



KARTEN:DESIGN

A Visual White Paper Series

Vol. / 03

The Luxury of Choice: Creating a Positive Consumer Experience in Healthcare

Healthcare is in flux. It can be an intimidating time, but it's also a time of great opportunity for companies that can understand the movement and the human needs driving it, and respond with meaningful innovation.

KARTEN:DESIGN



KARTEN:DESIGN

A Visual White Paper Series

For the past 32 years, Karten Design has been creating extraordinary experiences between people and products. In that time, we've learned a lot about people, emotion, and behavior. Our Outsights series takes these learnings and applies them to current trends in medicine and health, giving product developers the keys to creating exciting, successful solutions that stick.

Table of Contents:

- 3 **Introduction**
- 4 **State of the Industry**
- 7 **Challenges**
- 12 **Solutions**
- 25 **Outsights In Action**
- 27 **Industry In-Depth: Virtual Reality**
- 32 **Expert Interview: Larry Chu, MD, MS**

The Luxury of Choice: Creating a Positive Consumer Experience in Healthcare

Consumerization has revolutionized the way entire industries operate. In the service and consumer goods industries, it's the force responsible for mobile bank deposits and location-based advertising on smart phones. Healthcare, though long sheltered from this trend by regulation, cannot afford to ignore consumerization as technology, regulation, and economics converge to empower patients. Once passive participants simply receiving care, patients today are taking on a greater responsibility as decision makers—in some cases with the power to make or break a brand.

To be successful, solution providers must understand the emerging “health consumer” and the dynamics that influence their decisions. The consumerization of healthcare is changing how people research and select care, where and how they access care, how people communicate with their care team, and what they expect from their care experience. This shift is requiring solution providers to innovate new business models, capabilities, offerings, tools, and experiences.

Establishing differentiation and competitive advantage is now just as important for health solution providers as any consumer brand. We'll explore how, in an age where people can research and rate everything, design and innovation can help the healthcare industry earn more “likes.”

LEXICON

Consumerization

In business, consumerization refers to a reorientation of sales efforts, when a company that once made its sales from business-to-business or business-to-government transactions begins to sell to the individual consumer. In successful consumerization models, a company reorients its product design and marketing to focus on the end user. Consumerization happens in proportion to consumer choice in a given market. In healthcare, consumerization represents the shift towards consumers taking control of their own health care costs and outcomes.



State of the Industry

Patients Are More Responsible for Their Own Care

>50% 

Employees' share of healthcare costs, including both premiums and out-of-pocket costs, has **increased more than 50 percent over the last five years.**



86% of consumers surveyed feel they have to take a more proactive role in managing their own healthcare in order to ensure better quality of care.ⁱⁱ



17%
2007

People enrolled in high-deductible plans:ⁱ

31%
2012



The proportion of the population enrolled in high-deductible and/or health savings plans **quintupled** from 2006 to 2014.ⁱⁱⁱ

Technology is Providing New Tools for Managing Health

 **62%**

of smartphone owners used their phone to look up information about a health condition

 **50%**

of mobile users are expected to download a health app^v



**<20
BILLION**

Internet-connected devices in use



**78.1
MILLION**

wearable health devices were shipped in 2015, up 171.6% over 2014^{iv}

**>80
BILLION**

Internet-connected devices are projected to be in use in 2024, up from less than 20 billion in 2014

Changing Attitudes



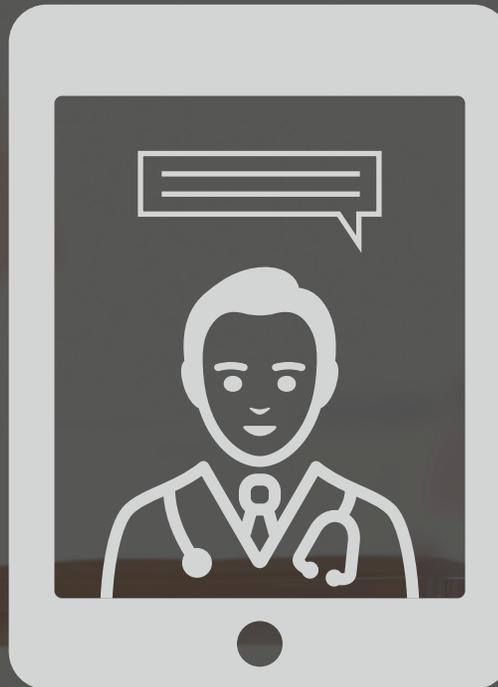
79% of respondents said they were interested in receiving care for a minor episode in at least one alternative location.^{vi}

61% of respondents would be willing to go to a walk-in clinic or urgent care center.

36% of respondents were interested in a pharmacy-based clinic.

24% in a clinic located in a discount retailer.

20% in a clinic located in a supermarket.



3 out of 5 patients would prefer telehealth over in-person visits for minor check-ups and follow-ups.

 **>50%**

More than 50% would send a digital photo of a skin problem to a dermatologist for an opinion



More than one-third of respondents said they were “very” or “extremely” interested in using smartphones or tablets to ask their doctors questions, make appointments or get medical test results.

Challenges

Lexicon

High-deductible Insurance Plans

For 2016, the IRS defines a high deductible health plan as any plan with a deductible of at least \$1,300 for an individual or \$2,600 for a family.

⊗ Consumerization means that patients have a staggering amount of choice in their healthcare. Technology, legislation, and changing attitudes have created the perfect storm. The Affordable Care Act gives people more choice in their insurance coverage and changes how companies market and sell their plans. As the number of patients with **high-deductible insurance plans** and health savings accounts continues to grow, patients evaluate their health spending more carefully. Emerging retail and virtual clinics and telemedicine let people choose how to interact with their care providers. New apps let people educate themselves and take control of their everyday health.

If you're a consumer, this new level of choice can mean an improved quality of care, but it can also mean a lot of extra work. Caring for a health condition can be like taking on a second job as patients and caregivers evaluate the ever-deeper wells of information available to help them navigate available solutions. In addition to professionally produced health content, information from friends, family, and peers is readily available through social media, online patient forums, and rating sites.

If you're a solution provider, increased choice means more competition. With more solutions available, healthcare providers are being challenged to persuade consumers that their solution is the right one. Business as usual is not enough to establish competitive advantage and maintain customer satisfaction and loyalty.

Health outcomes are still the industry's main objective. But while remaining rigorously focused on patients' physical outcomes, companies must now add a new consideration—patients' emotional needs and desires.

Empowered Patients Put a New User in the Driver's Seat.

Until recently, healthcare was a marketplace where businesses transacted exclusively with other businesses. Health solutions catered to the clinical needs of professionals and the economic needs of payers. Patients had little responsibility for their own care, and bore little of the cost directly. Today, this is changing.

Traditional solutions providers who operated in the B2B model now have a new end user to consider, but most lack the tools and infrastructure to understand “health consumers” —a diverse group with needs and desires that are still evolving.

As a whole, today’s health consumers are better informed, more discriminating, and more empowered to learn about and participate in their own care. Armed with tools such as wearable fitness trackers, online content, and personal genomic analyses, they are more likely to track their behavior and symptoms and research answers before visiting a doctor. Many arrive at the physician’s office with more knowledge, more questions, and more defined expectations. As people pay more out of pocket for healthcare, they are also using online tools to “shop” for cost-effective care options. Sometimes this involves seeking care in alternative environments, like retail clinics, virtual clinics, or in the home.

A small but active group of health consumers is creating the initial tremors of consumerization.

E-patients are demanding access to their personal health data and asking for more collaborative relationships with their care teams throughout their health journeys. While still nascent, the e-patient attitude could change the way people view their health, their responsibility, and the way doctors communicate with and bill their patients.

Today, individuals’ desired roles range from traditional passive player to progressive e-patient. They also bring great diversity in education and access to technology. With so many individual considerations, a one-size-fits-all approach to healthcare becomes more difficult. To engage consumers requires an understanding of health consumers as individuals with complex desires and emotions.

This understanding is largely absent in today’s medical industry, where solution providers don’t have strong ways to fully measure and understand the patient experience. Medical records focus on patients as bodies with symptoms. Patient voices are often overlooked in the product development process. Even new patient-focused innovations such as the **Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey** do not provide the high-level specific details that hospitals need to link patient satisfaction with business performance.

LEXICON

E-Patients

Physician, author, and researcher Tom Ferguson coined this term to describe proactive health consumers who seek a more participatory relationship with their doctor. The “e” in e-patients stands for equipped, enabled, empowered and engaged in their health and health care decisions. Ferguson envisioned health care as an equal partnership between e-patients and health professionals and systems that support them.

HCAHPS Survey

The first national, standardized, publicly reported survey of patient experiences in hospitals. The goal of this report is to make it easier for consumers to choose a hospital, while encouraging hospitals to improve quality. Administered to patients shortly after discharge, the survey evaluates categories such as communication with physicians, communication with nurses, communication about medications, quality of nursing services, adequacy of planning for discharge, and pain management. Since March 2008, results have been published quarterly on the Hospital Compare website, where consumers can make comparisons between hospitals. Critics point out that, while it is a standardized measure, fill-in-the bubble questions with answers such as always, usually, sometimes, and never cannot capture qualitative aspects of the patient experience. Healthcare professionals also argue that the survey measures uninformed patient perceptions, rather than real facts that affect patient outcomes.

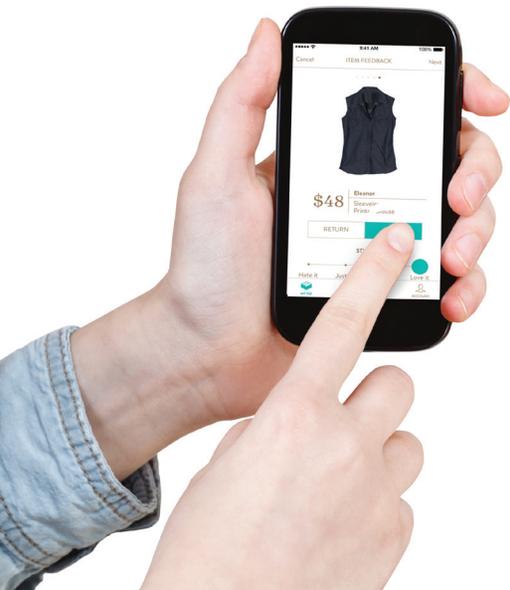


People Have Changing Expectations.

In addition to a louder voice, today's health consumers have different expectations. In this era of mobile technology, people are accustomed to convenience. As a consumer, you can watch a new movie on demand, order high-quality food delivered in minutes, have a stylist custom-curate your wardrobe, and pay for it all with a tap on your smart phone. Then you become a patient and experience culture shock as you're transported to a world that technology left behind. You may wait days, weeks, or months for a doctor's appointment, coordinate multiple rounds between provider and insurance company to pay for service, and have access to your doctor only during business hours—perhaps only via phone call.

Consumerization in other industries has thrown the lingering inconvenience of the traditional healthcare industry into sharp relief. Health solution companies are not just competing with each other—they're competing with expectations created by disruptive, consumer-driven companies like Uber, Amazon, Netflix, Stitch Fix, and Plated that offer convenience, speed, flexibility, access, service, and a curated, customized experience.

Consumer satisfaction has suffered as a result. People are having negative experiences with healthcare products and services that don't live up to their expectations. According to the American Customer Satisfaction Index, U.S. consumers rank hospitals low, just above the U.S. Postal Service in terms of customer satisfaction.^{vii}



Outcomes Are Not The Only Thing that Matter Anymore.

Like all consumer purchases, healthcare decisions are heavily influenced by emotion. In a purely logical scenario, patients would choose their care based only on cost of care and outcomes. This is how companies make decisions in a business-to-business transaction. But consumers—especially those accustomed to the luxury of choice—have more complex factors affecting their decisions. They look at how an experience will fit into their lives, and how it will make them feel. In a consumer-driven market, factors like convenience, accessibility, courtesy, bedside manner, and even design and cleanliness become important differentiators.

According to the Journal of Urology, the top five major categories that consumers evaluate in the most popular physician rating websites are:

- **Overall rating**
- **Communication skills** (*explanation of medical care/treatment, follow-up, attentiveness, listening skills, and bedside manner*)
- **Access** (*availability of appointments, ease of scheduling, punctuality*)
- **Facilities** (*office cleanliness, lab services, waiting room accommodations*)
- **Staff** (*courtesy, friendliness, professionalism*)

Legislation has forced hospitals to deal directly with patient satisfaction and patient experience. The Department of Health and Human Services now uses patient satisfaction survey scores, aggregated from the HCAHPS survey, to influence hospitals' Medicare reimbursement. Beginning in 2012, the Affordable Care Act implemented a policy that withholds 1% of a hospital's total Medicare reimbursements—approximately \$850 million. Hospitals must earn this money back each year with high patient satisfaction scores.^{viii} The stakes will soon rise even higher, as in 2017, Medicare reimbursement withholdings will double to 2%. While under-performing hospitals will be penalized, hospitals that excel in patient satisfaction will receive bonus money from a pool of almost \$1 billion.

The new sudden emphasis on patient satisfaction has been very disruptive to staff on the ground in hospitals. Doctors, nurses, and other workers on the front lines of delivering care have new metrics to which they're held accountable. They are evaluated not only for patient outcomes, but patient satisfaction. Many hospitals are struggling to find effective programs to train and support their staff, while nurses' morale often suffers from things beyond their control.

The rising importance of patient satisfaction is felt far beyond the hospital. Even if solution

providers are not legally accountable for patient experience, their brands and profits can still suffer from a consistently negative experience. Today's tech-savvy and demanding patients have many public online forums for voicing their experiences, from patient message boards to consumer rating sites.

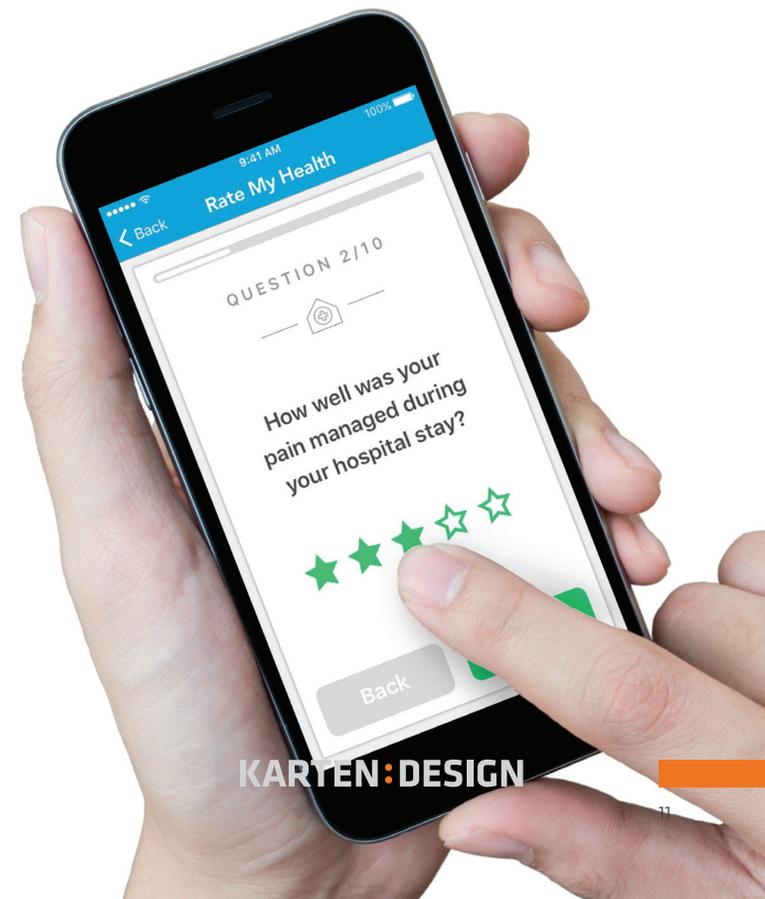


Outcomes Are Not The Only Thing that Matter Anymore.

There are more than 70 healthcare ratings websites available today. Among the most popular are HealthGrades, Vitals, RateMDs, Angie's List, Yelp, and Zocdoc. Even Zagat, the renowned restaurant ratings company, has delved into healthcare ratings. Doctors and hospitals are the most frequently reviewed on these sites, but not the only businesses affected. The Centers for Medicare and Medicaid Services (CMS) first began introducing five-star rating systems for nursing homes in 2008. Since then, it has expanded the system to include physician groups, doctors, home health agencies, dialysis facilities, and hospitals. ConsumerReports.com offers buying guides for a wide range of health products and services, ranging from treadmills and activity trackers to hearing aids, glucose meters, blood pressure monitors, and hospitals.

With so much user-generated information just a Google search away, companies are at risk of losing control of their brands. As we know, online ratings can have a significant impact on not only a business' reputation, but also its bottom line: a Harvard Business Review analysis of Yelp ratings found that a one-star increase in a restaurant's rating could increase its revenue by anywhere from 5-9%.^{ix} The same is true for healthcare businesses in an increasingly consumer-driven world: negative reviews lead to lost dollars.

Patient Satisfaction is not just a consideration tacked on to traditional measures of outcomes. Growing evidence supports that the patient experience affects health outcomes. In 2008, a study published in the New England Journal of Medicine found that improved patient satisfaction was correlated with higher quality hospital care.^x A later study showed that patients who reported a higher level of satisfaction—particularly in areas of doctor communication and discharge planning—had lower 30-day readmission rates.^{xi}



Solutions



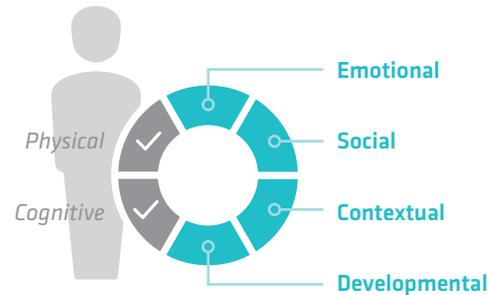
Think Like a Consumer Company

The traditional medical product development process begins with technology. As consumerization takes hold, the process must be re-oriented around the needs of the health consumer. Beginning with the consumer and looking broadly at their health needs—physical, emotional, and logistical—will help companies respond to meaningful problems with innovation.

Karten Design has been designing both medical and consumer products for 32 years. In the last five years, we've seen the consumer mindset, with an emphasis on delivering what end users actually need and want, begin to bleed into medical product development. As markets face more competition and changing expectations, medical companies are using research and design more strategically to establish competitive advantage. They're understanding their end users on a deeper level, thinking in terms of ecosystems, platforms and experiences, and imagining how people will interact with technology in the future.

Here we'll examine some best practices that medical companies are adopting from the consumer world to better meet the needs of today's empowered health consumer.

Understand the Health Consumer.



The goal of consumer-driven product innovation is to create an emotional connection between users and brands—a delightful experience or perception that keeps people coming back. This is a worthy goal in healthcare as well, as more complex factors start to influence choice, and continued engagement plays a growing role in health outcomes.

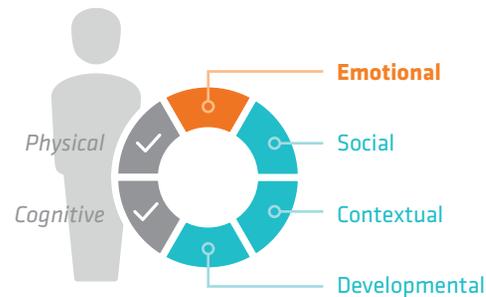
Although the medical product development process is more burdened by engineering, technology, and regulation, medical solution providers can adopt some best practices from consumer companies to help their products connect.

Consumer giants apply numerous resources toward developing a deep understanding of their user. To capture health consumers' interest and loyalty, it's necessary to develop a knowledge that goes deeper than a medical record or hospital survey. This holistic understanding of consumers and their health journeys will breed empathy—something that only comes from first-hand emotional transactions—and help companies uncover many opportunities for meaningful innovation and differentiation.

Most medical solution providers look at users in terms of physical and cognitive usability. Certainly, these are important and necessary

considerations for product safety and regulatory approval. But this is only the beginning. We believe there are four additional dimensions that will help companies develop a qualitative understanding of health consumers and their motivations—emotional, social, contextual, and developmental. Exploring these dimensions at the front end of the product development process will reveal what patients need and desire from a health experience, and enable companies to respond with meaningful innovation that gains adoption and changes health outcomes.

Understand the Health Consumer.



Emotional

Just like any other area of life, health consumers want to feel heard and responded to. People bring a wide range of emotions to their healthcare journeys, from negative feelings like anger and fear to positive ones like pride. By finding out the emotions that run high as people experience your solution, you can stand out by acknowledging and responding to patients' emotional needs.

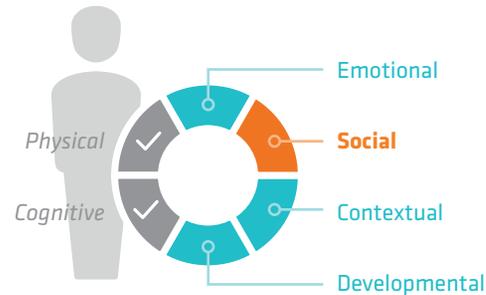
Products used in clinical environments—though they have the least direct interaction with patients—often pose the highest emotional hurdles. People typically enter these environments against their will, and they may bring negative emotions like fear,

anger, and frustration. They may be facing uncomfortable symptoms, or a complete loss of control and ability to do the things they love. Negative emotions, not usually directed toward a company's brand or solution, may be easy to dismiss. But addressing and soothing these emotions with responsive solutions can be an opportunity to exceed expectations and create a better experience.

Reinforcing positive emotions can also differentiate a solution. Today's patients are putting in more work and learning new skills. They are researching health conditions, coordinating between health providers, and even making significant behavior

changes to improve their health. Solutions that respect and value patients' expanding role and treat them as collaborators will make them feel empowered. This means respecting patients' time with solutions that are simple and seamless, respecting their curiosity with access to meaningful information, and valuing their insights with two-way communication channels.

Understand the Health Consumer.



Social

People’s behaviors and decisions don’t happen in a vacuum. They are influenced by the people around them, both peers and those in authority. This is the reason why review sites such as Yelp and Zoc Doc represent such a threat or opportunity. It’s important to understand whom your customers are listening to and learning from as they select your product.

We’ve described how social networks, peer forums, and review sites can pose a challenge for solution providers. But they also offer a window into participants’ personal values and interactions. Simply familiarizing yourself with the conversations that surround your solution can be a valuable way to learn from your end users. Take a cue from consumer platforms

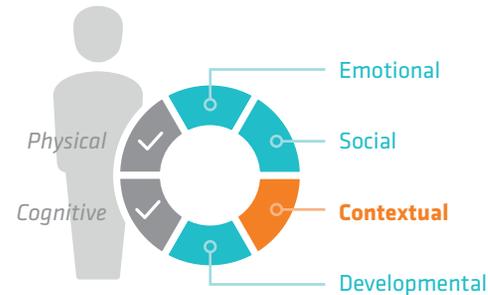
like Amazon that actively solicit and learn from consumer feedback. Once your solution resolves users’ pain points, you may find that they become evangelists for your brand.

Outside of public online forums, friends and family influence health decisions in more private ways. For example, we’ve learned that a spouse or child is typically the one who talks a hearing-impaired person into seeking treatment from an audiologist. Understanding the people who influence a decision can help companies reach out with meaningful messaging and features that support the informal caregivers who experience health conditions alongside patients. After learning about caregivers’ roles in the hearing treatment,

hearing aid manufacturer Starkey created a line of accessories that address everyday social situations—watching television with a family or speaking one-on-one with a companion.

Despite consumerization, doctors still have a great deal of influence over medical decisions. They are still the ones prescribing or directing consumers toward therapeutic solutions, and most doctors have their preferred solutions. Consider how you can make your solution appeal to doctors, looking for ways to add value to their practice, such as improving their communication with patients, providing a more pleasant environment, or creating a new revenue stream.

Understand the Health Consumer.



“A provider cannot understand the experience of surgery, chemotherapy, daily glucose monitoring, or psychiatric care in the same way that treating patients actually live these treatments.”

– James Rickert, private practice orthopedic surgeon and Assistant Clinical Professor of Orthopedic Surgery at Indiana University School of Medicine

Contextual

How people adopt a product has less to do with the solution itself than with the setting in which it is used or accessed. If a product does not match with the user’s **habits and ceremonies** and the constraints of their environments, then it cannot stick. It’s important to meet people where they’re at to deliver solutions that fit with their lives. For example, healthcare start-up Higi is developing health-screening kiosks that reach people in the grocery store, rather than the doctor’s office. Consumers are at the grocery store more often; it is where they’re making many of their dietary purchasing decisions that can impact their health. Higi believes this is an ideal opportunity to get consumers engaged with their health data, including

blood pressure, pulse, and weight—metrics which are amalgamated into a “higi Score” that users can also check at home through an app that offers competitions, rewards, and incentives.

A growing amount of healthcare activity happens in the home as chronic conditions become more prevalent, spurring a market of wearables, implantables, and health apps aiming to treat them. Companies providing solutions in the home need to consider all of the activity that happens in that context—movement, heat, water, and interaction with family members and pets.

LEXICON

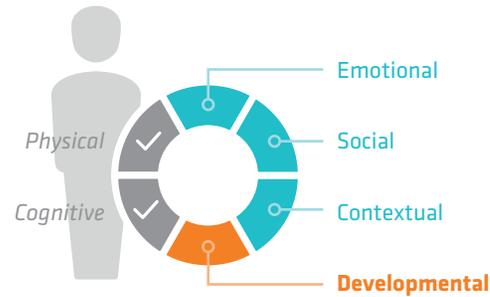
Habits

Learned, automatic behavior patterns in which the mind’s conscious decision-making is not engaged. Habits rely on a primitive area of the brain called the basal ganglia rather than the cerebral cortex. This is the brain’s way of saving effort and freeing up space for more activity. A Duke University study showed that more than 40% of our daily behaviors are dictated by habit rather than conscious choice.

Ceremonies

A habit or routine that has become emotionally elevated. The behavior has become enjoyable, and something the perpetrator looks forward to.

Understand the Health Consumer.



Developmental

A person's **health journey** has many stages. As someone goes through life, they reach many health milestones, from potty training to puberty to pregnancy to illness and age. What stage is your user at in their health journey? A user will bring different motivations and expectations to a product, depending on their developmental stage. This will affect the purchase experience—where a user expects to buy your product, how much they're willing to pay, and what functions and information they will need and want.

Developmental considerations include such things as whether a product is therapeutic or preventative, or whether it is designed for a

new patient who is just learning how to manage their condition, or an experienced one who has learned the basics and is looking for a way to maintain and enhance their wellbeing.

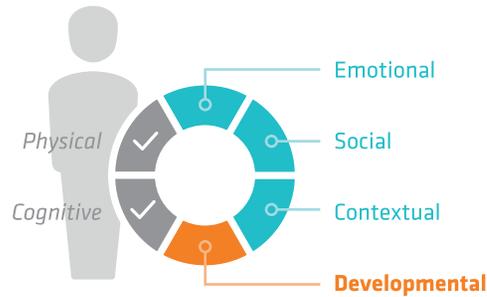
Designing for people at different phases of their health journeys doesn't have to mean expensive hyper-segmentation. The same product can address the needs of different user groups. It's all about how the solution's features and functions are presented. For example, a generally healthy person using a digital nutrition app may be concerned with weight loss; another with early symptoms of diabetes will want to understand the connection between food and health, and begin to make some changes. Different features

LEXICON

Health Journey

A framework that views someone's health as an elongated experience over their lifetime, through many life stages and milestones. It looks at how someone maintains their health and treats illnesses/injuries, and how they engage with fitness and health. Health journeys look at how someone's attitudes change over the course of life, based on biological, psychological, and societal influences.

Understand the Health Consumer.



and functions will take on different levels of importance and meaning at different points of users' lives. Let users decide when and what information and features they would like to use. Despite their growing influence, few solution providers systematically engage patients in their product innovation and design process. Make it a point to research the patient perspective before defining your solution. Go into homes, hospitals, and clinics—anywhere people interact with your product. Look at your users as whole people with complex feelings, who are part of deep networks of influence.

Sometimes an empathetic attitude isn't enough. Once you've developed a solution, it's important to test and refine it with your target users. Give them a voice early in your development process, and provide them with something concrete to see, hold, or navigate. This "fail forward fast" process will quickly point out usability pitfalls before they become integrated into your design, and give your team the insights they need to develop a desirable solution.

Physical ✓

Cognitive ✓

Emotional

How does a solution make someone feel about their health and their abilities?

Social

Who influences the patient's decision and behavior?

Contextual

How does a solution fit into a patient's life?

Developmental

Where is the patient in his or her health journey?

Think Beyond Product. Focus on Experience.



Successful consumer companies take their brands very seriously. They realize that the brand extends far beyond the product that people buy. It's a relationship that begins the first time someone sees or learns about their product. Each subsequent interaction is a chance to build on that relationship. Procter & Gamble has created a science around the First Moment of Truth—the first three to seven seconds after a shopper first encounters a product on a store shelf, in which they're making snap judgments based on their senses, values and emotions—and the Second Moment of Truth, when a customer takes a product home and forms opinions based on their daily experiences with that product. Moments of Truth have become gospel in consumer marketing, and offer a best practice to differentiate medical solutions.

A poor customer experience makes it hard for a solution to gain adoption. In a world where outcomes are only part of the overall health experience, ancillary elements like communication, customer service, and convenience carry significant weight for a brand. It's important for solution providers to think more broadly than the pure functionality of their product and look at the way it makes users feel.

Companies that have invested millions of dollars into developing a new health solution would do well to invest a fraction more in building an ecosystem to ensure that every part of their brand works together to create a positive, seamless experience.

There are many opportunities to improve the user experience in healthcare, bringing positive feelings in the midst of a potentially negative situation. We'll take a look at just a few of those opportunities.

Give Consumers Control

As health consumers become more informed and comfortable making decisions about their personal care, they are seeking more control over their purchases. Many new platforms are arising to respond to this need.

Taking a cue from consumer travel web site Priceline, Zandyhealth lets consumers name their own price for healthcare, dental, and beauty services, from MRI scans and laser eye surgery to teeth whitening and liposuction, and get matched with a pre-screened doctor who will accept their bid—usually 20- to 80 percent off retail prices. The site handles appointment booking, giving consumers control over date, time, and location, and offers coaching to help

patients place bids that are competitive, but likely to be accepted.

Improve Convenience

Consumers today are accustomed to convenience. We expect the world to operate at the speed of a Google search, with the customizability of meal planning on sites like Plated or Blue Apron, and the responsiveness of booking a ride on Uber. Healthcare rarely works this way, but forward-thinking companies are creating change, and doing so with innovative features that make solutions accessible to both end users and the healthcare system.

Igbo is making blood sample collections simple and mobile. It is designed to be a complete solution for laboratory test sample collection. The company connects physicians with mobile phlebotomists who can deliver high-quality venipuncture services any time, any place. Igbo developed proprietary features to make the process convenient and profitable for the entire ecosystem. Its Glidepath® process orchestrates reminders to the patient via email, text, and phone to maximize compliance and reduce missed appointments. Doctors and patients can order tests and access results via doctor dashboards and patient portals. For phlebotomists performing blood draws, the

Think Beyond Product. Focus on Experience.

company offers training and support and provides all supplies needed to complete a draw from start to finish, including preparation, packaging and shipping to exacting laboratory standards.

Heal is bringing back doctor house calls. Within two hours of requesting an exam via the Heal app, patients can see a physician and receive a prescription from the comfort and convenience of home. App creators have partnered with select PPO insurance plans so that patients can pay only their typical co-pay for this service. Other customers pay a transparent flat fee of \$99. Other patient-friendly features include the ability to get to know a physician through bios and video interviews, to view the doctor's travel en route to the requested location, and to rate providers.



Offer Support

When people are going through a health challenge, whether a lifestyle goal, an acute illness, or a chronic condition, they want to feel like they have support. Your solution can stand out by being there when people are emotionally fragile. Even if a physical cure is weeks or months away, the process toward emotional relief can begin immediately. Many solution providers are monetizing the desire for emotional support with solutions that make doctors and other support staff more available, and providing information

that helps patients adhere to treatments.

One example of this demand is the rise of concierge medicine. There are currently about 6,000 concierge medical practices across the United States, in which the patient pays an annual fee for a higher level of service. In an industry where the patient's average interaction with a doctor lasts eight minutes, concierge appointments often range from 30 to 90 minutes and cover nutritional counseling as well as wellness and fitness assistance to provide more holistic, preventative care. The number of boutique medical practices has increased by as much as 25% over the past few years, and is expected to continue to rise as people are willing to pay for support and access.^{xii}

Solution providers can stand out by finding ways to help patients feel supported in the use of their products and services. From patient-friendly web sites with accessible language to live representatives who interact one-on-one with patients in real time, patient support can make the difference in both health outcomes and brand loyalty.

*** Aim to Delight

Delight may seem like a word out of context in healthcare. But creating delight, even

“This is four weeks’ worth of enemas and they’re horrible... I’m supposed to be doing this nightly and it’s terrifying. It’s terrifying and amazing and hilarious, and I really think you should see the instructions on the inside... My pharmacist was trying to explain it to me and I couldn’t stop laughing.”

– patient Margaret MacLennan via YouTube unboxing video for Cortenema medical supplies

in small doses, can transform an experience and build relationships that keep customers engaged with your brand.

Many consumer brands, from traditional companies like Microsoft and Apple to start-up subscription services like the Dollar Shave Club, are using their packaging and presentation to

Think Beyond Product. Focus on Experience.

delight consumers with a great **out of the box experience**. The “unboxing video” is a growing phenomenon. As of March 2016, there were nearly 40 million search results on YouTube for the term “unboxing”^{xiii}—essentially, a video filmed by consumers to provide a window into the process of opening up a new product. These videos are drawing in as many as 2.4 billion views.^{xiv}

The best of these unboxing experiences tap into our emotions, using beauty, humor, and surprise to create positive experiences. In doing so, they turn consumers into evangelists who share their experiences through their social networks and beyond. They also offer an opportunity to create teachable moments as users familiarize themselves with new products. Graphics, color, text, and sequencing can intuitively communicate how to set up and use a product—all in a voice that reinforces your brand. Today, medicinal marijuana dominates the unboxing experience in the healthcare industry, with some brands investing in presentation, packaging, and storytelling that goes well beyond the typical pharmacy prescription. A majority of medical products are presented with utilitarian clinical dryness that misses opportunities to engage users and put them at ease.

Consider what you put in a box, as well. Providing a holistic experience that accounts for how a

product will fit into your user’s life—how they will carry it, store it, and maintain it—will help your solution to mesh with people’s ceremonies and habits. Think broadly about carrying cases, chargers, and other accessories that will help users successfully adopt your product.



Stuart Karten recently predicted the “Uberization of Healthcare,” anticipating that just as Uber disrupted the transportation industry, forcing taxi drivers to adopt new technology and services to compete, that innovative, consumer-focused medical start ups will force the healthcare industry to re-focus their product development efforts around the needs of patients. Medical solution providers can learn much by analyzing what makes Uber successful. Many translate directly into the healthcare industry, where simplicity and transparency can greatly improve the user experience.

LEXICON

Out-of-Box Experience

The experience a consumer has when preparing to first use a new product. This includes unpacking an item, setting up and configuring the product, and its first use.

What Works for Uber Can Work For You

Simple Ordering/Researching Process—

What if there were an easier way to research health products and services?

Always Available—*What if you could get reliable medical treatment or information any time, without going to the ER?*

Time Sensitive—*What if patients could receive accurate start and end times for their appointments, updated in real time?*

Price Transparency—*What if consumers could get accurate quotes for healthcare products and services?*

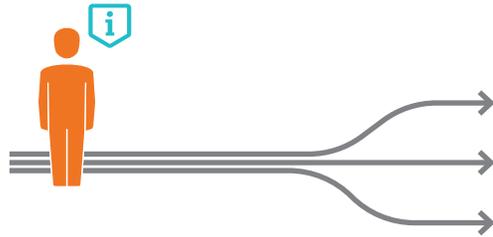
Automatic/Seamless Payment Process—*What if patients didn’t have to look for bills in the mail?*

Automatic Cost Splitting—*What if medical billing seamlessly split costs between patient and insurance?*

Price Flexibility—*What if a system existed to enable consumers to capitalize on low demand to receive more competitive pricing?*

Enables Ratings and Feedback—*What if the medical industry embraced and learned from patient feedback?*

Help Consumers Make Informed Decisions.



Consumers have a great deal of choice, but they don't always have the tools they need to make informed, healthy decisions for themselves, whether that means seeking professional care or enhancing their daily self-care routines to live a healthy lifestyle. There are many opportunities to connect with health consumers by meeting their need for information, presented in ways that are relevant and accessible.

Make Healthcare Shopping Easier

Shopping for healthcare solutions can be a time-consuming process as consumers piece together information from disparate sources. Patients in large metropolitan areas can have hundreds of options to choose from when selecting care.

For example, an MRI in Seattle can cost anywhere from \$600 to \$1800, and allergy tests in Salt Lake City range from \$200 to \$1100, according to online health platform Healthsparq. Healthsparq is one of several

new companies partnering with insurance plans to change the shopping experience for consumers, making the costs of procedures and common doctor visits transparent. The online portal lets patients find care providers, see personalized costs for procedures, and read reviews. Live Health Care Advisors are also available to help create personalized, cost-effective treatment plans over the phone.

Improve Access to Information in People's Daily Lives

Often, once people leave the doctor's office, their health becomes a black box. Today's technology—with its ability to connect large populations, gather biometric data, and make sense of “big data”—has the opportunity change that.

Traditionally, people have used “Doctor Google” to learn more about their symptoms. These unassisted web searches turn up a startling amount of possibilities. Stomach pains could be gas, or could be cancer. Online health sites are steering their content in an effort to empower patients and help cure cyberchondria. Web MD, the most visited online diagnosis site, has shifted toward producing more healthy living and lifestyle-related content, which now accounts for about half of the site's

traffic.^{xv} Users may visit Web MD to check on arthritis symptoms but end up spending most of their time reading about how to fight inflammation and joint-friendly exercises.

User-generated content can also be a powerful information tool. Online forums such as PatientsLikeMe have existed for years so that people can share their experiences and connect with a community for emotional and logistical support. Start-up Iodine is taking user-generated content a step further to help patients evaluate personalized solutions and hone in on the most effective pharmaceutical treatments. In 2014, the company launched a drug-information site

“We're throwing pills at the problem, but we're not giving people something to go along with those pills, which is namely the software that helps them understand: Is this working for them?”

– Thomas Goetz
Cofounder of Iodine

Help Consumers Make Informed Decisions.

featuring patient-submitted reports on how well a particular drug works for them. It now features over 100,000 personal accounts with tips such as time of the day that is most effective for taking medication, or how to avoid nausea and other side effects. In late 2015, the company launched a disease-specific app called Start to help depression patients evaluate the effectiveness of their medications—an important contribution for a disease state in which it often takes six to nine months to find a treatment that makes patients feel better. Every two weeks, the app administers the Patient Health Questionnaire-9—a common test based on the official diagnostic criteria for depression—and tracks a patient’s progress through easy-to-read charts. The company’s next steps include analyzing big data from patients’ anonymous reports to produce insights about a drug’s efficacy, possibly leading to predictive analytics.

The growing prevalence of smart body-worn and implanted devices is another opportunity to leverage information for a better patient experience. Heart implants, blood glucose meters, hearing aids, and even fitness monitors can offer patients and doctors information toward achieving health goals. All of these products feature relatively powerful computers, many collecting biometric data from the body. Product developers are beginning to

“Imagine if a doctor could tell a patient that they could add six years to their life expectancy if they altered a behaviour or changed a medication in order to reduce their high risk of developing a particular condition – a risk identified through big data.”

– Wayne Parslow, UK general manager at MedeAnalytics

evaluate what data is meaningful to patients and their care teams, and how it can be presented in ways that are actionable and easy to digest. A growing number of physicians are formally studying whether wearables can improve patients’ health. They have been shown to improve blood sugar regulation and accelerate recovery time after surgery.



Improve Communication with Care Teams

It’s important to make sure that doctors have access to informational tools to communicate with and educate their patients. Despite consumerization, doctors are typically the intermediary between patients and medical solution providers. Doctors are still a trusted authority and people defer to their doctors in making many medical decisions. Rated on their bedside manner and ability to communicate clearly, doctors crave tools that help them connect with patients. Solution providers have an opportunity to improve

the patient experience by giving doctors tools to prepare and train their patients. Improving the connection between doctors and their patients will help empower people and prepare them for their upcoming health journeys. Patients can even be more compliant as a result of improving their understanding of treatment products and regimens.

Nevro, a start-up neuromodulation company founded in 2006 with the goal of relieving chronic pain, is known in the spinal cord stimulation industry for providing content that supports patients and doctors in the process of testing and implanting its device. Its website features a simple video overview of what patients will experience with their doctors as they evaluate Nevro’s HF10 therapy together. It also connects patients with doctors who are able to offer this treatment. In its short history, Nevro has made a big impact in chronic pain treatment, taking market share from large companies like Medtronic and Boston Scientific.

Provide Personalized Experiences.



Personalization is a growing trend in the consumer product world. Those at the forefront are using data to make predictions that anticipate customers’ needs and desires. Entertainment platforms like Netflix and Pandora make recommendations that introduce users to new content based on their previous consumption. Amazon offers a personalized homepage with recommendations based on past shopping and viewing data. In the travel industry, companies are using consumer data to offer a higher level of luxury and service. Virgin America’s in-flight screens address their passengers by name and provide personalized information about their itinerary, in addition to personalized dining and entertainment recommendations.

In healthcare, targeted, personal experiences can be a tipping point to meaningful behavior

change. Information has the power to engage health consumers in moments where their decisions have a direct impact on their health and wellbeing. With a majority of people carrying or wearing smart devices, it’s possible to have continuous data about their location. This data can be used to generate relevant, real-time recommendations. Imagine entering a new restaurant and receiving information about what menu items fit with your nutritional needs, or receiving targeted coupons for health products as you browse your local pharmacy.

We are on the verge of an era where every individual can have a personal health coach, powered by big data and artificial intelligence. Lark, a personal health app, now offers an automated health coach that gives consumers advice to help them adhere to health and fitness goals, drawing its knowledge from a database

put together by a team of behavioral change experts, fitness experts, nutritionists and sleep experts. Natural-language machine learning helps the coach communicate with consumers in a voice that’s natural and engaging.

Technology is opening up a new world of possibilities to reach health consumers as individuals with unique physical and emotional needs, and in doing so, to change lives and achieve more positive outcomes. To tap into this future, solution providers need to think big, combining imagination with a deep understanding of people. Look broadly to define meaningful opportunities to connect with people at all points along their health journeys. The technology of the future is arriving. We will realize the future when we use technology to engage people.

Outsights in Action

How Karten Design is applying our Outsights
to address pressing healthcare challenges

Creating a Patient-Friendly Dental Office

Midmark Artizan Dental Furniture

In a world where consumers evaluate their healthcare experiences in the same forums as their dinners out, it's important to look beyond the quality of care toward a holistic experience, considering everything that patients value, from ease of parking and paying for service to the soothing smile a practitioner offers. Solution providers have the opportunity to help

curate an extraordinary experience. Dentists, with many customers paying out of pocket, have been on the leading edge of consumerization. Focusing on the whole patient, not just their teeth, many dentists are looking for ways to ease patient fears by create a welcoming environment that downplays dental procedures and equipment. Midmark engaged Karten Design to refresh its dated Artizan dental

furniture line and leapfrog the competition with new aesthetic and functional innovations that meet dentists' evolving needs while elevating the patient experience.

Karten Design leveraged our location in Los Angeles, at the heart of visual and cultural trends, to inspire a completely new look for the dental market. Employing tactile leather and resin panels, soft spot lighting, and free-floating forms, designers drew from spas, restaurants, residential design, as well as insights from design research in high-end Southern California dental offices, to create a tranquil experience. The Artizan dental furniture is designed to make the dentist's work invisible to the patients with new functional details, such as integrated USB and electrical outlets, CPU storage, built-in glove and towel dispensers, and recessed sharps containers. Patients see only clean countertops and rich, wooden cabinet panels.

Throughout the design process, we looked for ways to make patients feel in control of their experience. This pursuit inspired completely new features that provide moments of privacy and solitude during the treatment. Most notable is a "recovery area" featuring a sink, mirror, tissues, and built-in mouth wash pump. Here, patients can take their time to feel comfortable and transition back into everyday life.



Helping Doctors Communicate with Orthopedic Patients

Orthosonos Joint Monitor

The doctor/patient relationship is evolving. Informed patients want to understand their health and participate in their care. Physicians want to engage their patients to achieve positive outcomes, and build loyalty by forming relationships. Solutions that facilitate communication between doctors and patients will stand out for both parties.

When Karten Design partnered with Bruin Biometrics to introduce the first early detection system for joint deterioration, we were challenged to design a product that would convince busy doctors to learn and adopt a new procedure. We developed the potential to build relationships with patients as a way for doctors to add value to their practice.

The OrthoSonos™ system uses acoustic emission technology to detect friction across a joint's full range of motion, giving surgeons a clearer picture of patients' joint health. While the x-rays commonly used today can confirm when a joint has already deteriorated, the OrthoSonos system can predict future deterioration, allowing interventional care. This represented a standard of care, and a different way of working for both patients and physicians.



To help doctors communicate with and educate patients, Karten Design created a large screen and vivid interface that lets doctors and patients view test results together. In addition to the technical information that doctors need, we developed friendly animations that let joint patients follow along with the procedure.

The system's minimal, clean-lined appearance is also consumer-friendly. Inspired by high-end



electronics, the system's design gives prestige to a surgeon's office. Its gently undulating form is inspired by sound waves, representing the technology inside. This metaphor moves through the graphic user interface, as well, creating surprise and delight.

Creating a Desirable Patient Experience

Axonics Neuromodulation System

Neuromodulation is a health technology that's changing the way that patients manage many chronic conditions. An implanted device delivers small electrical bursts to targeted nerves in the body, relieving symptoms such as chronic pain, migraines, and incontinence. Though a nerve stimulation device is prescribed and implanted by medical professionals without a patient ever seeing it, patients play a large role in their health journeys as they evaluate treatment options, participate in trials to see if neuromodulation is an effective solution, and live with their implant at home on a daily basis.

Karten Design partnered with a start-up company entering the neuromodulation market with a class-leading nerve stimulation device that was one-third of the size of competitive devices, and offered a battery that lasts up to a decade longer than competing devices from companies like Medtronic and Boston Scientific. Axonics understood, though, that technical specifications alone would not create the positive patient experience that would help its device gain adoption. The company enlisted Karten Design to understand market, physician, and patient needs to design a holistic product experience.

We conducted in-depth design research, interviewing opinion leaders, surgeons, technicians, and patients. Armed with insights



that revealed opportunities to improve on the efficacy, acceptance, and usability of SNM treatment, we began defining Axonics' new system and the user experience around it.

Currently available neuromodulation systems, though clinically functional, provided a poor user experience for patients. Bulky, outdated devices such as chargers and remote controls were painful to use, and their limited feedback caused uncertainty and confusion. The implant charging process placed burdensome restrictions on patients' daily activities as they were tethered to chargers for hours every day.

To remedy this physical and emotional pain, we conceptualized the neuromodulation industry's first lightweight, portable inductive charging



device. With no wires and a slim profile that allows it to be worn discreetly under clothing, Axonics' new charging device gives patients the freedom to go about their lives with minimal interference.

A small, handheld remote enables patients to adjust stimulation levels and check their implant's battery status, removing much of the confusion and frustration caused by previous systems. Karten Design defined the programmer's graphic user interface from scratch, incorporating iterative testing and consistent feedback from physicians to ensure the interface would be helpful, simple, and intuitive for users of all skill levels.

Industry In-Depth: Virtual Reality

A closer look at how health challenges are impacting today's influential industries

Virtual Reality

Experts predict that the virtual reality industry is expected to be a billion-dollar industry in 2016. Advancements in Head Mounted Display (HMD) products such as the Oculus Rift, HTC Vive and PlayStation VR are offering consumers bold new interactive experiences in visual entertainment. And while the entertainment industry is fully embracing VR, there is also tremendous promise in adapting this technology in healthcare. VR is being used to address problems in healthcare such as surgical simulation, disease management, PTSD treatment, physician training, and psychotherapy.

As a founding member at the USC Center for Body Computing, an innovation hub designed to bring together digital technologies and life sciences, Karten Design has been privy to some of the latest applications of virtual reality in healthcare.

Enabling Borderless Care

Virtual doctors, powered by artificial intelligence, are providing health consumers with real-time access to information and diagnosis from a smart device. The University of Southern California's Center for Body Computing recently unveiled its Virtual Care Clinic—a revolutionary care model that leverages virtual doctors and evidence-based health content to provide borderless, on-demand, 24/7 access to care. The virtual clinic will scale the reach of doctors, providing



personalized health information to patients when and where they need it. Initial studies have revealed that patients often trust virtual doctors over human ones due to their consistent, non-judgmental demeanor. Karten Design is honored to join the USC Institute for Creative Technologies, Google, Yahoo, and several other leading Silicon Beach tech companies as founding partners of USC's Virtual Care Clinic.

Building Empathy

Beyond traditional healthcare benefits, VR in healthcare has emerged as a powerful tool for connecting with users and building patient empathy. Digital health startup Embodied Labs recently introduced a VR experience designed to teach medical students about the

aging experience from the first-person patient perspective. In simulated VR environments, medical students experience what it's like to suffer from vision impairment and hearing loss. Embodied Labs hopes that these content-driven, empathy-based experiences will bring health education curriculum to life to gain a better understanding of the patient experience.

The USC Institute for Creative Technologies is developing VR exposure therapy aimed at providing relief for thousands of military service members who suffer from PTSD symptoms. In the scenario, patients confront their traumatic memories through a retelling of the experience, typically in desert-themed environments. In addition to the visual immersion, patients also

Virtual Reality



experience directional 3D audio, vibrations and smells in the VR HMD therapy. It has been suggested by the USC Institute for Creative Technologies that young military personnel, having grown up with digital gaming technology, may actually be more attracted to and comfortable with a VR treatment approach as an alternative to traditional “talk therapy.”

Patient Education

The USC Virtual Care Clinic in collaboration with the Department of Urology at Keck Medicine of USC recently developed a fully immersive VR experience that guides patients through the surgical process and helps quell anxiety before a major surgical operation. In the simulation,

patients have the ability to tour the operating room all while being guided by a virtual surgeon who provides a comprehensive overview of the equipment in the room. After the tour of the operating room, patients are guided into the surgeon’s office where the surgeon discusses important information regarding the operation, including post-surgery outcomes, complications resulting from the surgery, recovery time, long-term outlook and more.

Like its consumer applications, virtual reality for healthcare is driven by storytelling. It offers providers and patients a way to actively participate in and shape their own stories. In an ecosystem centered

around the needs of patients, its ability to provide information in a captivating and accessible way will provide true value.

VR healthcare is still in its infancy, but what’s certain is that this technology is poised to have a radical influence on how healthcare will be delivered in the future. As patients continue to interact with the technology, as the technology becomes seamlessly integrated with AI and analytics, and as content providers continue to apply this technology to meaningful health challenges, patients will embrace virtual simulations to take charge of their own health outcomes and experiences.

Expert Interview: Dr. Larry Chu

Outside perspectives from leading practitioners in the field

Larry Chu is a practicing physician who runs the Anesthesia Informatics and Media (AIM) lab at Stanford University. He is an Associate Professor of Anesthesia on the faculty of the Stanford University School of Medicine. He is the Executive Director of Stanford Medicine X, a conference that aims to explore how emerging social media and information technology will advance the practice of medicine, improve health, and empower patients to be active participants in their own care. Medicine X is a catalyst for new ideas about the future of medicine and health care. The “X” is meant to evoke a move beyond numbers and trends—it represents the infinite possibilities for current and future information technologies to improve health.

We spoke with Dr. Chu about e-patients, and how the industry can learn by tapping into the insights of engaged, activated patients.



**Larry Chu, MD, MS (BCHM),
MS (Epidemiology)**

*Professor,
Stanford University School of Medicine*

*Executive Director,
Stanford Medicine X*

*Member, Editorial Advisory Board,
The BMJ*

What is an e-patient?

An ePatient is an engaged patient, expert patient, someone who is educated, and activated to be a participant in their own care.

What is Stanford Medicine X doing to empower patients?

We try to flatten power hierarchies at Medicine X. Our goal is to build up “respect hierarchies” as an alternative to traditional power hierarchies in health care teams, or in the doctor-patient relationship. We want to align respect hierarchies to where the true expertise lies. Shared decision making and participatory medicine depend on respect hierarchies to help the partnership recognize who has expertise that must be valued during key decision-making moments—where should we remove the tumor? In making such decisions, it’s important to consider questions like, what are the outcomes most important to you, the patient? What is the best way you’ve found to get through the night with your symptoms? When it comes to the most important things in healthcare—shared decision making and participatory medicine—it’s not about who has the power, it’s about who should be valued and respected in this aspect of

decision making. Unfortunately in healthcare, we seem to focus a lot on power as a remedy to repairing our healthcare relationships.

Patient engagement is actually strong today. In 2007, Judith Hibbard published data on the “Patient Activation Score,” measuring patient engagement. Studies were replicated in 25,000+ patients in 2011. This is a nationwide study looking at patient activation in US patient population, with a score from 1 (low engagement in care) to 4 (highest engagement in care). The largest tranche of patients in the US, comprising 41 percent, were actually found in level 4—the most activated! Obviously, this is not to say “mission accomplished;” however, it is certainly not what most people would assume.

So our work at Medicine X is getting the entire team—provider, patient, technologist, researcher—to come together on equal footing and use the activation that patients bring to solve the most important problems in healthcare. It’s something we call “Everyone Included™” and it’s our way of seeing the world. Our way of accomplishing that vision is called “Disruptive Co-Creation™”

What can companies learn by including patients in their product development process?

Through our Everyone Included™ way of seeing healthcare, Medicine X is helping industry learn the value that patients bring to solving product development. We are focusing on solving problems most important to end users of health care. For example, in an increasingly competitive landscape—biopharma for instance where two molecules may have fairly equivalent clinical efficacy end-points—patient-centered outcomes such as quality of life and side-effect profiles can be important market differentiators. Patient involvement in clinical trial design and implementation can broaden the R&D roadmap, improve the patient experience in clinical trials, and thereby improve both enrollment, retention and completion of studies.

Our way of accomplishing our Everyone Included™ vision, called Disruptive Co-Creation™ involves bringing highly trained expert patients onto research and design teams to help industry solve implementation problems. Patients help us come to solutions faster and with lower costs than we could have without them on the team.

How can medical companies be better at listening? What can they do to reach out to patients?

Engage in social media. Be authentic. Don't have an agenda. I think one reason Medicine X has been successful in our work is that we are an academic program based at Stanford University and we aren't beholden to anyone. I describe ourselves as the Switzerland of health care. And so when we engage in conversations with patients, we truly have no agenda other than to elevate the under-heard voices in health care, elevate respect hierarchies, and bring the ideals of Everyone Included™ as drivers of innovation to academic and industry. Finding neutral organizations, such as patient advocacy organizations or academic organizations like Medicine X, to partner with, are other ways to reach out to patients.

"When it comes to the most important things in healthcare—shared decision making and participatory medicine—it's not about who has the power, it's about who should be valued and respected in this aspect of decision making. Unfortunately in healthcare, we seem to focus a lot on power as a remedy to repairing our healthcare relationships."

Appendix

- ⁱ Kim, Eric. "The Consumerization of Healthcare." Goodwater Capital. Goodwater Capital, 15 Feb. 2015. Web. 11 Nov. 2016. <<http://www.goodwatercap.com/blog/2015/2/18/the-consumerization-of-healthcare>>.
- ⁱⁱ "Survey: Americans Want Greater Control Over Their Own Healthcare." Wolters Kluwer Health. Wolters Kluwer, 12 Dec. 2012. Web. 13 Oct. 2016. <<http://wolterskluwer.com/company/newsroom/news/health/2012/12/survey-americans-want-greater-control-over-their-own-healthcare.html>>.
- ⁱⁱⁱ Conlee, Kyle D. . "The Digital Revolution comes to US Healthcare." Goldman Sachs Global Investment Research . Goldman Sachs, 29 June 2015. Web. 13 Oct. 2016. <<http://www.scbio.org/resources/Documents/Internet%20of%20Things%20-%20Volume%205%20-%20The%20Digital%20Revolution%20comes%20to%20US%20HC%20-%20Jun%2029,%202015%5B1%5D.pdf>>.
- ^{iv} "The Worldwide Wearables Market Leaps 126.9% in the Fourth Quarter and 171.6% in 2015, According to IDC. " IDC. IDC Research, Inc., 23 Feb. 2016. Web. 9 Oct. 2016. <<http://www.idc.com/getdoc.jsp?containerId=prUS41037416>>.
- ^v Govette, Jonathon. "30 Amazing Mobile Health Technology Statistics for Today's Physician." ReferralMD. ReferralMD, 07 Nov. 2016. Web. 10 Dec. 2016. <<https://getreferralmd.com/2015/08/mobile-healthcare-technology-statistics/>>.
- ^{vi} Smith, Graegar, and Chris Bernene. "Are Consumers Ready for Retail Healthcare?" Oliver Wyman. Marsh & McLennan Companies, Apr. 2014. Web. 15 Nov. 2016. <<http://www.oliverwyman.com/content/dam/oliver-wyman/global/en/files/insights/health-life-sciences/2014/April/NYC-MKT08001-035-Retail%20survey-final.pdf>>.
- ^{vii} Irwin, Gil, Jack Topdjian, and Ashish Kaura. "Putting an I in Healthcare." Strategy Business. PwC network, 28 May 2013. Web. 11 Oct. 2016. <<http://www.strategy-business.com/article/00167?gko=80904>>.
- ^{viii} Robbins, Alexandra. "The Problem With Satisfied Patients." The Atlantic. The Atlantic Monthly Group, 17 Apr. 2015. Web. 23 Oct. 2016. <<http://www.theatlantic.com/health/archive/2015/04/the-problem-with-satisfied-patients/390684/>>.
- ^{ix} Luca, Michael. "Reviews, Reputation, and Revenue: The Case of Yelp.com." Harvard Business School. President & Fellows of Harvard College, 4 Oct. 2011. Web. 23 Oct. 2016. <<http://hbswk.hbs.edu/item/reviews-reputation-and-revenue-the-case-of-yelp-com>>.
- ^x Boulding, W., SW Glickman, MP Manary, KA Schulman, and R. Staelin. "Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days." National Center for Biotechnology Information 1.17 (2011): 8-41. National Center for Biotechnology Information. U.S. National Library of Medicine, Jan. 2011. Web. 16 Nov. 2016. <<https://www.ncbi.nlm.nih.gov/pubmed/21348567>>.
- ^{xi} Kennedy, Gregory, Sarah Tevis, and K. Craig Kent. "Is There a Relationship Between Patient Satisfaction and Favorable Outcomes?" National Center for Biotechnology Information 260.4 (2014): 592-600. National Center for Biotechnology Information. U.S. National Library of Medicine, 1 Oct. 2015. Web. 12 Nov. 2016. <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4159721/>>.
- ^{xii} Schlingman, JP. "Concierge Medicine Increases in Popularity as More Consumers Opt for This Care Model; Will Clinical Laboratories Exploit This Business Opportunity?" Dark Daily. Dark Intelligence Group, 6 May 2016. Web. 12 Nov. 2016. <<http://www.darkdaily.com/concierge-medicine-increases-in-popularity-as-more-consumers-opt-for-this-care-model-will-clinical-laboratories-exploit-this-business-opportunity-506#ixzz4Wklce9fk>>.
- ^{xiii} Luttenberger, David. "Fighting words: How 'unboxing' videos are reshaping consumer purchasing behavior." Packaging Digest. UBM Cannon, 30 Mar. 2016. Web. 12 Oct. 2016. <<http://www.packagingdigest.com/packaging-design/fighting-words-how-unboxing-videos-are-reshaping-consumer-purchasing-behavior-2016-03-30>>.
- ^{xiv} Dromgoole, Harrison. "What Can We Learn from the 7 Best Unboxing Experiences?" Ordoro Blog. Ordoro Blog, 19 Apr. 2016. Web. 30 Oct. 2016. <<https://blog.ordoro.com/2016/04/19/7-best-unboxing-experiences/>>.
- ^{xv} Bogart, Laura. "Finding A Cure For Cyberchondria." GOOD. GOOD Worldwide Inc, 13 Sept. 2016. Web. 12 Nov. 2016. <<https://www.good.is/features/issue-38-webmd-and-the-changing-world-of-online-health-care>>.

Courtesy of

KARTEN:DESIGN



www.kartendesign.com



Contact Stuart Karten:
stuart@kartendesign.com
310-827-8722 x226