CHAPTER 8

The Shift in Healthcare Delivery

There are many trends happening in the U.S. shifting delivery to the patient's home environment. While many of these trends are government, payer, and major retail pharmacy trends that are not driven by AI like the previous examples, it is important to understand what these major entities are doing in the U.S. in order to have a clear picture of the artificial intelligence component.

Those who control the flow of money control the power.

In healthcare, the major payers have significant influence over healthcare delivery: CMS, UnitedHealthcare/Optum, CVS/Aetna, Humana, Anthem, Cigna, Kaiser Permanente, and the VA (Veteran's Affairs)

are eight of the biggest payer influencers, though of course there are many more. All eight of these giant entities have been making a push for aspects of healthcare to shift from the hospital or clinic to the patient's home or nearest retail pharmacy clinic.

The major commercial payers are also starting to control the actual healthcare delivery by owning provider networks and companies. In April of 2021, Humana spent $5.7B to buy the remaining stake in Kindred at Home, a home healthcare company Humana had bought a 40% stake in a few years ago. Kindred at Home helps over 500,000 patients a year in-home with nurses, physical therapists, and other medical professionals when a physician determines the patient is home-bound. A couple of months after that acquisition, Humana announced they were acquiring One Homecare Solutions (onehome) for an undisclosed amount. Onehome provides Skilled Nursing Facility (SNF) at-home care. The Skilled Nursing Facility at-home model is a combination of DMEs (durable medical equipment, everything from wheelchairs to hospital beds to oxygen), in-home nursing, IV care, lab testing, physician services, and even nutritional needs. Segment President & CFO for Humana's home business Susan Diamond stated the goal is Value-Based Home Healthcare on a national scale that benefits both patients and providers.

The great news is that with in-home care, while the

(e.g.) nurse is in the patient's home, s/he can check to make sure there is enough healthy food and identify potential pitfalls in the living environment, such as a rug or other obstacle that could result in tripping and falling. This is especially important for Humana's enrollees, many of whom are over 65 years old and covered by Medicare Advantage. This is a win-win situation for both the patient and the payer. The patient gets better care that is more comprehensive and allows them to stay at home, which is a very big deal for people too sick, disabled, or elderly to easily be transported to a clinic. The insurance company is able to deliver less expensive care that can be more frequent, cover and investigate more things, and spend more time than the standard doctor appointment of 7-20 minutes. By meeting the patient where they are in-home, the insurer-provider may catch more medical problems at the earlier stages, when they can be easier and less expensive to treat.

By providing at-home care, Humana and many other companies are helping democratize healthcare to underserved communities. People living in underserved communities have less access to healthcare for multiple reasons. For instance, hourly wage workers may not be able to afford the time to take off work to see a doctor, find childcare, or the distance to travel may be too great to access easily without a car, and that's assuming they can afford and are allowed to take time off from work.

Other giant healthcare stakeholders like the FDA, retail pharmacy chains, large employers, and BigTech companies including Google, Apple, and Amazon also have a controlling stake in part of the healthcare industry. Most of these giants were already focusing on this shift in healthcare delivery by 2017 if not earlier. When the pandemic hit in 2020, the ecosystem and foundation to support this shift out of clinics and hospitals and into the home or nearest pharmacy were already in place. The pandemic accelerated this shift in many ways, including a faster FDA clearance time for products and services that can deliver care in-home, new Medicare reimbursement codes, and a significant amount of funding for all innovations related to this shift in delivery.

Patient Adoption

While the main healthcare stakeholders were already starting to work on this shift before the pandemic, the most important healthcare stakeholder – patients – were mostly unaware of this shift in healthcare delivery. What the pandemic did was force many people to learn about and try new things like telemedicine, remote patient monitoring, IV medication in home, urgent care in home, and even remote clinical trials in home. This is significant as it solved two major problems: First, many people are resistant to change – especially at a time in their life when they are sick

and scared. It's easier to do what they already know and save their brain power and strength for everything else in their life. Once people were forced to try telemedicine or RPM because of the pandemic, those things lost their new and scary status. Instead, things like telemedicine are now something people understand, have already used, and have experienced the benefits firsthand. Necessity forced familiarity.

Secondly, patient adoption of this shift in healthcare delivery is in part a marketing problem. How are patients even to know options exist to receive care outside of their traditional hospital or clinic? If they don't learn about it from their doctors, friends, employers, or on social media, they may not even think to ask Dr. Google if at-home options exist. The pandemic solved those two major barriers to patient care in home from a patient adoption viewpoint.

Telemedicine

We won't cover basic telemedicine in this book since it is widely covered in the news, analyst reports, books, videos, and conferences already. Telemedicine – whether the form factor is video, audio only, text, email, or messaging app is here to stay. Beyond basic primary care, telemedicine has spread widely to behavioral health and even specialists like cardiologists and nephrologists. Healiom is a startup to watch in the telemedicine specialist space that con-

nects individuals to specialists in minutes 24/7, no matter where they live in the US. This is a big deal because the average national wait time for a physician like a cardiologist or nephrologist is 24 days, which is a long time to wait when someone is dealing with chronic heart failure (CHF), kidney disease, or COPD. Another major problem Healiom solves is the actual access to specialists. Those who live in remote or sparsely populated areas of the U.S. may have to travel hours by car to see a specialist like a cardiologist. Traveling hours to see a physician is a barrier many people aren't able to overcome, including those without reliable transportation or flexible work hours. When virtual specialists are combined with point of care diagnostics and remote monitoring, even someone who lives 5 hours from a hospital can have access to care as if they lived in a major city.

Subscription Model Primary Care

One Medical is the leader in membership-based primary care. What membership-based means is that people need to pay a monthly or annual subscription fee to be a patient in the medical practice. Concierge doctors have been using this payment model for years, One Medical just democratized the payment model to millions of more patients that would not be able to afford a concierge doctor but can afford

One Medical. One Medical costs $199/year to join as a member, and then in-person physician visits are billed as a normal primary care doctor's appointment to the patient and their insurance company, with a typical co-pay. The main reasons to join a practice like One Medical is easy access to the physicians, in-clinic blood labs, wearable device integration, free 24/7 telemedicine, and easy medication refills. While that sounds like it should be the norm in primary care, unfortunately many primary care clinics don't have those features. One Medical went IPO in 2020 and is now publicly traded.

One Medical acquired Iora Health in September of 2021 for over $2B (all stock). Beyond the giant price tag, this is significant because though One Medical's membership base has been growing, the addition of Iora Health means the addition of large numbers of Medicare patients, a market One Medical hadn't tapped into until now. One Medical had been known as FFS (fee-for-service) primary care for the wealthy well – meaning relatively healthy and affluent people. Iora Health focuses on seniors over 65 years old covered by Medicare and Medicare Advantage risk-based programs. According to CMS, the Medicare population is expected to grow from about 62M in 2020 to 70M by 2025, which explains why a growing company like One Medical would want to expand into this population segment.

Forward is another membership-based subscription model primary care office, but it works differently than One Medical. Forward charges a monthly subscription fee that covers all their services, including labs, remote monitoring, doctor visits, telemedicine, some cancer screenings, and women's health. As of 2021 it was $149/month out-of-pocket, and they do not accept health insurance.

Retail Pharmacy Chains

CVS/Aetna, Walmart, Walgreens, and Costco

CVS bought the walk-in healthcare provider chain MinuteClinic back in 2006, and has continued to offer nurses, physician assistants and primary care in over 1,100 CVS retail pharmacies. They cover many of the medical issues that would otherwise drive someone to their Primary Care physician, Urgent Care or even the ER, including bladder infections, eye, nose or throat infections, vaccinations, minor wounds, and skin conditions. In recent years they have expanded into chronic care management for some of the most expensive diseases to treat, such as diabetes, hypertension, and coronary artery disease (CAD). In January of 2021, CVS started offering behavioral health in a few of their stores, licensed therapists or social workers that are also available on nights and weekends. CVS has offered standard telemedicine visits with transparent pricing for years

and has now added behavioral health to their telemedicine offerings.

A major departure from traditional U.S. healthcare, most of the retail clinics including CVS, Walmart, Walgreens, and Costco's healthcare prices are transparent for their customers. People know exactly what a healthcare visit or encounter costs before the visit begins. Anyone who has seen a doctor or nurse in the U.S. knows that this is not the norm. For many healthcare appointments including primary care, procedures, hospitalizations and even surgery, it is impossible for someone to know how much they will be charged before that healthcare visit takes place. The only way to find out how much something costs is after the provider bills the patient and their insurance company. The retail pharmacy clinics have simplified pricing and posted the price list both online and in-store for everyone to see and easily understand. The retail pharmacies aren't the only entities posting pricing. Carbon Health is a telemedicine and brick-and-mortar chain that covers primary care, urgent care, lab, imaging, wound care, and mental health that takes most major insurance plans and Medicare. They post all their list prices on the website in an easy-to-read format. Carbon Health also makes getting an appointment easy, fast, and seamless with clear same-day and next-day availability either by telemedicine or in person at one of their brick-and-mortar locations.

Walmart has become a one-stop-shop for everything, which is great news for the 90% of the U.S. that lives within easy driving distance of a Walmart. In addition to their massive grocery and retail store, some stores have added pharmacies, blood labs, vaccines, optometry, dentists, hearing checks, and x-rays. Walmart is now expanding their primary care style clinics to more stores in addition to behavioral health. As of 2021, a 45-minute counseling session costs $45. Walmart's goal is healthcare affordable enough for their uninsured customers and the communities they serve.

One other interesting shift in healthcare has to do with Walmart's employee health benefits. As mentioned previously, Walmart has over 1.6 million employees in the United States, and they are self-insured. It is in Walmart's best interest that their employees access high quality, low-cost healthcare. Walmart has been sending employees across state lines to receive cheaper healthcare for expensive procedures like some surgeries. It is widely known that prices hospitals charge for expensive procedures like surgery and some tests can vary widely depending on multiple factors, including zip code. The cost of transportation and a potential hotel is tiny in comparison to the cost savings for Walmart of tens of thousands of dollars for just one employee to get one procedure.

Like Walmart and CVS, Walgreens and Costco have also jumped into the provider space, and both are adding primary care style clinics to their in-store pharmacies. The best healthcare is the care that gets done. By making it easy for people to see a healthcare professional in their daily and weekly workflow of grocery shopping and drugstore pick-ups, the healthcare visit may actually get done. Walmart, CVS, Costco and Walgreens are increasing the odds someone has their annual physical, or that mole checked, or those labs drawn, or that anxiety checked, or their blood pressure monitored. Proximity and convenience matter and can be the difference between someone getting the healthcare they need or putting off a healthcare encounter, sometimes indefinitely. Delaying care raises the risk of disease or condition progression and makes it harder to treat in the future. Like Walmart, most of these retail clinics have transparent pricing so people know what the healthcare visit will cost before the actual visit.

Self-insured vs Fully-insured Employer Health Insurance: What's the Difference?

A brief explanation on the difference between the two models for context and background

In the context of employers offering health insurance employee benefits, "self-insured" means that instead of using an outside insurance company, the employer functions as the insurance company for their employees, taking on the financial risk and assuming the cost of paying claims. While the employer is the entity assuming that financial risk, some self-insured employers outsource the insurance plan management to outside insurers. This contrasts with an employer being fully-insured. A fully-insured plan is one where the employer pays monthly health insurance premiums for each of their covered employees to an outside payer like Anthem, United-Healthcare or Cigna. The employer does not assume the financial risk, only the predetermined recurring monthly premium cost.

Direct-to-Consumer Diagnostic Testing

According to FutureWise Market Research, the at-home diagnostics industry is expected to reach $7.8B globally by 2028. Many startups and large established corporations are already working on diagnostic lab testing in-home.

Quest and LabCorp dominate the market of brick-and-mortar blood labs, and they have their own at-home blood labs available direct-to-consumer. People can now order blood labs for themselves by

buying LabCorp or Quest kits online – no doctor's orders needed. There are startup companies that work the same way, including Let'sGetChecked, Everlywell, and Ixcela. The prices for each test kit typically range from $60-$300. Since these are direct-to-consumer, the cost is paid for out of pocket or by using an HSA/FSA account, and most are not reimbursed by health insurance. There are some exceptions, as some states do require insurance companies to cover the cost of at-home STI or HIV testing, and during the pandemic, the U.S. Government requires insurers reimburse for some COVID-19 at-home tests.

Direct-to-consumer test kits can include things like a CBC (complete blood count), liver function, kidney function, thyroid function, cholesterol, A1C, DNA paternity testing, fertility, allergy, and in case anyone has a hot date coming up - most of the STIs. For the blood tests, when the test kit arrives in the mail, typically the individual pricks the end of their finger to get drops of blood from the capillaries. The capillary blood drips into an included container or onto a spot test, and then the kit is mailed back to the company in a postage paid box.

The test results are usually available within about 1 week. Because of the delay due to mailing the kit to a lab to process, these types of direct-to-consumer tests are good for people to understand their health for preventive reasons, but they usually aren't ade-

quate for medical problems that would benefit from a treatment immediately, such as a prescription antiviral medication for influenza, HSV, and COVID-19, or an antibiotic for bacterial infections like strep throat and urinary tract infections (UTI).

There are two reasons most people take lab tests. The first reason is to check that there are no problems that need addressing. The second reason is to be able to take an action if a lab test is abnormal or could be improved. Sometimes that action is taking additional tests, a new medication or dosage adjustment, supplements, exercise, or dietary changes. Ixcela has an at-home blood test using capillary blood to analyze the microbiome. This is important because it is a much more pleasant test for most people to use, and the lab results come with specific action items someone can use to immediately improve their health. Ixcela's proprietary analysis of the blood test can determine if an individual's microbiome is imbalanced, and can recommend supplements, foods, and behavior that can rebalance their microbiome. Much of the value is in Ixcela's analysis and recommendations for action.

What's a Microbiome?

The microbiome is the collective ecosystem of colonies of living microorganisms -bacteria, viruses, and fungus - that live in and on every species on earth, including humans. Bacteria strains aren't all bad or dangerous, many strains help human health. When talking about the microbiome in a healthcare context, it usually refers to the gut microbiome found in the large intestine that enables good digestion and nutrient absorption, though each organ and body part has their own unique microbiome. The microbiome has a symbiotic relationship with every living thing on earth and is a requirement for life to exist. Environmental microbiomes are another area science has been making significant progress on collecting, classifying, and understanding for the past 5-7 years.

The cost of the tests is a significant factor with these direct-to-consumer tests. Since most of the lab tests are also standard tests ordered by a primary care doctor annually or when there's a problem, for people with health insurance and a primary care or specialist doctor, the direct-to-consumer tests can be an unnecessary expense when not covered by insurance. They can instead get lab orders from their doctors for tests that would be covered by their insurance. For those individuals, the $60-$300 out-of-pocket cost per panel adds up quickly if someone wants to check their [e.g.] cholesterol, A1C, liver function, STIs, B12 and ferritin levels, suddenly they are paying for 6 or 7 lab panels. When ordered by a healthcare professional and taken by or

in the presence of a healthcare worker, those same panels would likely cost significantly less in co-pays for people who are covered by Medicare, the VA, or health insurance.

Beyond the initial costs, there's another issue that needs to be addressed with the direct-to-consumer lab tests. Because diagnostic labs can be crucial when determining a diagnosis, a physician must be completely sure a test is accurate before taking a further action, such as prescribing a new medication, adjusting a dosage schedule, or ordering more expensive or invasive tests. If an individual has abnormal lab results from a direct-to-consumer lab kit and contacts their doctor, the first thing a physician will probably do is repeat the diagnostic test, but this time in the presence of a healthcare professional such as at a brick-and-mortar lab, by using an in-home nurse or phlebotomist blood draw, or by using a virtually monitored test by a certified healthcare representative. In these scenarios, the physician can be certain the test was taken correctly and by the right patient so they can trust that the test results are accurate before deciding what action to take next. Even a test as simple as a pregnancy test is subject to repeat. The first thing a physician will do is order labs to repeat

the pregnancy test in a clinic or brick-and-mortar lab complete with certified results.

Virtually Monitored Diagnostic Labs at Home

While some diseases and conditions do require daily testing like glucose levels for diabetes, physicians haven't typically ordered more complex, self-administered diagnostic testing in the home without the presence of a healthcare professional like a nurse or home health aide. Beyond health systems and hospitals wanting to keep diagnostic testing under their roof, there are a few reasons point-of-care diagnostic testing in the home hadn't taken off until recently. First, as mentioned, the main U.S. payers are not all yet consistently reimbursing for many of the in-home diagnostics that are self-administered without the presence, order, or guidance from a healthcare professional, outside of any specific government ordered reimbursement. Secondly, the complexity and sensitivity of the process of specimen collection and running the test can lead to a reduction in accuracy for inexperienced test-takers. Lastly, until the past few years, telehealth hadn't integrated proof of a clean chain of custody for medical data from a patient's digital and biological measurements. The problem with basic telemedicine is that the provider doesn't have easy access to quantified data about the patient with a HIPAA compliant, clean chain of custody.

The science of medicine is based on facts that are quantified: vital signs, imaging, and lab testing are examples of quantified medical data on an individual.

As mentioned in chapter 4, TytoCare is an FDA cleared telemedicine tool kit that provides a clean chain of custody for vital sign data from clinical grade medical devices at the point-of-the-patient. The TytoCare data is HIPAA compliant and secure, and a healthcare professional like a physician or nurse can be virtually present during the exam. That healthcare professional has access to the data directly from the FDA cleared devices, including the connected stethoscope, pulse oximeter, and otoscope. The pandemic illustrated that a clean chain of custody with at-home healthcare is important for devices like TytoCare as well as diagnostic lab tests like COVID-19 rapid antigen tests.

Physicians need objective quantified data with a clean chain of custody to take certain actions. There is a great reason for this, beyond the obvious facts that human beings can and do make simple errors when transcribing numbers or could be using an inaccurate device. From start to finish, every patient encounter within the healthcare system requires data that needs to be recorded, data that is objective and accurate, and data that has a clean chain of custody. Healthcare must assume any data that hasn't been validated or has a broken chain of custody could be inaccurate. A clean chain of custody of quantified

data is required for physicians and other healthcare professionals to feel confident they are providing the right care to the right patient at the right time. Anything less may cost lives.

It's not possible for patients to come into a clinic every time they may suspect they are getting sick or were exposed to someone with a contagion like influenza. The U.S. healthcare system is not set up for fast, easy, and early mass testing to prevent the spread of diseases like influenza. On the patient's side, going to a brick-and-mortar clinic means that person probably needs to take time off work, hire childcare, and get to the clinic, all while potentially losing wages they can't afford to lose. If someone is contagious, it is easy to expose other people at the clinic, which could have catastrophic consequences for those who might be in the clinic at the same time, especially for those who are immunocompromised.

In the near future, at-home diagnostic lab testing certification will probably be necessary for more expansive payer reimbursement as proof that the correct test was correctly administered to the correct patient. Physicians will need proof that a lab test was administered and interpreted correctly before they can make a medical determination and take further action. The CDC notes that about 70% of medical determinations are based on lab testing, which is why physicians need absolute proof that they can rely on the accuracy of any lab test they order.

With the shift to at-home diagnostic lab testing, it is important to have a virtual healthcare professional or guide in real-time instruct and watch the patient collect the specimen, run the test, then interpret and certify the results. Even a simple blood or spit test can be confusing for people who don't work in healthcare or don't get frequent lab testing done. It can be important from a certification standpoint outside of healthcare as well, especially for tests like a required employee drug test or a test like COVID-19 to attend school or enter a country.

Patrice Harris, MD is the co-founder and CEO of eMed Digital Healthcare, a growth stage startup changing the paradigm in diagnostic laboratory testing. She was previously the president of the American Medical Association (AMA), so she has a deep understanding of what is important and required by physicians across specialties to help them care for and improve the lives of their patients. She helped build the eMed digital platform with the goal of democratizing healthcare by shifting diagnostics to the digital point-of-care of the patient, wherever they are located at the time, including at home, while traveling, or even at work. During the pandemic, eMed built the software platform and team of live, virtual eMed certified guides-on-demand for at-home, digital point-of-care diagnostic testing. eMed works with companies like Abbott Diagnostics to sell, ship, manage, administer, and certify at-home testing,

including Abbott's 15 minute at-home rapid antigen test for COVID-19.

One of the difficult issues with a COVID-19 rapid antigen test is that unlike at-home tests such as pregnancy tests, a COVID-19 test requires multiple exact steps for accuracy. When dealing with medical diagnostics, accuracy is a stringent requirement. In some cases, an incorrectly administered medical test can have negative ramifications, from spreading an infectious disease to missing a medical problem that results in the death of a patient.

The eMed enabled COVID-19 rapid tests are available for next day delivery on the eMed website or through partner distributors like Optum's online store. The test taker downloads the app to their smart device and starts the test. The live certified eMed proctor initiates a call with the patient on video. That trained, certified proctor walks the individual through taking the test, including how to use the nose swab and insert it into the test card, and how to add the exact amount of reagent. The proctor can see the test card on video the entire time, and monitors the test card for 15 minutes, and then works with the test taker to interpret the results. The eMed process is authorized by the FDA and meets the CDC requirement for re-entry to the United States after traveling internationally.

The steps of certifying the test, patient identity, and results are important, and are or will be a requirement for international travel, insurance reimbursement, prescriptions, school, court-ordered, employer-ordered, and physician-ordered tests across many diseases and conditions. For COVID-19, certified test results may be required intermittently for the next few years to enter places like schools, cruise ships, airplanes, sports stadiums, warehouses, conferences, and some countries. eMed has the capabilities for certified, guided diagnostic test kits for other diseases including influenza, strep throat, STIs, yeast infections, and urinary tract infections, a leading cause of primary care visits. People could have a first-aid box of test kits in their homes for common ailments. At the first sign of a symptom, they could immediately test for common diseases and medical problems right then and there with an eMed virtual guide. That replaces the need to physically go to a clinic in the next days or weeks, which could delay a diagnosis, delay any treatment, and could even result in spreading an infectious disease. Any treatment delay could result in a much poorer patient outcome, including hospitalization or even death.

eMed's digital point-of-care platform is a solution for that missing link in virtual care - Quantitative Telemedicine with a clean chain of custody.

eMed's certified medical proctors create the all-important data chain of custody required in healthcare, so the test results can be used by a physician or other healthcare professional to take an action like prescribe a medication or diagnose a disease, and those results can be used by the airlines as official, documented proof of a negative test for activities like entering the United States from outside the country.

In fact, as long as documented proof is needed for activities like travel, eMed makes travel and cruising significantly easier and safer. When Robin was in Canada in the spring of 2022, eMed made her life much simpler and worry free. While most people returning to the U.S. had to find and physically go to a testing facility to take a COVID-19 test with certified results within one day of their flight, Robin was able to test from her hotel room late the night before departure. She immediately got certified proof of her negative test, and because eMed works seamlessly with airlines to provide this proof, it took almost no effort to complete. Not only was this more efficient, it was also considerably safer because Robin didn't need to go to a testing site during normal business hours and potentially be exposed to someone who might be contagious. She just packed 4 tests before leaving the U.S. so she had them on hand. eMed also works with many of the cruise lines to make sure everyone who comes onboard tests negative for COVID-19. We all saw what happened with

cruises at the beginning of the pandemic and just how quickly a virus can spread in that environment. Testing people before they board a cruise ship is an important part of getting that industry back up to 100% while protecting people's health. eMed makes that easy to do, so people can enjoy their cruise, not line up for a medical test.

Another important problem eMed solves is getting treatment to patients quickly with their TEST-TO-TREAT ™ program. The earlier almost any disease, illness, or condition is correctly treated, the better the patient's outcome. In many cases, early treatment can be the difference between a medication working well and not working at all, which could mean the difference between life and death. Antiviral medications are a perfect example. When using antiviral medications, time is of the essence. Antivirals should be taken at the first sign of a symptom because they work by stopping the virus from replicating. Typically, someone needs to start taking an antiviral within the first 5 days for it to work correctly, and the earlier the better. If taken within that limited time frame, the antivirals can significantly reduce the chance of a hospitalization or ICU stay from a severe case of COVID-19. But when an antiviral is taken too far into the disease progression, it will have little to no effect because the virus has already replicated. Fast and easy access to these new antivirals is an important part of ending the pandemic and saving

lives. As previously mentioned, for some people, getting to a brick-and-mortar clinic or testing site to see a healthcare professional for a test and prescription can be difficult and sometimes impossible to accomplish within a day or two of experiencing the first symptom. eMed solves that problem by providing a digital point-of-care experience for the patient, no matter where they are located.

Since eMed's proctors create that important medical data chain of custody with certified test results, if the result is positive, eMed can immediately initiate a telehealth appointment with a healthcare professional to write a prescription for an antiviral, have that prescription automatically sent to a pharmacy, and the patient can then elect to have the medication delivered that same day or the next day, depending on the pharmacy. When using eMed, within two hours to one day of the very first symptom, a patient can have the first dose of an antiviral medication treatment in their hands.

The digital point-of-care diagnostic testing process with companies like eMed is seamless, easy, and can be used when and where the patient wants to do it, 24/7.

A Startup + Multinational Corporation Partner to Solve a Major Pandemic Problem

Many healthcare startups wonder if partnering with an established, giant multinational corporate industry leader is possible. Even if it is possible, many entrepreneurs worry it could take years to set up and launch any joint venture or partnership. The truth is while some partnerships may take years, there are many examples of startup and large corporate partnerships that negotiate, execute, and launch in a much shorter time period, especially when the partnership can positively impact millions of people and save lives.

While the pandemic uncovered many healthcare related problems, one of the most pressing problems was easy, inexpensive, and accessible testing for COVID-19. Testing was and is crucial for many activities including going to grandma's, school, or the office. It was and still is required for some activities, including going on a cruise, entering certain countries, or getting a prescription for a medication.

In the summer of 2020, few COVID-19 diagnostic tests existed, and PCR testing was only collected and analyzed in a laboratory, testing site, or a clinic. Much of the world was at a standstill, and in the U.S. patients with severe COVID-19 were overwhelming the American healthcare system. College students couldn't easily go back to campus, many K-12 kids were stuck at home, employees who could work remotely did, and many people just didn't leave home. There was a general fear of inadvertently catching or spreading COVID-19 because there was no easy way to frequently test people quickly, accessibly, and inexpensively.

For more than 100 years, Abbott has been a trusted market leader and innovator across much of the spectrum in healthcare. Abbott is a world leader in diabetes with their cutting edge, groundbreaking

Freestyle Libre CGM discussed in chapter 4. Abbott is also a leader in cardiovascular health, neuromodulation, and even medical nutrition with the most trusted, gold standard products including Ensure and Pedialyte. In response to the pandemic, Abbott developed a new point-of-care rapid antigen diagnostic test that could change the pandemic game and impact the lives of hundreds of millions in the U.S. alone.

In August of 2020, Abbott Diagnostics received FDA Emergency Use Authorization (EUA) for their point-of-care lateral flow test for COVID-19 with accurate results in under 15 minutes. The EUA was specifically for boxes of 40 tests with 1 giant bottle of reagent, designed for healthcare professionals to administer at clinics and testing sites. These new nasal swab rapid antigen tests meant the testing sites and clinics didn't have to ship patient specimens to a physical lab like a PCR test, they could instead test people on-site and provide them with the results in 15 minutes. That would allow mass testing before entering venues like an office building, school, flight, or stadium.

Because the tests shipped in large quantities, including 1 large reagent bottle meant to be used for the 40 tests in each box, the tests weren't originally meant for people to take at home. They had EUA specifically for healthcare professionals like doctors, nurses, medical assistants, and pharmacists to administer at physical locations such as clinics and testing sites.

eMed was founded at the beginning of the pandemic and had already started building a software architecture and large pool of virtual certified proctors as a digital point-of-care service to help people take diagnostic tests outside of a clinic, such as in the home, office, or hotel room. eMed presented Abbott with the full organizational, strategic, and marketing plans to split up and package the Abbott COVID-19 tests into individual boxes, clear the FDA

with the new consumer friendly boxed tests and miniature, single use reagent bottles, and sell them direct-to-consumer. In September of 2020, the two companies signed a term sheet and by October, they had collaborated on a usability study for the FDA on the in-home, proctored version of the rapid antigen tests that people could buy directly and safely administer with the virtual certified proctor instead of traveling to a physical testing site or clinic.

The eMed-Abbott partnership worked. In December of 2020, the consumer-friendly, individually packaged rapid antigen tests with the eMed certified proctors received FDA Emergency Use Authorization for people to administer wherever they were located, including their home. The fact that these tests could be done in the home and have certified results was a game changer. Many schools, offices, and countries require or have required official COVID-19 negative test results to enter or attend. Before eMed's and Abbott's partnership, people would have to physically go to a clinic or testing site to get tested by a healthcare professional to qualify as certified test results. Despite precautions like masking and social distancing, physical healthcare venues like testing sites always come with the risk of potentially exposing people to contagions, whether that's COVID-19, influenza, or even a common cold. This one partnership led to tens of millions of Americans being able to safely test at-home and avoid the risks, time, and travel to in-person testing sites and clinics.

IV Medication at Home

Some of the main private payers are pushing recurring IV medication from the hospital infusion centers to the patient's home or a free-standing IV clinic.

The main reason for this push is cost. Brick-and-mortar hospitals are incredibly expensive to operate, and like any business, they have their cost centers and profit centers. Some hospital departments make money, some departments lose money, but all departments are necessary. Which means that some hospital products or services must have high profit margins to support the hospital – and the infusion clinic is one area that can be a profit center. Everyone agrees drug costs in the U.S. are exorbitant, and typically the pharmaceutical companies shoulder the blame. In some cases, it is the hospitals driving up the cost of drugs.

If you have seen Robin's keynotes or read her 2015 book "The Patient as CEO", you are aware she gets an IV biologic medication called Remicade every 6 weeks. For the first 15 years, she had it administered in the hospital infusion center. Her local hospital charges $28,000 just for the medication, plus thousands more for the auxiliary supplies and time in the infusion clinic.

Six years ago, her insurance company declared that Remicade would only be covered if done at home or in a freestanding infusion clinic. Robin now uses an in-home infusion company called Option Care, and the cost of the medication went from over $28,000 to less than $2,000 per infusion. Over a 5-year period, that comes out to a difference in bill-

ing of $1M, and Remicade is the type of medication patients can be on for life. Janssen (J&J) isn't the entity that is responsible for the extremely high cost of their medication, in this case the hospital is the entity that has increased the price to unreasonable amounts – so unreasonable that payers have taken notice, and the hospitals are losing those patients to at-home treatment.

At-home infusion is a huge growth area of healthcare with significant opportunities. Currently Option Care controls around 90% of the $14B alternate site infusion clinic market in the U.S. – aka free-standing clinics and at-home IVs. Option Care started as Walgreens Infusion but is now owned by a Private Equity company with Walgreens as a minority owner.

While we're seeing IV medications leaving the hospital infusion clinics, companies like Alacrity Care remote patient monitoring for oncology enables treatments to leave the hospital infusion clinics even more safely. While some IV medications may cause problems around the time of the infusion, for many treatments, the real risks happen in the week following the infusion. Remote patient monitoring is an important component for some of these IV medications.

Over the next 5 years, most IV medication infusions will be able to be done in-home. Instead of hospitals losing that important revenue stream, the ones

that start offering in-home IV medication with their own staff, with the medication coming from the hospital pharmacy will be able to retain some of that revenue. The alternative is to let Option Care grow bigger to handle the influx of patients shifting the IV treatments to their home over the next 5 years. Once patients experience the convenience, consistency, and co-pay price reduction of having their IV medication infused in-home, most never want to go back to the noisy, expensive hospital infusion clinic.

Direct-to-consumer IV hydration and IV OTC (over the counter, aka non-prescription) medication and vitamins have also taken off in recent years. Companies like The IV Doc offer consumers IV hydration on demand. This doesn't go through the patient's doctor or health insurance, though The IV Doc will send the patient an itemized bill with CPT billing codes to submit to the patient's insurance for reimbursement after the treatment. Just like Uber, the consumer orders a PA (physician's assistant) or nurse-on-demand through their app for IV saline, IV anti-nausea, IV anti-inflammatory OTC meds, and IV vitamins. For $200-$300 out of pocket for the basic saline liter, The IV Doc will be by the patient's side usually within a couple of hours. Perfect for chronic disease patients, GI viruses, and food poisoning cases to avoid the ER or hospital, though many of The IV Doc's main customers are actually people with alcohol hangovers …

Urgent Care at Home

CMS launched a new program during the pandemic called the ET3 Model. While it launched during the pandemic, it was in the planning long before 2020, and ironically, the launch of the program was delayed by the pandemic.

The ET3 Model stands for "Emergency Triage, Treat, and Transport Model" and is specifically for ambulance suppliers and hospitals with ambulances. Instead of automatically bringing all patients who call 911 to the hospital ER, for Medicare fee-for-service patients, this model enables ambulances to treat the Right Patients at the Right Time and Right Place.

The way it works is when someone calls 911, the ambulance is deployed to the patient in need. The healthcare professionals (nurses, physician assistants, paramedics and / or medical technicians) asses the patient. If the ambulance team has the ability to take care of the patient in place, they do. If the patient needs a doctor consultation, the ambulance professionals call a doctor on video, right then and there. If they are still not able to take care of the patient in place, they transport the patient to the right place for the problem in need of treating: primary care, dialysis, urgent care, mental health facilities, and only as the last resort, the emergency room.

Not All Medical Emergencies Require an Emergency Room.

This is a significant shift, as previously if a patient needed to see a doctor or nurse that same day, the only choices were Urgent Care or the Emergency Room. But that is not the best place to treat all patients and all emergencies. If someone needs stiches, that doesn't necessarily need the expertise of the team in the ER. If someone needs dialysis, a dialysis center is a much better place for that patient than an ER. When people are immunocompromised, one of the most dangerous places is the ER due to the potential exposure to infectious disease. It can be safer for the patient to be treated at an alternate location to an ER unless they need a highly skilled trauma team, emergency surgery, or other life-saving measures only found in the ER or hospital.

While the ET3 Model is currently a voluntary 5-year payment model with 186 partners in 36 states, this concept is spreading beyond Medicare fee-for-service patients.

One example is DispatchHealth. DispatchHealth is Urgent Care On-Demand that substitutes for an ER visit, similar to the Medicare ET3 Model, but can be used by any patient - whether that patient is covered by CMS, a commercial policy, or uninsured. A patient can call, use the app, or go on the web-

site to contact DispatchHealth for urgent care, and the DispatchHealth ambulance with arrive within 2 hours with a medical technician and a nurse or physician's assistant, outfitted with more supplies and equipment than a traditional ambulance. Based on 30,000 patients seen in the last few years, the co-pays vary from around $5 for Medicare with secondary insurance, to about $45 for a commercial policy, and $275 flat fee for uninsured patients. Patients can save a considerable amount of money in co-pays by avoiding the ER.

Currently DispatchHealth is available in over 30 cities across the U.S. and is expanding. This is a startup with staying power. Not only are they the right type of company at the right time, but they have over $400M of funding with a $1.7B valuation. Their impressive array of investors includes Humana, the third largest private payer in the US. Humana is now using DispatchHealth for their Medicare Advantage Members.

In addition to Urgent Care, they also coordinate up to 30-day hospitalizations-at-home and a marketplace for ancillary services. DispatchHealth has forecasted that by 2023, they will have saved the healthcare system over $2B in cost savings.

Kidney Care at Home

Both Medicare and Humana started shifting dialysis from the dialysis clinics to the patient's home back in 2019, and this is another shift that the pandemic has accelerated. The Department of Health and Human Services (HHS) wants to shift 80% of newly diagnosed end-stage renal disease (ESRD) patients to either get a kidney transplant or move to home based dialysis by 2025.

As of 2018, two companies controlled ~90% of the $24.4B dialysis market in the US. This shift to the patient's home is a major opportunity space since it requires a significant capital expenditure for existing dialysis companies to buy or manufacture new, portable dialysis machines instead of the large ones fixed in place at the clinics.

One example of innovation that hospitals can leverage is Outset, a startup company that went public in 2020. Outset is a newcomer in the dialysis machine space, and has a beautiful, self-contained, easily portable dialysis machine to be used in home or moved to the patient's bedside. If a hospital treats a lot of late-stage renal patients, instead of prescribing dialysis at one of the two dominant dialysis centers companies, the hospital can purchase some Outset machines and dialysis technicians and/or nurses to go to the patient's home instead of the patient traveling

to a center. From the hospital's point of view, they are providing more of a continuum of care as they are both the prescribing and monitoring physician in addition to administering the 4-hour long dialysis 3 times a week for each patient. In addition to dramatically raising that patient's quality of life, the hospital has a new revenue stream they previously referred outside of their system.

Many other companies have entered the at-home dialysis space, including dialysis giant Fresenius. Fresenius acquired kidney care company NxStage in early 2019 for $2B. NxStage's main product is System One, a portable hemodialysis system. The machine can be operated by the patient, so a healthcare professional doesn't need to be physically present, all these machines need is access to an outlet and tap water. Fresenius' Chief Medical Officer Dr. Frank Maddux has announced their goal is to increase in-home dialysis to at least 25% by 2022. A major benefit of having a permanent in-home machine is that the patient can get dialysis more frequently and for longer periods of time, instead of the standard 3X a week done in the dialysis centers. The NxStage machine is also small enough for the patient to take with them while traveling, something patients can't easily do if they need to go to a dialysis center 3X a week. Instead of just surviving with kidney failure, the portability allows patients to thrive with kidney failure, complete with travel and activities that aren't

constrained around a busy dialysis center's availability during the workday. When dialysis is self-administered at home, the patient can use the machine around their perfect schedule, in the location and environment of their choosing.

CVS is extending their reach into patient lives by entering the dialysis space with an in-home machine called the Hemocare Hemodialysis System, designed by the famed Segway inventor and roboticist Dean Kamen at DEKA. Clinical trials started back in 2019, and assuming the machine clears the FDA, patients will soon have another option for getting dialysis in-home.

The great news is that even in healthcare, when faced with direct competition like these dialysis machine companies, patients could be the overall winners if companies are forced to provide better service and less expensive options to compete for patients. Similar to how direct-to-consumer (DTC) companies outside of healthcare need to focus on affordability, access, and customer experience, the healthcare companies who will win and retain market share are the ones who focus on affordability, access, and customer experience. This patient decision-making trend based on the patient's experience, price, and ease of access is typically referred to as "The Consumerism of Healthcare".

There are other startup companies entering the giant kidney care market. Strive Health is a startup that works with health plans, systems, and providers on a data-driven approach to kidney care. Using their AI platform, Strive Health can predict disease progression for individual patients, personalizing treatment and identifying the right behavior changes for the right patients, while also factoring in any co-morbidities. The Strive Care Team sees the individual where it's best for them, which could be in-home, the hospital, a dialysis center, or even the primary care office. Instead of the one-size-fits-all model of patients going into a clinic then a dialysis center, Strive Health works where the patient wants and needs it the most, not the other way around.

Hospital-at-Home

According to Precedence Research, inclusive of equipment and healthcare professionals, the home healthcare global market size in 2020 was over $167B. MarketsandMarkets valued the market even higher for 2020, at $181.9B with an expected growth to $274.7B by 2025.

While many of home nurse and medical aid companies have existed for decades, most focus on senior care assistance and usually don't have the capabilities to deliver acute care in the home setting. That is rapidly shifting as more hospitals and 3rd party com-

panies have begun to offer acute care in the home. Boston based Medically Home is one example of a company at the forefront of this trend. Medically Home works with hospitals to deliver acute and restorative care to patients in their home environment. Their total funding is over $274.5M, with key stakeholder investors including the Mayo Clinic, Cardinal Health, and Kaiser Permanente. That amount of funding and buy-in from well-respected and high-profile hospitals like Mayo and Kaiser means this is a startup with staying power and rapid growth potential. Dr. Margaret Paulson heads the Mayo Clinic's Wisconsin at-home healthcare initiative, and in an interview with NPR she stated that many acute care patients are well suited for in-home care, including those with heart failure, skin infections, and pneumonia. Many at-home hospital programs will provide internet access, a smart tablet for video calls, and even a landline for those patients who need it.

Mayo Clinic launched their main hospital-at-home initiative in May of 2020. Patients electing to be hospitalized at home for acute care, post-surgical care, rehabilitation, IV infusions and more have access to a hybrid of in-person care at their home combined with 24/7 access to virtual care. Patients can wear a wrist-based device that connects them to the virtual care team immediately with the touch of a button. They also wear smart, connected devices to moni-

tor relevant vital signs. About a year after launch, in June of 2021 Mayo Clinic's bone marrow transplant recipient Ann Arneson completed her post-op recovery successfully at home. This is significant as a bone marrow transplant typically requires a multi-week hospital stay. Because of the combination of in-home care and technology, Ann was able to be hospitalized at home which accelerating her healing and reduced her "hospitalized" time by 14 days!

While many factors go into why someone would recover at home more quickly from a surgery, transplant, or other medical event, just the ability to get a normal night's sleep in their own bed can make a significant difference. By avoiding the constant noise, sleep disturbances like vital sign checks, blood draws, and IV pole alarms in a hospital, a patient can usually sleep better at home. It is well known that adequate sleep can help someone recover from a medical procedure or illness more quickly. In addition to their normal pillows, mattress, and bedroom, recovering patients can be surrounded by their family, pets, possessions, preferred foods, and all the other conveniences and favorite things of their daily life.

There are many other companies making a foray into care at-home. Digital healthcare startup Ro was founded a few years ago to sell hair loss and erectile disfunction medication to men. Ro has since expanded into telehealth and in-home care, and not just for men anymore. Since Ro's founding in 2017,

they have raised $1B in funding with a valuation of $7B. Ro used some of that capital to acquire healthcare at-home startup Workpath. Workpath provides the software support providers can use to offer on-demand healthcare and diagnostics at-home like blood lab draws. For example, instead of a patient having to physically go to a blood lab, Workpath deploys a phlebotomist or nurse to the patient's home on-demand. Workpath is available to about 95% of all patients in the US, and works with clinical trials, Fortune 500 companies, and has a partnership with Quest Laboratories. Ro has publicly stated that since ~70% of all diagnostic decisions are based on blood labs, their vertically integrated platform of medication delivery, telemedicine, and nurse or phlebotomist deployment to the patient's home allows patients and providers to have a more seamless experience, especially when managing chronic conditions.

Ro launched a new virtual behavioral health service in the summer of 2021 called Ro Mind. Ro Mind is initially focusing on patients with anxiety and major depressive disorder, but we expect them to expand into most or all areas of virtual behavioral health over the next few years. With Ro Mind's direct-to-consumer business model, pricing is transparent and currently on a monthly subscription fee of $65. Ro Mind's behavioral health specialists can diagnose and prescribe medication.

Ro's main overall value proposition is an end-to-end seamless technology platform connecting the patient's doctor, nurses, pharmacy, diagnostics, and ongoing care virtually or in-home together in one place.

There are many companies that will provide the hardware and software needed for post-hospitalization care. Current Health based in the U.K. is good example of an enterprise startup with around $92M of funding that is used by many respected health systems and pharma companies, including Mount Sinai, the U.K.'s NHS, and AstraZeneca. In late 2021, Best Buy acquired Current Health for $400M.

The way Current Health works is when a patient is discharged from the hospital, ER, or Urgent Care, Current Health sends the discharged patient an at-home kit. Current Health will also arrange for DME (durable medical equipment like wheelchairs, hospital beds, or oxygen supplies), meal delivery, or at-home lab draws. They are that single point of contact the patient can rely on for everything they need while at-home. Current Health monitors RPM devices such as a pulse oximeter and blood pressure device and will immediately contact the patient and healthcare team if something changes, like a drop in blood oxygen levels. Current Health's platform can then be used for a member of the healthcare team to immediately drop in by video or text to assess

the situation. Current Health can arrange a virtual visit with a physician later that day and integrate all their data into the provider's EMR. Current Health has also partnered with many other companies to deliver these in-home services, including ScriptDrop, a company that delivers prescription medications to all 50 states. According to Current Health, the hospital-at-home can result in 70% less readmissions, 35% decrease in length of stay, and 32% decrease in costs. Current Health also works with pharmaceutical companies to administer at-home clinical trials.

Aging in Place

Throughout the book there are examples of solutions that can help keep seniors in their own homes instead of living out their last years in a senior care facility. Some of these solutions can benefit patients and consumers of all ages, and some are focused just on seniors. The Lively Jitterbug is one example that is focused only on seniors. It is a stripped down, easy to use smartphone for seniors that connects to emergency services, Amazon Alexa, and even a personal operator to call for Lyft, which has partnered with Lively for a reduced rate for seniors with a Lively subscription. Lively has a line of products, including an app for smartphones and smartwatches, and other medic alert devices including the Lively Mobile Plus and the Lively Wearable2. The Mobile Plus is a

two-way communication device, similar in concept to a walkie talkie, with a speaker, microphone, and only one big button that can be clipped to a belt or worn around the neck with a lanyard. It is called a Personal Emergency Response System (PERS) and connects 24/7 with the care team and emergency services. The care team, including the family or other caretakers, can easily talk to the senior with the press of a button just like they would use an old-school walkie talkie, but with modern connectivity.

In a program that launched before the pandemic, Kaiser Permanente partnered with Best Buy to supply their Medicare patients and caregivers with an inexpensive version of the Lively Mobile Plus two-way communication device. The device has been personalized for Kaiser, and while the pricing may change, it is significantly less expensive than an iPhone or other top selling smartphone in the United States. In late 2021, the device was $10, with monthly subscription plans starting at around $20/month.

Some of the devices discussed earlier in the book for aging-in-place including the ElliQ smart hub and CVS' Symphony smart hub are just the start of this revolution. Over the next few years, more homes will have sensors on the walls, in addition to smart, connected appliances, allowing family members and the care team to remotely monitor people in-home. These solutions will be unobtrusive, with a focus

on both security and privacy. Because innovations like smart speakers and sensors can be programmed to record or relay information only when there's a potential problem, the senior's day-to-day privacy can be ensured.

The senior care industry is going through a consolidation. Just like the main payers are in a buying spree of physician groups and clinics, the senior care industry is going through a similar scenario.

Clinical Trials at Home

Clinical trials are another medical service that started shifting into the patient's home before the pandemic, and this shift has increased dramatically over the past year.

There are a few major problems in the world of clinical trials. First, it is very difficult to find enough patients to fill most clinical trials. Secondly, once the physical clinical trial site or sites are chosen, the potential patient pool is limited to the geographic location around the site(s). Limiting the patient pool to a geographic location can also limit that patient pool to a more genetically homogenous group. Until recently, most clinical trials were conducted using middle aged Caucasian males. Inside of healthcare, we know that some pharmaceuticals, medical devices, and software can work differently for each

patient depending on the patient's age, size, gender, genotype, and genetic expression. There has been a big industry push in recent years to recruit patients who reflect the diversity of the patients intended to use the product after it has cleared the FDA.

An example was recently published in The New England Journal of Medicine that shows new research on the decades-old PPG technology that pulse oximeters use to measure blood oxygen levels. It turns out pulse oximeters are more accurate on lighter skin tones than darker skin tones. Pharmaceuticals can cause significant damage or even death if given to a patient with the wrong genetic makeup for that drug. In fact, in early 2020 the FDA issued a warning and guidance for over 250 different commonly prescribed medications, including cancer treatments, blood thinners, and even a medication for ADHD that these drugs can cause problems based on an individual's genetics. The FDA guidance recommends genetic testing before prescribing some of these medications. There is an entire field dedicated to medication based on genetics called Pharmacogenetics.

Decentralized clinical trials (DCT), also called siteless clinical trials or remote clinical trials can help solve two major problems. Expanding the potential patient pool nationwide increases the ability to fill clinical trials and with a more heterogenous patient

genetic makeup than clinic trials tied to a physical location. This shift has led to the new term, *The Consumerism of Clinical Trials*.

There are some major players working on shifting clinical trials to the home. Cloud-based SaaS clinical trial software giant Medidata has been working on shifting clinical trials to the home for years. Medidata is the software most of the major pharma, contract research organizations (CRO) and biotech companies use to run clinical trials, and they were acquired by Dassault in mid 2019 for $5.6B. The software is an extremely important part of the clinical trial process, and great software can be the difference between a successful clinical trial and a failed clinical trial.

Science 37 is a startup that enables remote clinical trials by working with the pharmaceutical, software or device company. The way it works is Science 37 ships the medication or product to the home with a smart tablet. All the clinic visits happen on the smart tablet, and if a nurse is needed, a local nurse is hired to go to the home. If any tests are needed that can't be done in the home, such as a CT scan or MRI, the patient can go to a local imaging center instead of a fixed clinical trial site.

Late-stage clinical trials are by far the most expensive part of drug development, and they are the

hardest to administer. Science 37 is now publicly traded on Nasdaq, but pre-IPO investors include Sanofi, Novartis, and Amgen, all giants in the world of biotech. Sanofi is the world's 5th largest pharma and Novartis is the world's 2nd largest pharma, as measured by prescription drug sales.

CVS recently got into the clinical trials space. About 80% of clinical trials aren't filled with the number of patients they need to succeed. CVS states that they want to bring clinical trials to everyone, because currently only 4% of the U.S. participates in clinical trials. CVS Health originally partnered with pharmaceutical companies on potential COVID-19 treatments and vaccines, and was responsible for finding, qualifying, and matching 300,000 volunteers to relevant clinical trials. They are now expanding outside of COVID-19 and want to focus on 3 main areas: recruiting patients; administering the clinical trial product at the patient's home or in-pharmacy; and retrospective studies in the real-world environment.

Because of CVS' giant national footprint, they are able to reach people in almost every corner of the country. They are planning on leveraging data and local communities to significantly increase the number of people who are aware and have access to appropriate clinical trials. That national footprint also allows them the labor force and placement to administer clinical trials in a decentralized way, meaning the

patient doesn't need to be located in a specific geographic area to take part in any given trial.