insurers.

Contract in hand ≠ Success

A signed contract doesn't always lead to success. Once you get the contract in hand with an employer, you actually have to get their employees to use the product. According to Livongo's [investor documents](#), implementations take about 3 months, and 12 months to get to 34% of total recruitable individuals. Exits & Outcomes' [excellent enrollment report](#) covers several issues that companies selling to employers have to deal with when reaching out to employees, including not having access to company email addresses.

“During a recent deployment with an innovative aeronautics company, we brainstormed ways to connect with every employee. The challenge? Get a compelling message to a team without company email addresses. The solution? Identify the locations everyone visited each day. That left us two good options: the cafeteria and the bathroom. We chose the former. **We co-opted the napkin dispensers for one week to share bold, inspiring messages about the new benefit, all in the voice of the company's leader.**”

— [Omada Health](#)

If you don't get employees to engage, guess who's not getting a contract renewal? Getting the employer on board to try a solution is only half the battle - each employer is going to have their own unique issues when you want to roll out your service. Getting the second or third year contract is harder than a lot of companies realize. You have to prove that you managed to enroll their employees into your solution and that they used it when they needed to, and then decide on some metric of success that was achieved with a \$ value, like avoided surgeries or amount saved by routing an employee to a certain pharmacy/hospital.

When you don't understand how to tailor your employer enrollment strategy to your end customer



It's not just about getting any individual into your programs, but signing up the specific people that will ACTUALLY save the company money. A study of a 12,000-employee company in Illinois found that most of the people that opted into their workplace wellness programs already had low health spend. That makes this program a nice perk for the company and might help with metrics like employee satisfaction, which can still be valuable, but it's not actually a health solution and should be evaluated on different metrics (e.g. employee satisfaction).

Although employer channels may seem like they will solve all of your problems, they might just present a host of new challenges and will be harder to crack into than you think.

Good parts of the employer channel

However, selling into the employer channel does offer some interesting benefits. These benefits are mostly for areas of health that people actually discuss openly, which tend to be preventive and screening, instead of actual health issues that drive real healthcare spend.

- There's an office virality that occurs when coworkers start talking about a benefit (e.g. co workers might recommend One Medical when a new employee asks about an in-network PCP).
- Bringing services to offices not only reduces friction by bringing healthcare to where people already are, but there's the added social pressure to partake (e.g. when flu shots come to the office).
- Having an employer pay for a service that a consumer may not have paid for themselves helps alleviate the "[Market For Lemons](#)" problem. Many consumers aren't sure if paying for a service is worth it until they try it, after which they might become regular consumers. Then, employees can start suggesting it as a perk to future employers, which gives bottoms-up adoption and can help bypass brokers (or at least give your company more leverage when you talk to the employers/brokers).



STAGE 4

There are too many entrenched interests, it's not fixable

SUMMARY

- It's never been better to start a healthcare company, because the existing large healthcare companies are built on business models and workflows that were prevalent 20+ years ago and have become vulnerable.
- New infrastructure has made it easier than ever to create a healthcare company, thanks to new hardware, cloud infrastructure, health data hubs, and plug-in services-as-APIs.
- Startups are building tech-enabled workflows that enable new business models that will be difficult for incumbent companies to replicate.

By this point, it might seem like all hope is lost and healthcare is destined to be a Gordian knot of impossible-to-fix problems. Maybe it's time to just go back to ad-tech and call it a day. At least you'll make money.

Well, this is the part where I explain why it's actually the best time ever to start a healthcare company.

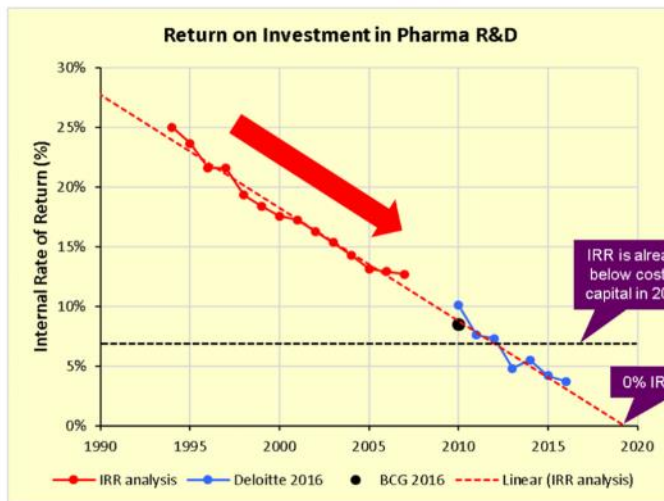
The Six Stages of Health Tech Grief



Business Model Disruption

The business models of virtually every single healthcare company founded over 10 years ago are vulnerable.

In pharma, the ROI on R&D [is getting worse](#) and worse as blockbuster drugs become harder to find. We're now entering the world of one-time curative therapies (e.g. gene and cell therapies), and reimbursement issues are arising as the system struggles to support drugs [that cost over \\$2M each](#). Most pharma companies have largely ignored products that don't target a disease that's rare, cancerous, or autoimmune.

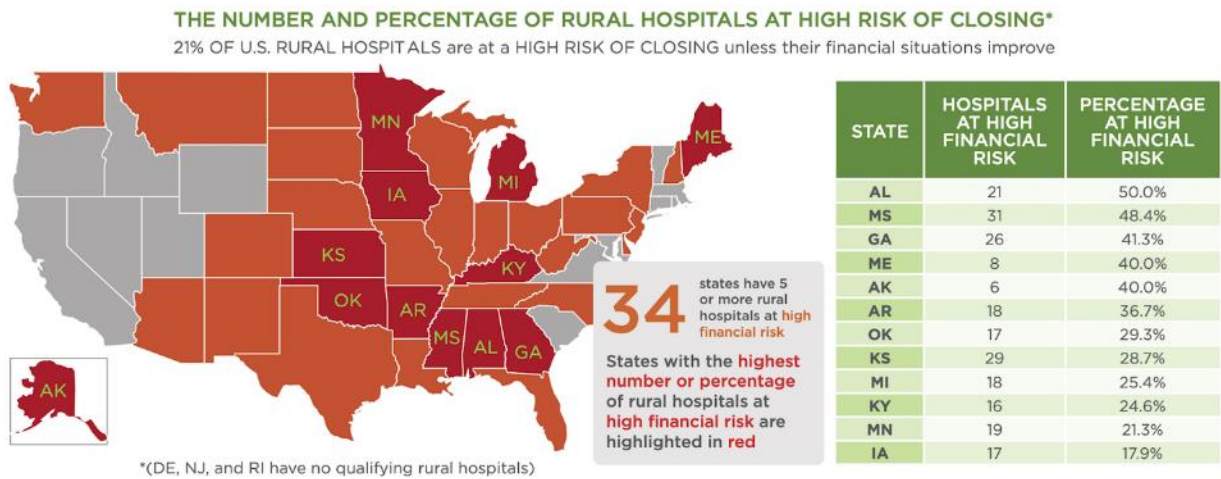


How this gene therapy drug earned its \$2.1 million price tag



COVID-19 has shown us just how vulnerable hospitals are. Hospitals in rural areas have been financially unviable for a while, with many in the most vulnerable geographies at risk of closure. Large hospitals have focused on increasing referrals into their hospitals via acquisitions at the expense of physician and patient frustration. They have treated value-based reimbursement as a side project to their revenue streams from fee-for-service (where they get paid per service given, incentivizing volume of services).

Figure 1: Rural Hospital Financial Risk

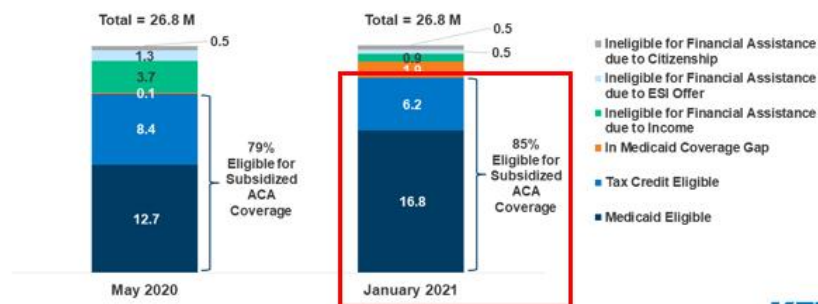


Insurance carriers have leaned into newer models like Medicare Advantage, but innovation from carriers has largely overlooked some of the largest segments of the population that have become the most relevant during COVID-19 – Medicaid enrollees and people that buy individual insurance. Most of the innovation and success in the Medicaid space has come from carriers making acquisitions until they are basically the only option a state has. Most of the innovation in the individual marketplace has been carriers leaving said marketplaces.

Figure 2

Eligibility for ACA Coverage Among People Becoming Uninsured Due to Loss of Employer-Sponsored Insurance

Number of People Eligible for Coverage, in Millions:



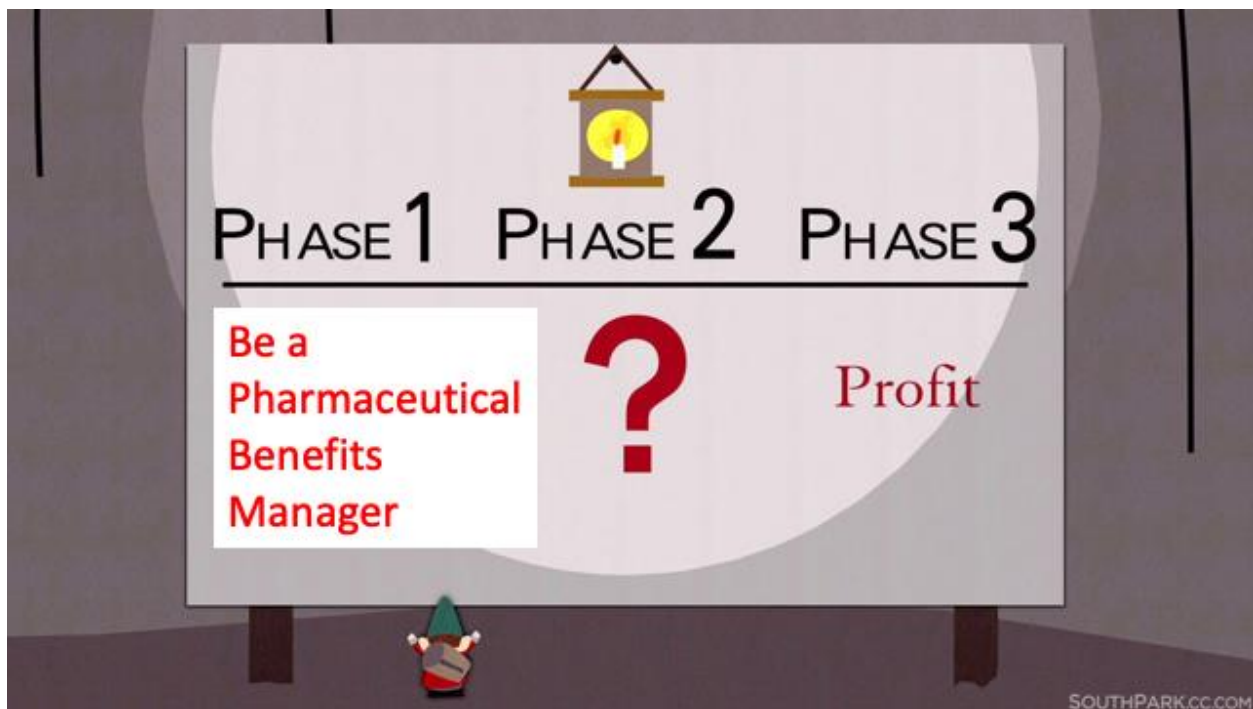
Notes: Medicaid eligible includes people eligible for other public coverage, such as CHIP. Totals may not sum due to rounding.
 Source: KFF. Job Losses occurred March 1st through May 2nd, 2020. See Methods for more details.

KFF
 KENNEDY KRAVITZ
 FAMILIES FOUNDATION



Plus, health insurance carriers still face the existential threat of a complete overhaul of the payer system as the population starts demanding that politicians change the way healthcare is paid for. Either way, if employment and insurance coverage are separated, few carriers have positioned themselves to take advantage of that switch.

And let's not forget all of the middlemen that you've never heard of, yet somehow generate \$billions\$ in revenue. These companies might hold less of a powerful position in the next few years, as there's been more scrutiny into the role these companies play in increasing prices and reducing competition by refusing to play ball with new companies that are mildly competitive (*cough*PBMs*cough*).



With a handful of exceptions, almost every large healthcare company has doubled down on an existing business model that worked in a fee-for-service world. Most of them simply keep acquiring small companies and lobbying to keep the current rules in place. Very few of these companies have embraced new business models that use technology as an essential, core function.

So yes, while there are entrenched interests, large healthcare companies are actually quite vulnerable, thanks to new technology and sweeping regulatory changes.

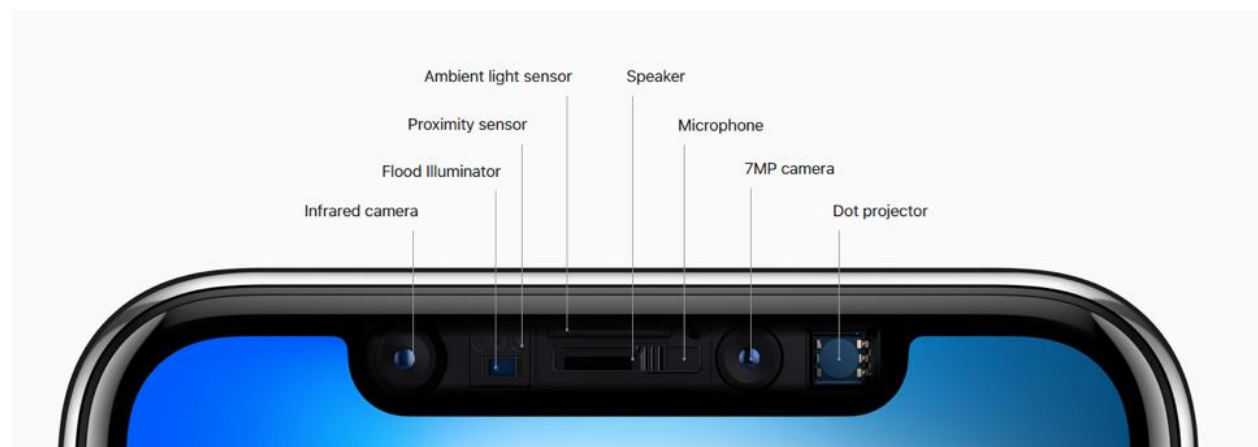
The New Infrastructure

The underlying infrastructure required to build a healthcare company has changed, and most entrenched companies have been slow to adopt these changes. Leaning into these infrastructure changes will not only let your company optimize for speed, but also take advantage of modern tech.

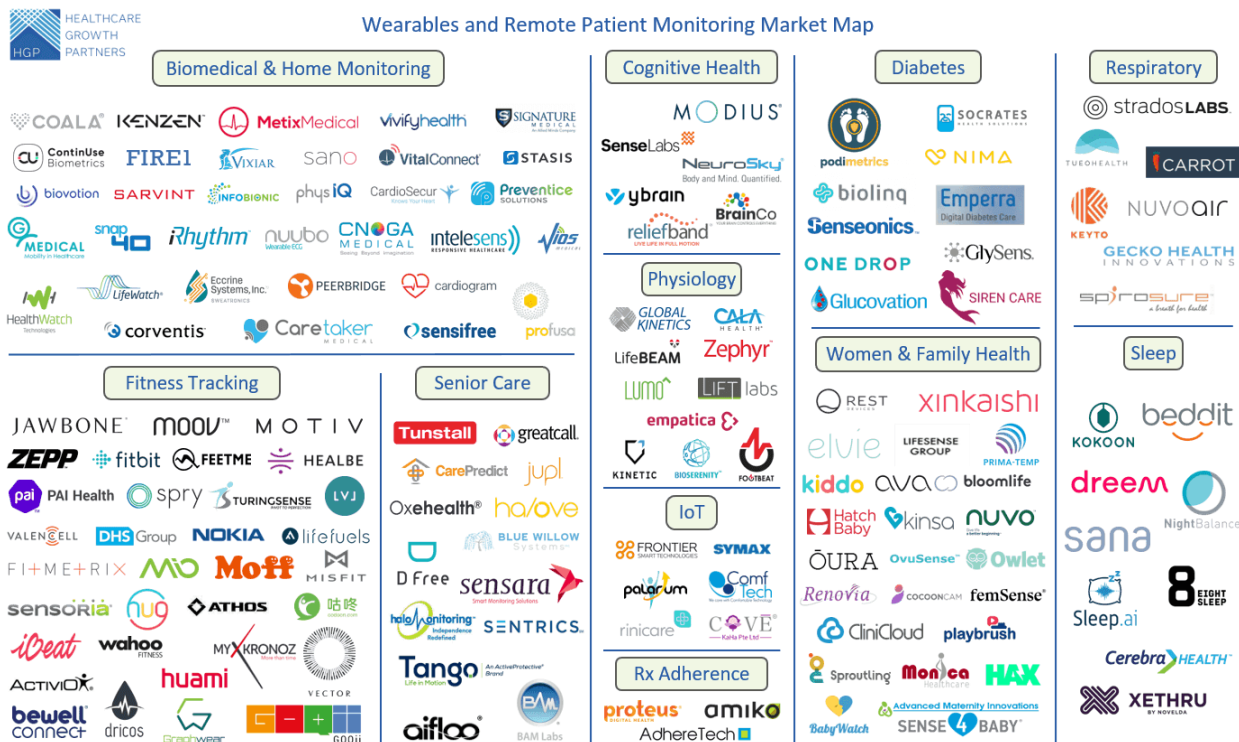
The cost to start a new healthcare product has never been lower and there's plenty of new types of companies to be built using cutting-edge tech.

Hardware

Today, an average smartphone has many of the tools needed to power different patient analyses, including incredibly powerful cameras, different types of light sensors, accelerometers, microphones, face dot projectors, and other powerful chips. Smartphones also have the capacity to capture even more types of data about what's in the environment around us that wouldn't be possible in a traditional doctor's office setting.



Sensors have [become very cheap](#) and many of them are now medical-grade. Hardware advances + the computation needed to interpret the data have made home diagnostics more of a possibility than ever before. That's why we have all of these barely readable market maps filled to the brim with companies that can get every single possible data stream about us.



Health data hubs

We're now beginning to see some health data hubs that are patient controlled, such as the Apple Health app and its HealthKit developer tools that let third-parties build on top of Apple's data. And access to that data and distribution can be yours...for a 30% tax paid to the App Store and hours spent searching 1000 forums to figure out "why did my app get rejected, can anyone help?"

These health hubs will get more valuable over time as passive data streams coming from sensors and diagnostics are connected to other contextual forms of health data (health record, labs, etc.).

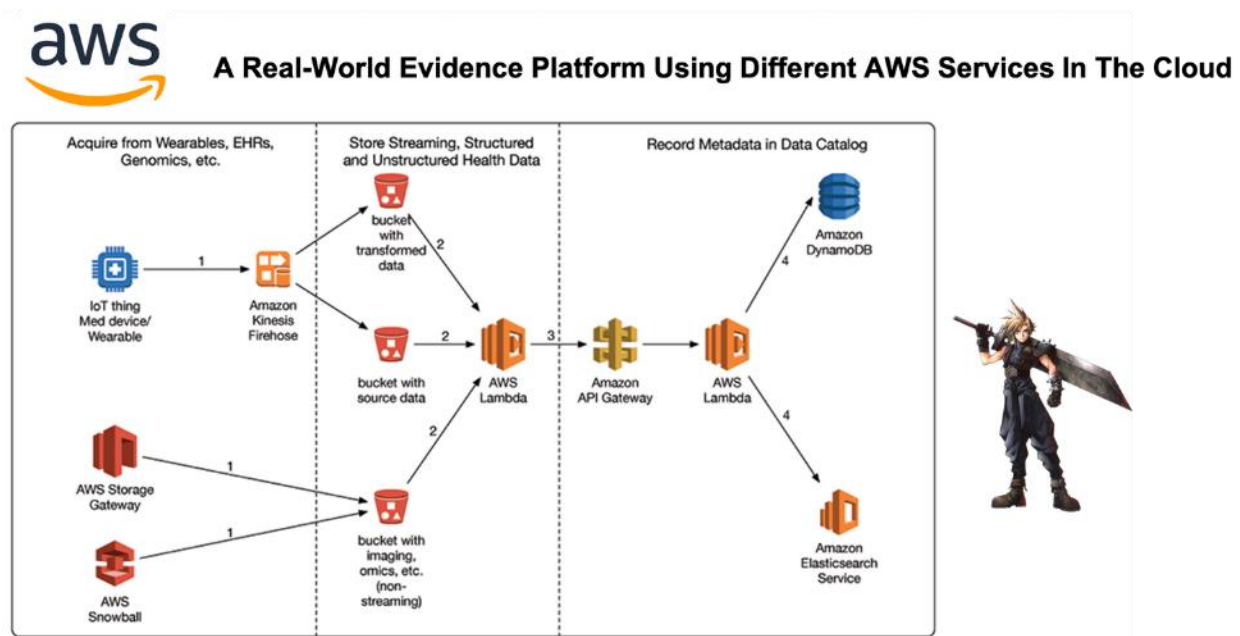
"BuT PeRsonAL HeALTH ReCordS haVe bEeN tRIed In ThE PaST," you'll scream. And I'll yell back that it's different because the data collection is now passive via sensors, there are integrations into the existing healthcare system through EMR plug-ins, and new interoperability rules might standardize this data.

The cloud

In the tech world, the cost of spinning up a startup plummeted like crazy thanks to Amazon's Web Services division (AWS), which let startups rent out Amazon's data storage and compute power. This not only dropped the cost of starting a company from millions to hundreds of dollars, but also allowed pay-as-you-use models that could scale with the companies as they grew.

Now, that same speed and cost reduction is coming to healthcare thanks to HIPAA-compliant cloud services. There are 119 different [HIPAA-compliant AWS cloud services today](#), vs 25 in 2017. Some of these are really cool healthcare-specific ones, like [AWS Comprehend Medical](#), which parses unstructured text data and maps it to different medical terms.

Startups can now start stringing together these HIPAA-compliant services to create entire products, something that wasn't possible even a few years ago. And you won't realize how insane your AWS bill is until years later anyway, when the few engineers that understand how the pieces of the system work together leave, but that's a "future you" problem.



I'm naively hopeful that COVID-19 is forcing more companies to hyper accelerate their shift from on-premise data storage to storing data on the cloud. CIOs now actually have to do the work of migration instead of

answering surveys about how they're planning to adopt cloud services. This shift will hopefully make it even easier for new startups to work with different healthcare companies that need to exchange data.

Services-as-APIs

Services-as-APIs are relatively new and pretty exciting. There are several companies now that allow you to access their healthcare services with a line of code that integrates right into your existing workflow.

This is useful because these services would otherwise have to be built in-house. Now, if you plug-in a line of code, an order of generic drugs from your sans-serif site will be sent to a company like TruePill who handles the pharmacy dispensing side of it on the back-end. You don't have to build a whole pharmacy yourself! This makes it really easy to plug these services into your workflow, and to only pay as you use them.

This is similar to the AWS example I gave earlier. Startups can outsource these services to other companies, and focus on their core product.

Why Truepill?

Don't re-invent telemedicine infrastructure. Build, ship, and scale with Truepill



Robust API

We provide a RESTful API and dashboard access for physician consult and pharmacy dispensing services



Customized Packaging

Take full control over the patient experience including customized packaging and a full white-label pharmacy experience that represents your brand



Scalability

Learn how Truepill can power your prescribing needs across 50 states with a pharmacy footprint that can ship 100,000+ orders per day

Other examples of Service-as-an-API include [Eligible](#) for medical billing, [CredSimple](#) for credentialing and making sure your doctor isn't a felon, and [Wheel](#) for telemedicine consults.

Tech And New Healthcare Business Models

On its own, tech will not help you win if you're a new healthcare business.

I see many companies that try to compete with existing healthcare giants at their own game by trying to win on a metric that doesn't matter (UI/UX, NPS, etc.). Buyers are risk-averse – if your offering is the same as a healthcare incumbent and your pitch is “we use tech” or “we have a better UX,” you will not win.

However, if you can take advantage of these new technology developments and build entirely new business models from the ground up, you'll be able to beat the healthcare giants at their own game. There's never been a better time to start and scale a healthcare company.

To win, the technology has to enable a new business model. This can happen through a combination of the following:

Taking on more outcomes-based risk

Charging less upfront and more when outcomes are delivered is truly putting your money where your mouth is. Companies can differentiate themselves by building their workflows and processes natively to value-based care models and getting paid on results.

EXAMPLE

[Omada Health](#), a diabetes management company, only billed employers when participants enrolled in the program, engaged in the program, or lost weight. That's a much easier pill to swallow if you're an employer than the traditional per-employee-per-month billing. Omada is betting its solution will work and taking on some of the risk.

EXAMPLE

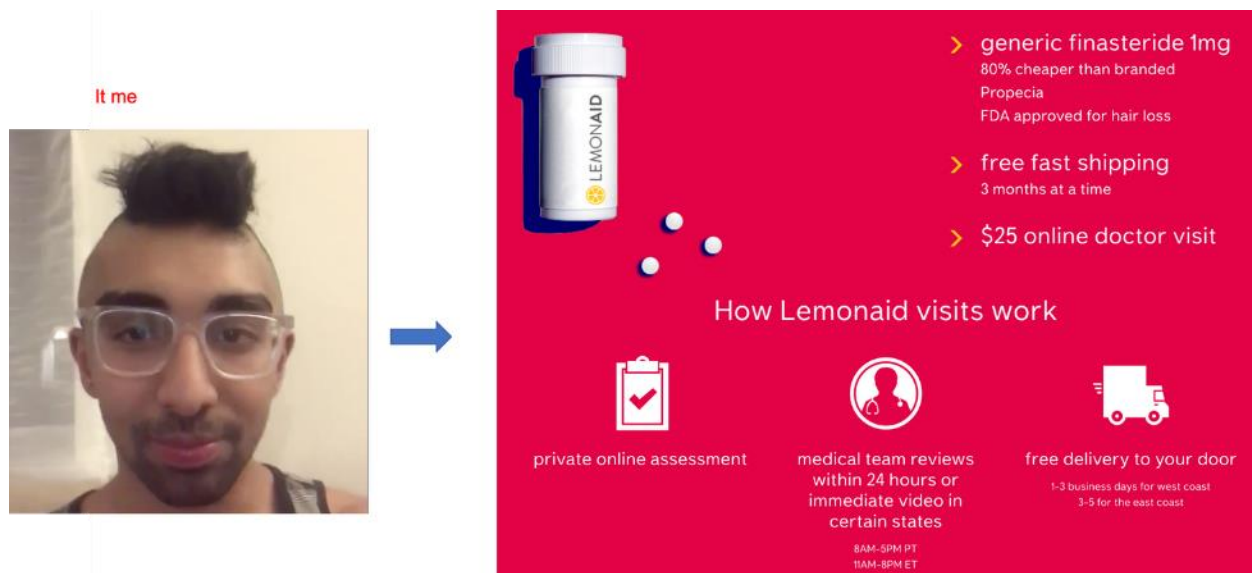
[ChenMed](#) is a white-glove primary care company that focuses entirely on Medicare Advantage members and dual-eligible members (eligible for both Medicare and Medicaid). ChenMed gets paid a fixed amount for each patient. By focusing on a smaller but sicker cohort, they spend more time per patient and address more of the issues happening outside of the clinic. The business builds its processes around a value-based care arrangement.

Finding a new segment to pay

Finding a new segment to pay will change your go-to-market strategy, pricing, etc.

EXAMPLE

Large healthcare companies have generally considered the cash pay/uninsured segment too small to be worthwhile and would require an overhaul of existing contracts that use the cash pay price as the benchmark for negotiations (aka. it's a lot of work and you can't make the cash pay price too low). Companies like [Nurx](#), [Lemonaid](#), etc. have patients with low-severity issues fill out forms that are reviewed by independent doctors (usually through an outsourced contracting system for telemedicine physicians like [Wheel](#)). These doctors then write prescriptions as needed. This enables doctors to asynchronously "see" more patients per hour by parsing through forms instead of sitting through face-to-face visits. These companies can bring the cost of a visit + a prescription for low-risk issues down to cash pay prices (e.g. \$25 for a visit).



Create/leverage a new distribution channel

A product native to a distribution channel will look very different than one that's testing a channel out.

EXAMPLE

[Oscar](#) made a big bet on health insurance exchanges when they came out. The product for the exchange was unique because the buyer and the user were the same person (usually, employers shop on your behalf). This is where customer experience actually did matter. When I needed insurance, the enrollment portal sucked so hard that I literally just went to Oscar's site directly to sign up.

Build a novel workflow

Most companies optimize their entire system around a specific workflow. Companies that compete on this front have an advantage, because it's very hard for incumbents to modify all of their processes to a new workflow.

EXAMPLE

The Apple Watch + telemedicine combination for heart condition monitoring is an example of a proactive healthcare workflow instead of a reactive workflow. Normally, patients reach out to providers when they feel ill. But the wearable can identify an issue before the patient physically feel symptoms, which leads to a seemingly simple but deceptively complicated workflow. Using data from the wearable, the patient is triaged into severity, prioritized in some sort of queue, and matched with a doctor. Both the doctor and the patient have to be notified, and then a telehealth consult has to be initiated and logged. Then the patient needs to be directed for follow-up care. This workflow is already difficult to build from the ground up, and will be even more difficult for a large healthcare company with an existing workflow to replace.



STAGE 5

Let's make this one process 5% better

SUMMARY

- Companies that focus on tackling a specific problem will be able to get a handful of clients with that specific pain point. They will likely become a sticky part of that customer's workflow and be awarded decently sized contracts.
- Process improvement tools are a difficult sell because the buyer and user of the products are two different people. Additionally, many users in healthcare have no desire to learn new tools, the integrations required to improve processes are usually more complex than they seem. Finally, there aren't many small-medium size businesses who would be early adopters to test and iterate the product with.
- Many companies will lack the internal expertise or resources needed to use a tool to its fullest, which will cause most companies to realize that they need to add a services component to their business.

The Six Stages of Health Tech Grief



Hopefully that pep talk helped you get through the valley of disappointment.

When a company gets out of the trough, many think that the best way forward is to focus on a singular pain point their target customers feel and improve that process with software.

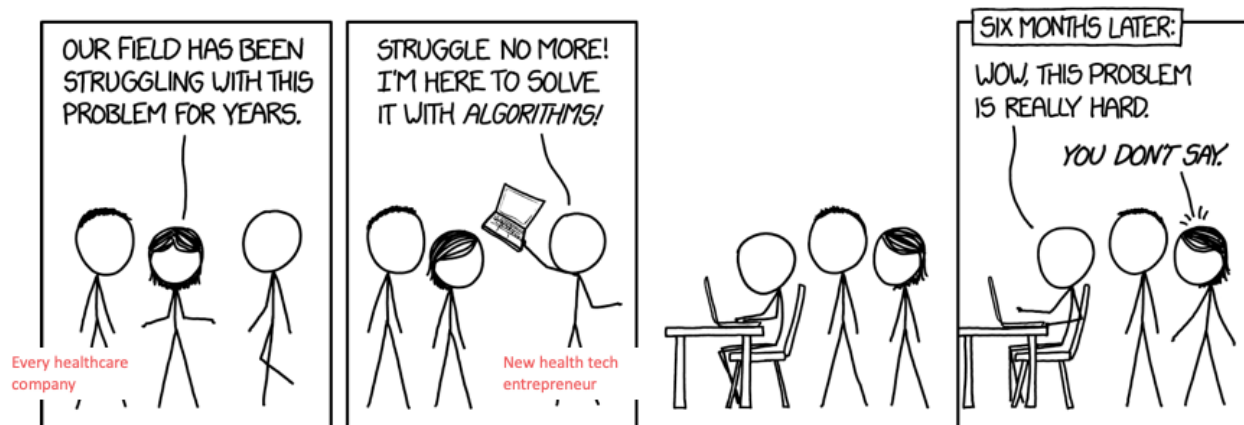
The idea is that there's some process that's currently handled with spreadsheets or calls/emails that could be better handled with software.

"We can make your patient outreach more efficient with our software."

"We can mine your disparate internal data sources to identify the most at-risk patients for you."

"We use your data with our algorithms to help you identify the most promising drug candidates."

"Our software makes it easier for your employees to shop and find the best care when they need it."



In an ideal world, you would train users that work at some healthcare company or employer on your platform for X task. After they see their time for that task go down, the parent company will pay you to make the lives of their employees easier and speed up some process.

This happens all the time when you work in tech-land at a startup. Want to make your workers more productive with software? Slack, Airtable, Notion, Zapier, JIRA, Monday, and other rainbow-themed productivity tools plug into each other and make you so productive that your entire job just becomes

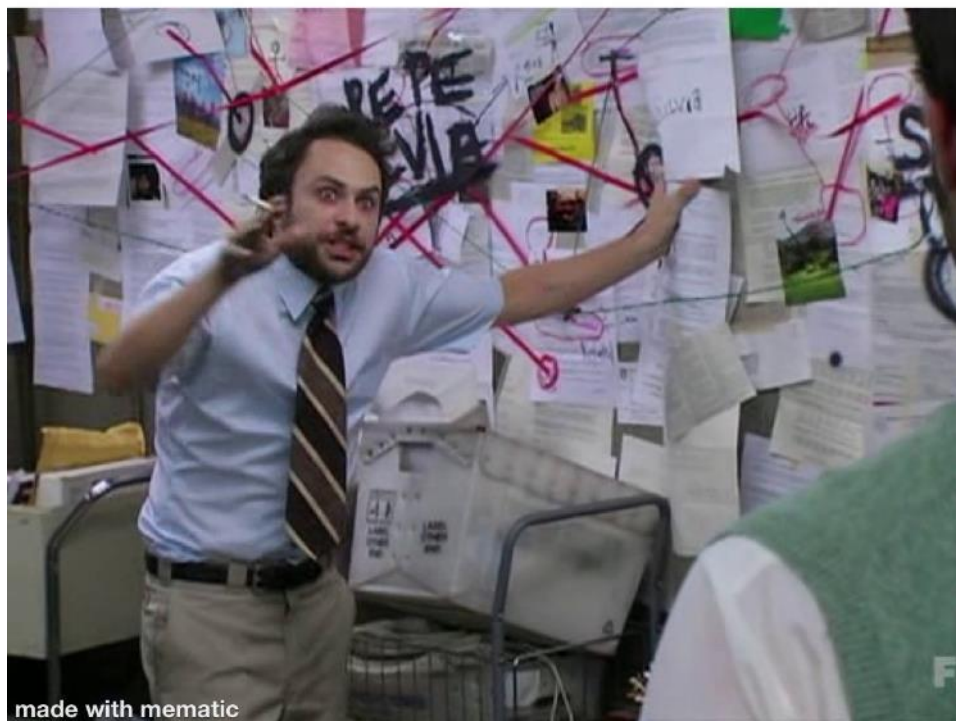
talking about how productive you are. You probably spend more money on the tools than the hours saved.

There are a few reasons this is more difficult in healthcare.

- A lightweight tool that can plug nicely into a process without having to integrate with too many systems is never as lightweight as it seems. If you need to pass data between any two systems, this is going to require a relatively involved integration from both you and your customer into a lot of random software and systems that you probably didn't expect just to get up and running.

“Yeah this should be a really lightweight integration”

Actual integration:



- In other industries, new companies tend to start by selling to small-medium sized businesses and iterate features before selling to larger enterprises. In healthcare, this is difficult because most small-medium size businesses are getting crushed by large hospitals/payers and have

less capacity/resources (money, time, dedicated staff) for experimentation.

- The principal-agent problem is everywhere in healthcare. The person making the purchasing decision and the person using the product are totally different. At a hospital, the purchaser might be a Chief Information Officer, but the user might be a frontline physician. The CIO cares way more about price + disruption in existing workflow than usability or efficiency.



- No one wants to learn a new tech tool/process because they've historically been terrible. When you say "our tool can do this for you," the other side is hearing: "here's another thing you have to learn after you've spent months trying to figure out the last tool, which sucked."

Beyond the adoption process, a lot of companies trying to sell software tools for a specific use case will also discover that their customers can't actually use the tools to their maximum because they don't have the expertise in-house (e.g. data/tech talent or healthcare knowledge). Or they'll discover the efficiencies that were created with the tool immediately get wiped out once they hit the legacy system/process.

EXAMPLE

[TrialSpark](#) initially started as a patient recruitment service that would recruit patients online and send them to clinical trial sites. However, the company discovered that a lot of the patients weren't actually being handed off properly to the site, because the sites had different systems and processes to handle clinical trial recruitment. Increasing the top of the funnel of eligible patients wasn't making the system as a whole more efficient. TrialSpark realized that in order to make clinical trials more efficient, it had to control and standardize more of the actual processes which required operating and the trial site itself and delivering services to run trials.

I would guess that many companies in the "slightly more efficient" bucket will end up discovering that they have to loan expertise out to help their clients make the most of their tool. Or they'll realize that it makes more sense to actually compete with their clients and become more of a full-stack services company.

Or they'll just remain one of these zombie \$1M-\$5M ARR companies with like one or two key clients that stays in relative purgatory.

STAGE 6

I guess we're a services business

SUMMARY

- By incorporating a services component, businesses have an easier time building trust with end clients, expanding offerings, improving operational efficiency, closing larger contracts, and becoming nearly irreplaceable once they're fully integrated.
- Health tech companies will use services in an advisory capacity, for hands-on on-boarding, and can become a completely outsourced department by offering expertise as a service (e.g. handling all analytics functions).
- Companies that deliver services can use tech to implement more targeted touchpoints with patients, build proactive outreach workflows, and create online-offline handoffs for patients of different severity levels.

The Six Stages of Health Tech Grief



If you think you're going to build a self-serve software tool with a steady 80–85% gross margin from the jump, I have some bad news for you. Most healthcare startups will realize that they have to deliver services if they want to generate meaningful revenue.



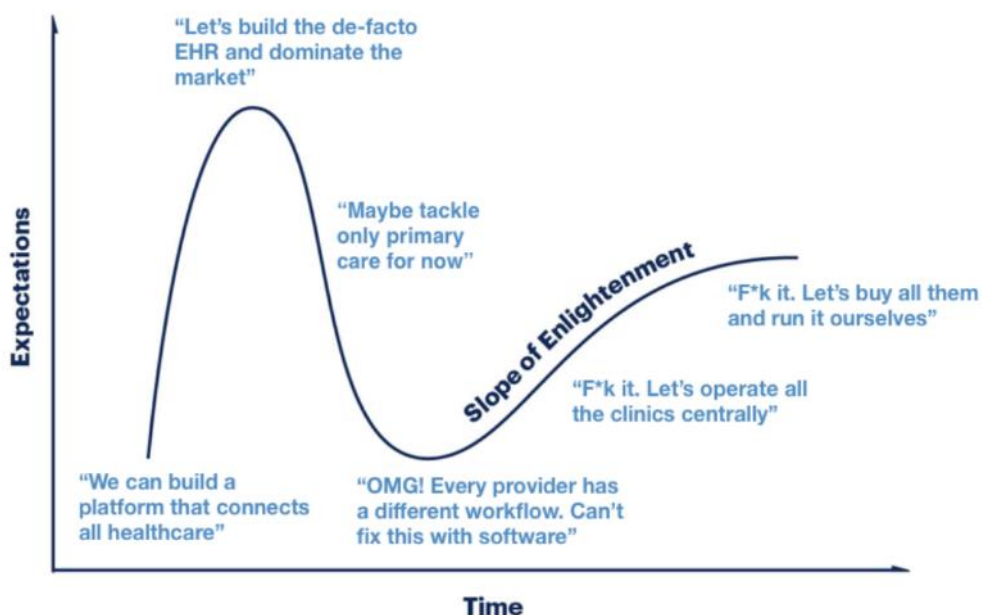
Eren Bali 
@erenbali

...

Exactly how it played out for [@CarbonHealth](#). This should be a mandatory slide after year 4

The Tech Person Entering Healthcare

adopted for @Carbonhealth by @erenbali



I think a lot of people coming from tech to healthcare stick with the maxim that services aren't scalable or defensible, and that they make your company more liable and at-risk.

I would argue that services are integral in healthcare, because one of the most powerful forms of defensibility in the industry is **trust**. In healthcare, the downside risk of things messing up is very high and everything is super complicated, so trust is the most valuable form of currency. Contracts are renewed and expanded because a vendor is trusted. Selling complex products that are not limited to digitizing one process within a workflow requires trust. Getting patients to come to you first when they have a question requires getting them to trust you.

A major part of building trust is tying yourself to the outcomes of the end buyer. I talked about taking on more outcomes-based risk as a differentiator. But if you're tying yourself to the outcome, do you really want to outsource the client-facing part and care delivery to someone else?

IMO services are a core part of building that trust. There are two main ways this can manifest.

Services Help Scale Tech Products

Digital health companies will use professional services to on-board, train, and set up a company on their platform. Companies like [Veeva](#) and [Health Catalyst](#) have done this well.

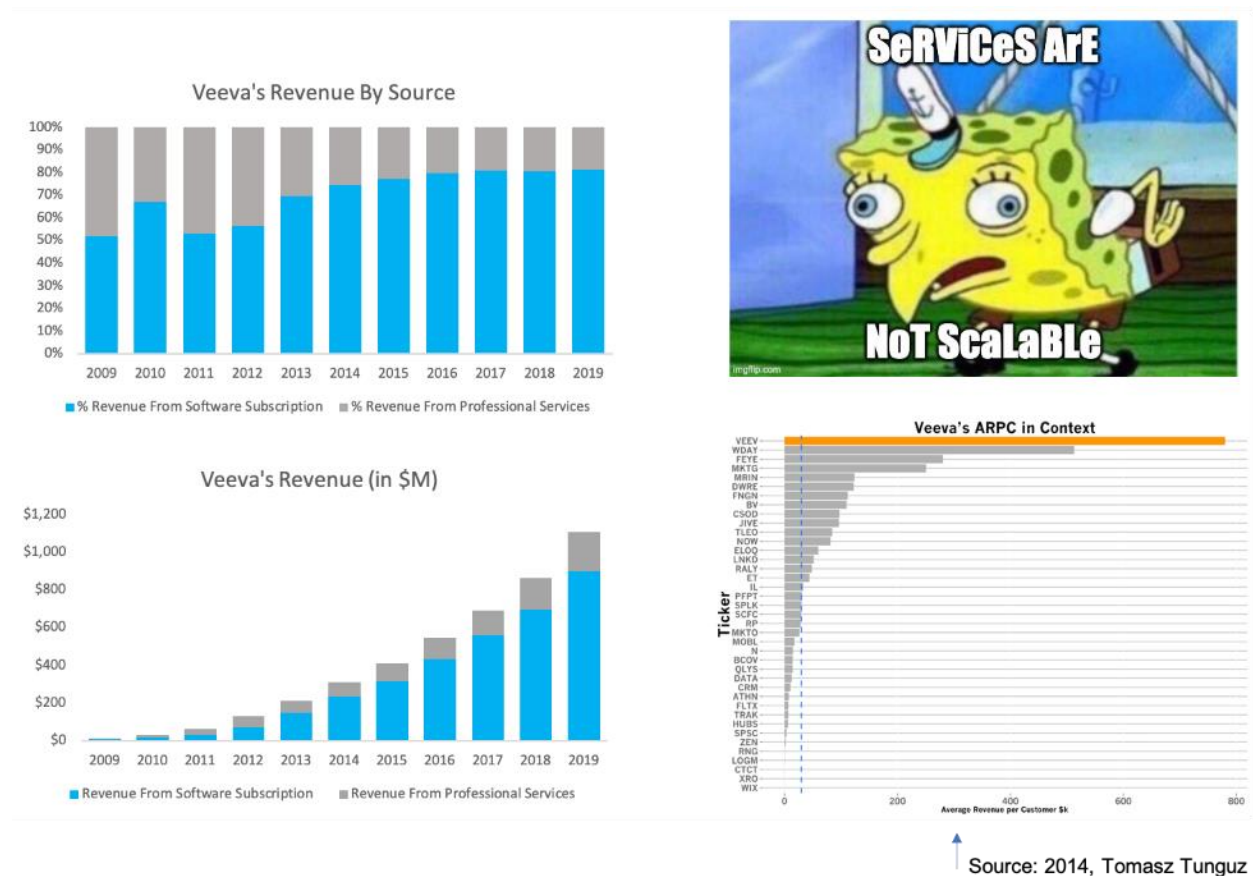
“When we started the company, the plan was to build products and have partners deliver all the surrounding services. Very quickly, we learned that our customers wanted more Veeva ‘skin in the game.’ So, initially we built our services division to demonstrate our commitment to customer success but it became much, much more than that.

“ The Veeva Professional Services team is now the glue that holds us close to our customers around the world...This crucial team is part of every major implementation and quickly becomes trusted advisors and partners for our customers.” - [Matt Wallach, co-founder of Veeva](#)

Veeva sells a whole suite of cloud-based software tools to life sciences companies, including the software you need to run a clinical trial, sell your drugs, be compliant with regulations, etc.

In 2009, about 50% of Veeva's revenue came from services (20-25% gross margin) and the other half from subscription software (75-80% gross margin). [Today](#), Veeva gets ~80% of its revenue from software by up-selling new products across divisions within life science companies, and serving every department from R&D through commercial. Their subscription revenue retention has been 100-120%+ basically every year with an average revenue per customer that blows most SaaS business out of the water. Veeva had the ability to do this because it established trust with its end customers with hands-on onboarding, tailored rollout, and customized software. It also

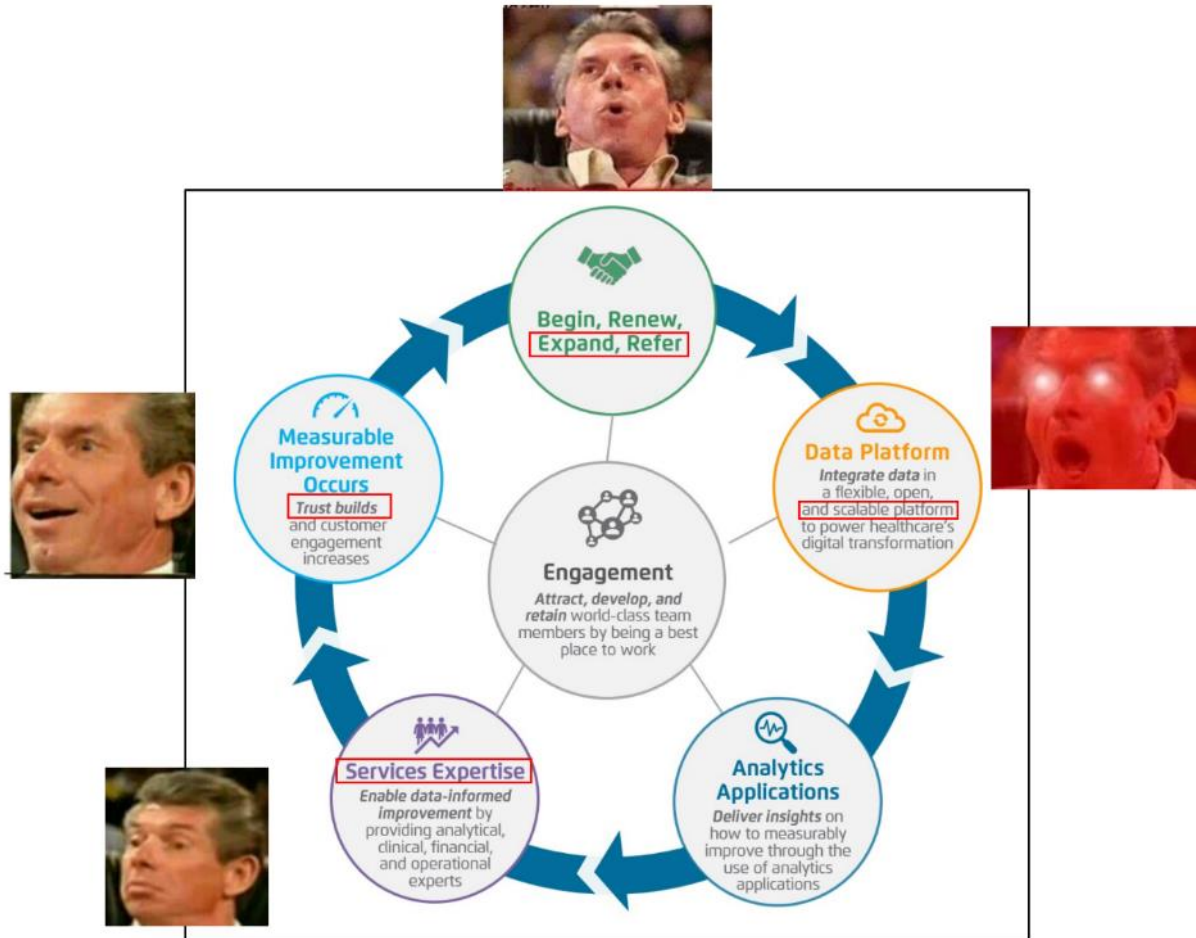
launched professional services to share learnings from their work with other customers.



Health Catalyst and the providers they work with is another version of this story. Health Catalyst sells data warehousing services to hospitals and providers, which aggregates the disparate sources of data floating around a health system and puts it into one structured place, so that you can run analytics, see how your hospital is performing across departments, etc. They also provide services including data teams to help hospitals get set up, run different analyses, etc. if they don't have the expertise/bandwidth in-house.

In Health Catalyst's [S-1](#), they explicitly talk about how services build trust in their pseudo-mandated S-1 flywheel graphic. That trust allows them to expand into new departments within the hospitals and upsell different types of products. Hospitals are now [outsourcing entire analytics departments to Health Catalyst](#), and the company can use its relationships + access to provider data to offer scalable, higher margin data products to pharma,

insurance, etc. Similar to Veeva, their services revenue is becoming a smaller % of their total revenue, while their higher margin technology product lines are growing quickly.



Tech Helps Scale Services Products

Services can also BE the core product. Sometimes, tech-land forgets that you can build really big services businesses.

[Livongo](#) and [One Medical](#) are good examples. They've built businesses that use tech to deliver services more efficiently and with a better experience for the end patient.

Livongo is a good example of how delivering on outcomes for customers made it easier to expand into new areas. Livongo started by helping

employers manage their diabetic employees via remote monitoring, coaching, texting, emails, etc. After they saw success in this area, they expanded into other chronic disease areas (behavioral health, hypertension, etc.). Two separate points from their earnings call:

“[1] First, as the number of employee health management programs continue to grow, large employers are increasingly challenged to organize and manage these programs for their employees.

They want one partner to work with. This trend was already under way before COVID-19, but the pandemic accelerates it...

“[2] And because of our virtuous business model, our clients don't just like us, they love us. We deliver strong clinical outcomes and a hard financial ROI. And that's exactly what the market is looking for, but they're looking for a safe choice. And I was on the phone with one HR Benefits Director recently, and they said, "You don't get fired for buying Livongo." And that was just here recently. - [Zane Burke, Livongo CEO](#)”

Services helped Livongo establish themselves as a safe choice, so that they could expand their footprint with each customer. Services made it easier to sell the package of “we’ll take care of all of your chronic disease patients.” If healthcare isn’t your expertise (patients, HR teams, etc.), then you don’t want to run a diligence process for every single healthcare problem you face. You want one company that’s trusted by others to handle things for you.

Full stack healthcare services company



We can handle all of your healthcare needs, increase our contract value

made with mematic

Software point solution



“Plz renew, we have new features coming soon you’ll like”

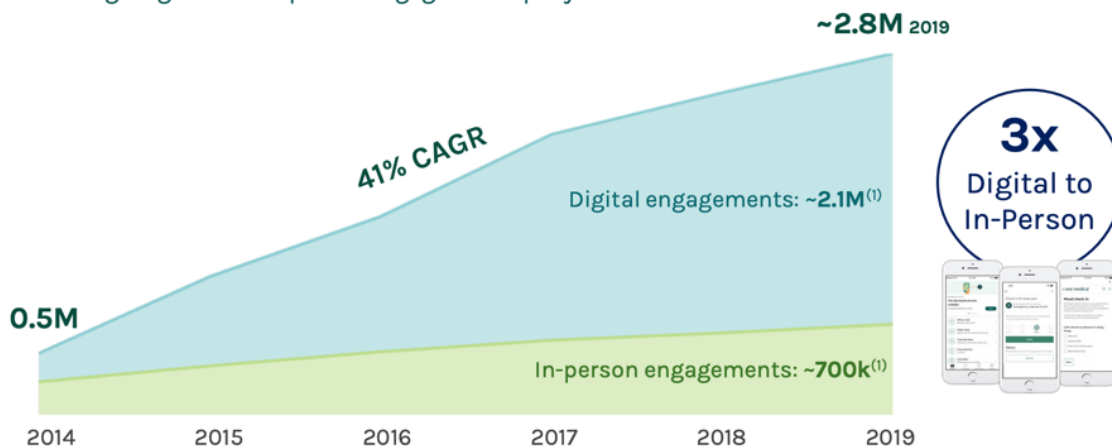
The other benefit of delivering the service yourself instead of handing it off to a third-party is that you can create a services workflow that is built with tech in mind. This will not only reduce your operating cost as you scale, but is super important if you’re in a contract where you’re paid on outcomes or you’re differentiating yourself on the patient experience. As you get data on how patients are using your product, you’ll want to make changes to how care is delivered. This is way harder if you don’t control the services portion.

Livongo’s (hopefully ironically named) AI + AI system literally stands for Aggregate, Interpret, Apply, and Iterate. As data comes in from connected devices, they can time their nudges more accurately and tailor coaching. With appropriate nudges, you can likely scale the coach:patient ratio significantly.

One Medical seems to be heavily investing in digital visits, which would be way cheaper and more scalable for them operationally vs. focusing only on in-person visits. Digital visits are more scalable because you can “see” more patients asynchronously via text, use lower cost labor when possible, fill unused capacity when the physicians have down time in-office, and more. Again, by controlling tech AND services together, OneMedical can drive down operational expenses and try different workflows.

Technology Driven Engagement and Operating Leverage

~7 average digital and in-person engagements per year ⁽¹⁾



Long-Term Target Operating Model (Non-GAAP)

		2017	2018	2019	Long-Term Goals
Revenue Growth			20%	30%	Mid-20%+
Care Margin ⁽¹⁾		32%	36%	39%	45%
Operating Expenses ⁽²⁾	S&M as % of Rev	11%	12%	14%	10%
	G&A as % of Rev	28%	31%	35%	15%
Adj. EBITDA Margin ⁽¹⁾		(7%)	(7%)	(9%)	20%

(1) Care margin and adjusted EBITDA are non-GAAP financial measures. See the slide titled “GAAP to Non-GAAP Reconciliation” for a reconciliation of care margin and adjusted EBITDA to the most comparable GAAP measures: loss from operations and net loss respectively. Adj. EBITDA Margin is defined as Adj. EBITDA divided by net revenue.
 (2) S&M excludes the following stock-based compensation amounts for 2017, 2018, and 2019, respectively: \$267K, or 0% of 2017 revenue; \$552K, or 0% of 2018 revenue; \$1,256K, or 0% of 2019 revenue. G&A excludes the following stock-based compensation amounts for 2017, 2018, and 2019, respectively: \$9,263K, or 5% of 2017 revenue; \$20,629K, or 10% of 2018 revenue; \$13,621K, or 5% of 2019 revenue.



30

Services Takeaways

Do you NEED to be a services company to be successful in healthcare? No. But having a services component lets you do the following:

- Have greater control over the consistency of service quality for your end customer. This builds trust, which is important in the healthcare industry.
- More easily guide your customers to new, potentially higher margin products that you're expanding into. Most customers don't want to deal with a million different solutions that don't talk to each other. They want a single service that can fulfill whatever they need done.
- Have customers outsource functions to you when they don't have the expertise in-house. You can win a much larger and stickier contract if a customer outsources departments or personnel to you. You also get the operational benefit of having those experts work across multiple customers.
- Accrue the efficiencies that tech can bring. If you're just selling a tool that you'll hand off to the legacy healthcare system, most of the efficiencies from using software will vanish. If you build a tech-enabled service from the ground up, you can build workflows for the services component that actually take advantage of the benefits of tech.

If you get to a point in the health tech journey where you realize that you might actually need more humans than you thought, don't despair! And if anyone tries to tell you that what you're doing isn't scalable, send them this post and then walk away.

CONCLUSION

The Health Tech Idea Maze

I'm convinced that the best time to start a healthcare company is now, but it's important to learn from history and avoid the follies of other companies. I don't know why I wrote that like a Lord of the Rings character.

More than anything, I want new entrepreneurs to keep going when they inevitably hit a wall while building a healthcare company. As this whitepaper shows, there are many people who have gone through the exact same struggles you're facing.

If you are thinking about traveling through the Six Stages of Healthcare Grief, good luck - I know you'll come out of it on the other side with an awesome idea. When that happens, buy me a coffee :)

Until then, come check out some of the other stuff I'm building at [Out-of-Pocket](#).

Virgin pure software healthcare company



Chad tech-enabled services healthcare company



Thinkboi out,

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ABOUT OUT-OF-POCKET

Healthcare is confusing, but it doesn't need to be.

The goal of [Out-Of-Pocket](#) is to make healthcare accessible, entertaining, understandable for anyone that wants to learn how it works. We're building a newsletter, crash courses, educational novelty products ([like a children's book](#), what?), and more to help cut through the noise and explain plainly the business of healthcare and where the industry is heading.