



# The Pulse: Digital Front Door Part 2

Jeremy Racine  
Healthcare Director, Salesforce - Tableau  
jeremy.racine@salesforce.com

Austin Montgomery  
VP of Services, Prominence Advisors  
austin@prominenceadvisors.com



# What is the “digital front door”

The digital front door can represent a great many things  
Virtual/tele-health, scheduling, education, chat-bots, RPM, EMR.....

**KLAS respondents:**

**Most said “find and arrange needed care”**

One observation is constant throughout  
leveraging digital technology for those “at” or  
“in” the front door to improve patient  
experience and outcomes

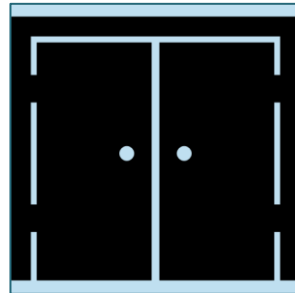


# Where is the “front door”

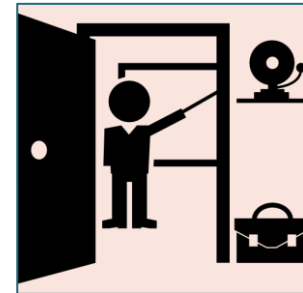
Multiple “digital entry ways” exist

## Where are my patients?

“At a (front) door”



“Inside a (front) door”





## Winchester House

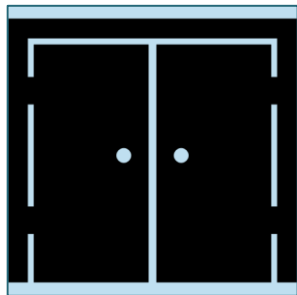
160 Rooms  
40 bedrooms  
2000 doors

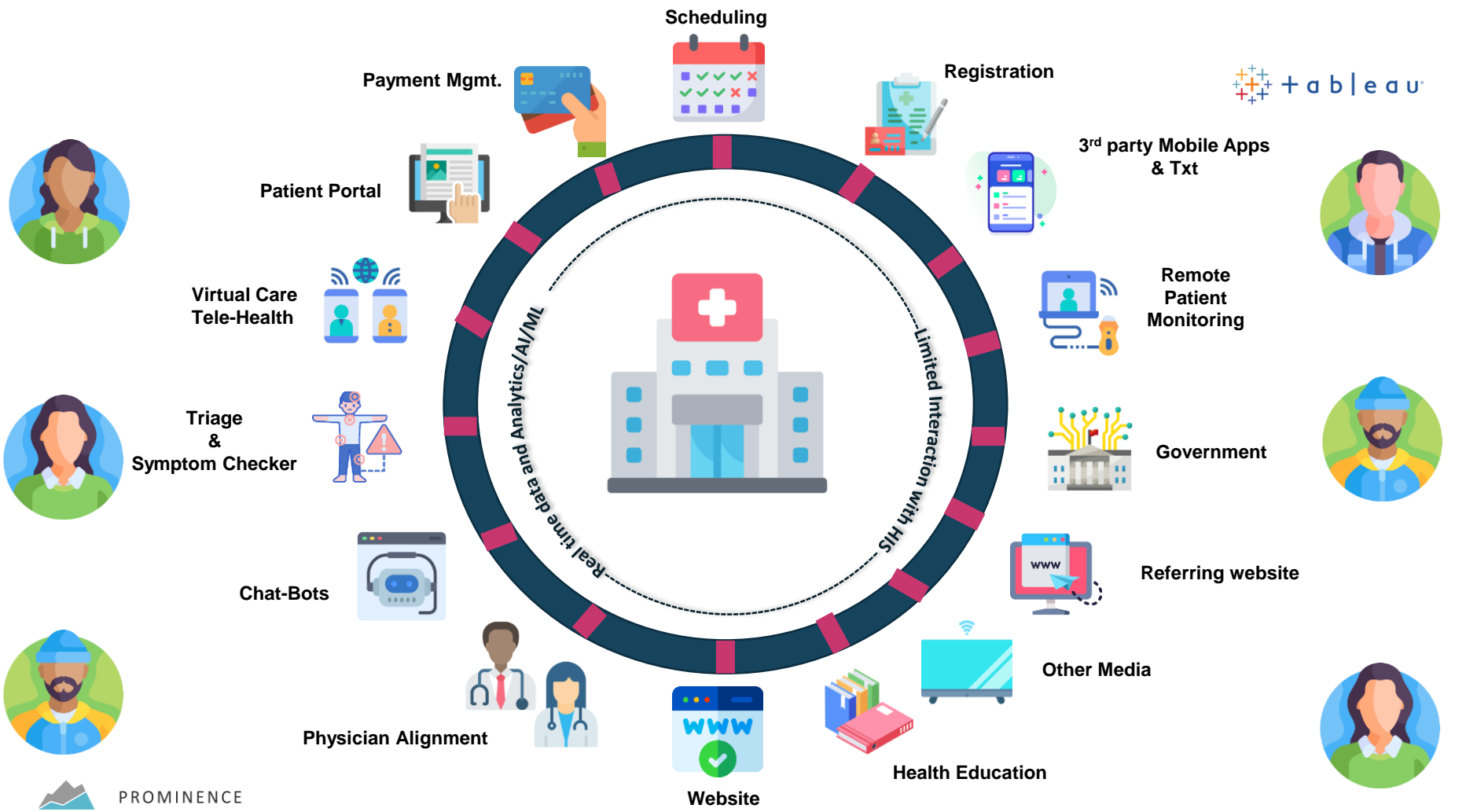


## My House

11 Rooms  
4 bedrooms  
21 doors

# What does “at the (front) door look like”





Scheduling



Payment Mgmt.



Registration



+ a b | e a u

3<sup>rd</sup> party Mobile Apps & Txt



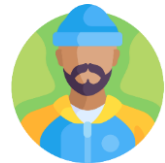
Patient Portal



Remote Patient Monitoring



Virtual Care Tele-Health



Government



Triage & Symptom Checker



Referring website



Chat-Bots



Other Media



Physician Alignment

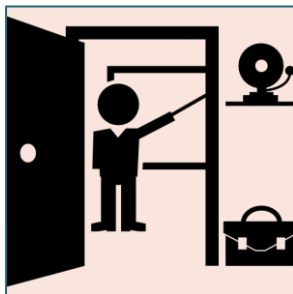


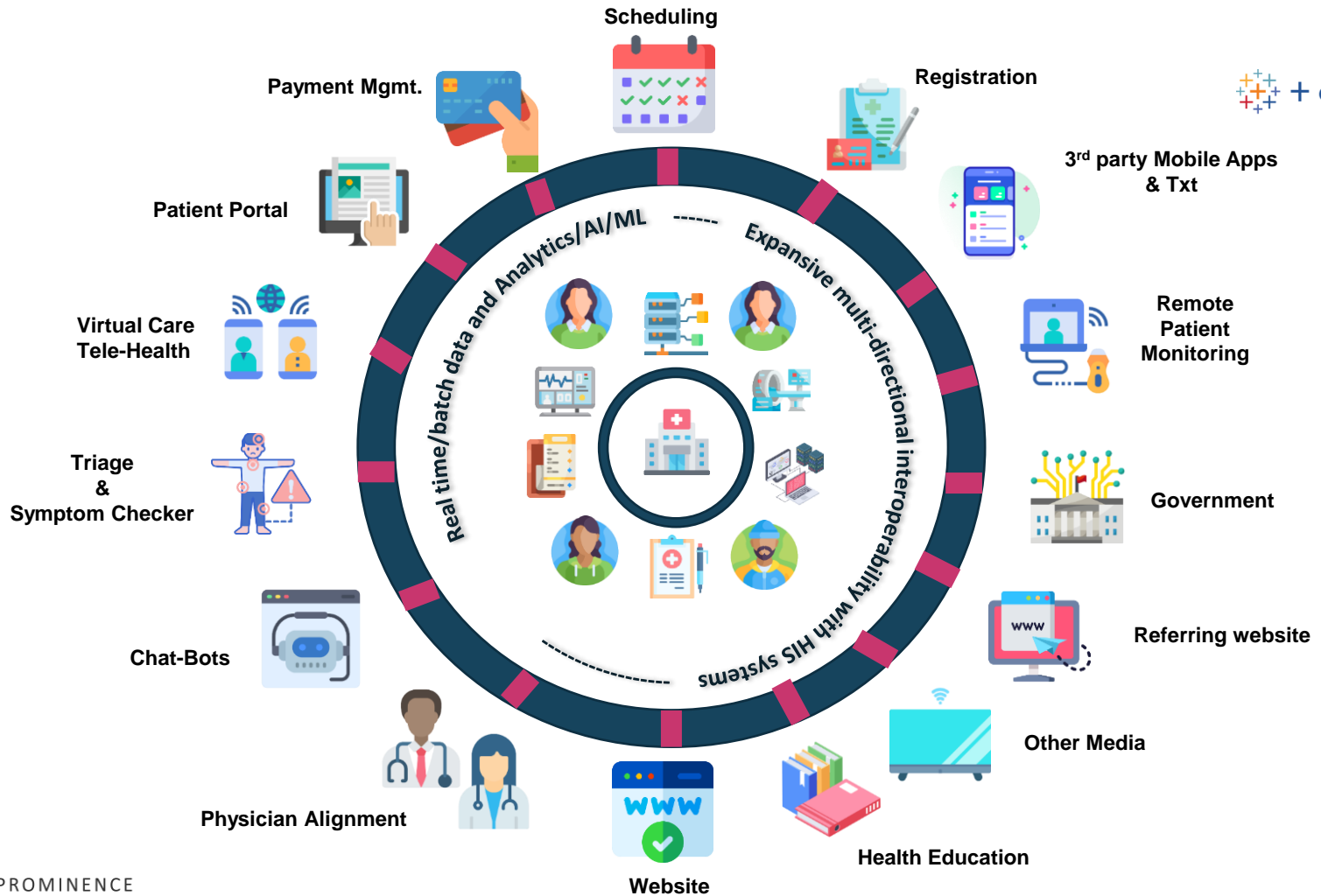
Health Education



Website

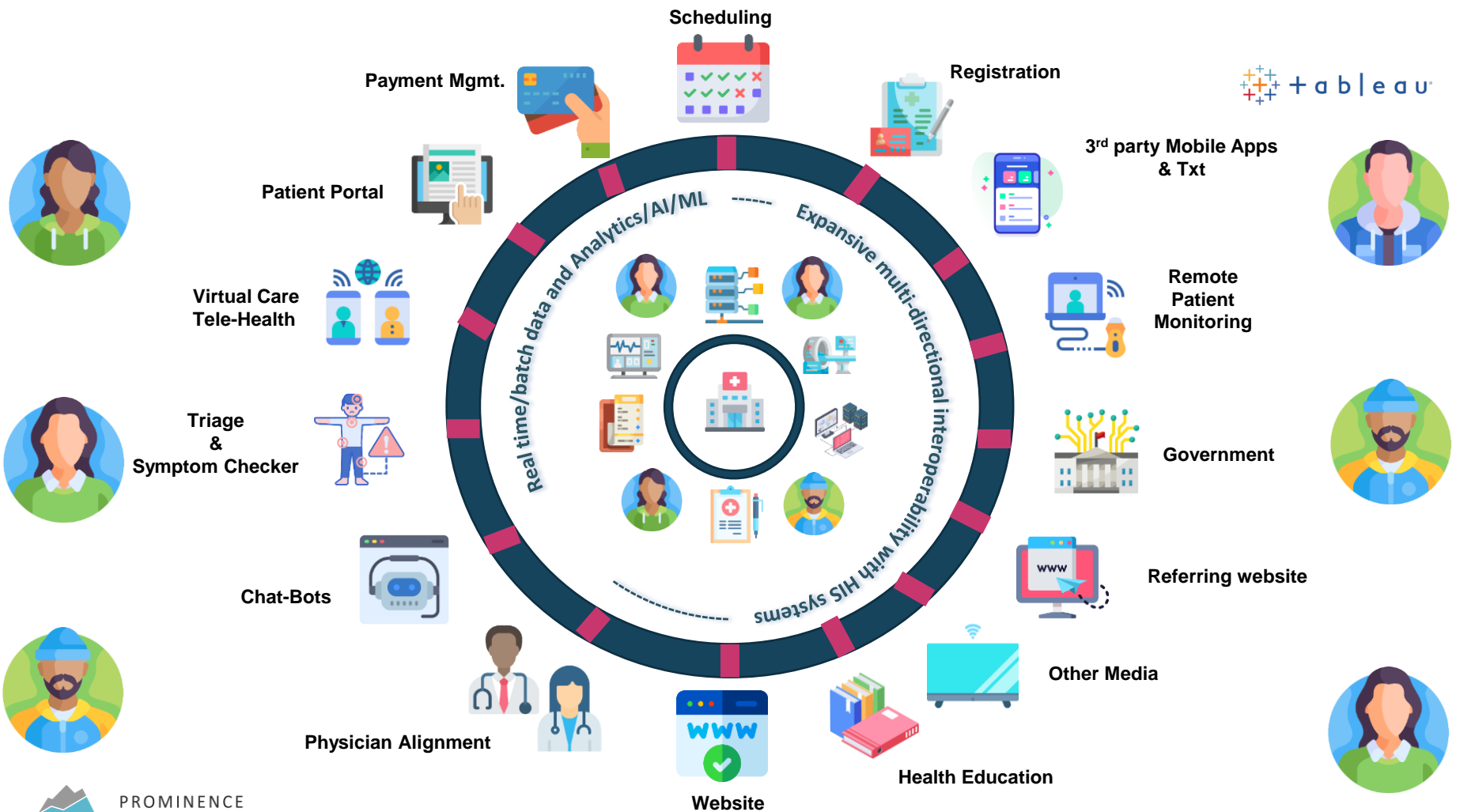
# What does inside (front) door look like







**From data/analytics perspective we must be prepared for all who are interacting**



# Newer to healthcare but not other industries



Retail, Travel & Hospitality, Entertainment,  
been in the business for decades

Healthcare Products = Healthcare Services & information

Similar principles apply! - Attract, engage, trust, execute, retain



# E-Commerce Lessons to be learned



# Appetite has never been stronger!

2.14 billion people expected to be digital buyers (230+ mil. US)<sup>1</sup>

84% of online shoppers in the United States review at least one social media site before making a purchase<sup>2</sup>.

88% of online shoppers state detailed product information is an extremely important part of the purchasing decision process.<sup>3</sup>

73% of shoppers are more likely to buy something if they watch a video explaining its function or purpose.<sup>3</sup>

68% of US online shoppers interact with live chat features.<sup>3</sup>

~60%

Spend their online shopping time on smartphone or tablet<sup>3</sup>

Of consumers who own VA (Siri/Alexa etc..) use it to purchase products<sup>3</sup>



PROMINENCE

<sup>1</sup><https://www.oberlo.com/statistics/how-many-people-shop-online>

<sup>3</sup><https://healthcaremba.gwu.edu/history-of-ecommerce/>

<sup>2</sup><https://disruptiveadvertising.com/ppc/ecommerce/2018-ecommerce-statistics/>

# Digital Adoption in Healthcare



# Healthcare digital interaction is growing quick!!!

“Nearly 90% of consumers would find it at least “somewhat useful” if their healthcare provider posted pricing information on their website around expected out-of-pocket costs, such as copay and coinsurance. Yet only one in three consumers say their healthcare provider offers this “most of the time” or “always.””<sup>1</sup>

88% plan to continue using tele-health for non-urgent consultations after COVID-19 has passed<sup>3</sup>

93% quality of financial experience is important factor in decision to return to provider<sup>1</sup>

~38% of population access patient portal<sup>2</sup>

65% wish they could view real-time benefits information, such as the amount of the remaining deductible, in the same place as their provider bill. <sup>1</sup>



# Market Factors & Challenges





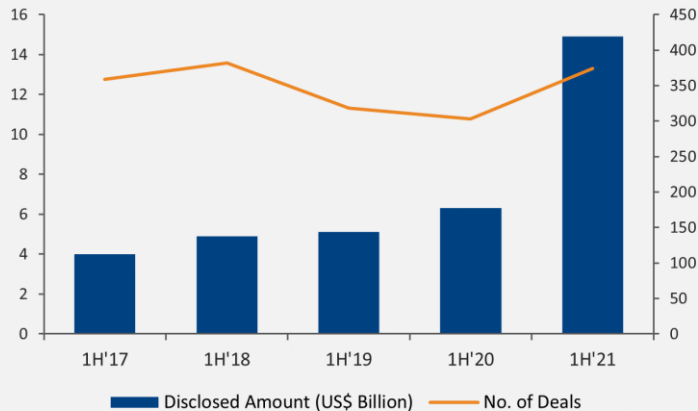
- ❑ Digital Health Investment
- ❑ Provider Consolidation
- ❑ Tele-health Expansion
- ❑ Retail Expansion
- ❑ Remote Patient Monitoring
- ❑ Disparate Systems
- ❑ Government Impact



# Digital Health Investing



Digital Health VC Funding 1H 2017-1H 2021



Source: Mercom Capital Group

## Top VC Funded Digital Health Categories in 1H 2021

Telemedicine .....	\$4.2B
Wellness .....	\$1.7B
mHealth Apps .....	\$1.6B
Analytics .....	\$1.5B
Clinical Decision Support .....	\$1.1B

Source: Mercom Capital Group <sup>1</sup>

“Global VC funding for Digital Health companies in the first half (1H) of 2021 shattered all previous 1H funding records, with \$15 billion. Funding activity was up by 138% during 1H 2021, compared to \$6.3 billion raised in 1H 2020.”<sup>1</sup>

29+ Billion – 2021 Total<sup>2</sup>

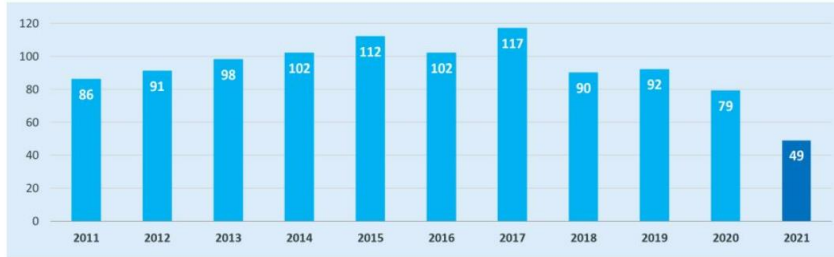
<sup>2</sup><https://www.fiercehealthcare.com/digital-health/digital-health-funding-topped-29b-2021-almost-doubling-2020-s-record-breaking-year>

<sup>1</sup><https://mercomcapital.com/product/1h-q2-2021-digital-health-healthcare-it-funding-ma-report/>

# Provider Consolidation



Figure 1: Number of Announced Transactions, 2011 – 2021



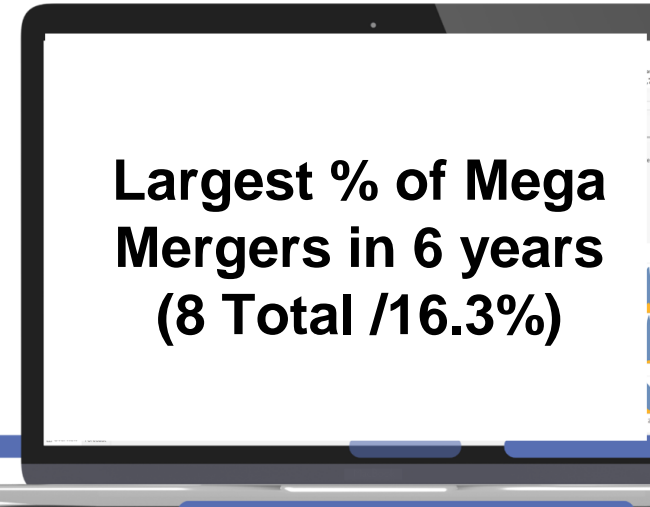
Source: Kaufman, Hall & Associates, LLC

Figure 2: 2021 Hospital and Health System Transactions by the Numbers

<b>Total Announced Transactions</b> . . . . .	<b>49</b>
<b>Number of Announced Transactions in Q4 2021</b> . . . . .	<b>15</b>
<b>Breakdown by Smaller Partner Size in Revenue (as % of Total Transactions)</b>	
• Revenue < \$100M . . . . .	24%
• Revenues Between \$100M and \$500M . . . . .	43%
• Revenues Between \$500M and \$1B . . . . .	16%
• Revenues > \$1B . . . . .	16%
<b>Not-for-Profit/For-Profit Deals</b>	
• Not-for-Profit Acquiring Not-for-Profit . . . . .	69%
• Not-for-Profit Acquiring For-Profit . . . . .	14%
• For-Profit Acquiring Not-for-Profit . . . . .	4%
• For-Profit Acquiring For-Profit . . . . .	12%
<b>Transactions Involving</b>	
• Religiously Affiliated Seller . . . . .	14%
• Governmental Seller . . . . .	14%
• Rural or Urban/Rural Seller . . . . .	31%
• Financially Distressed Seller . . . . .	16%

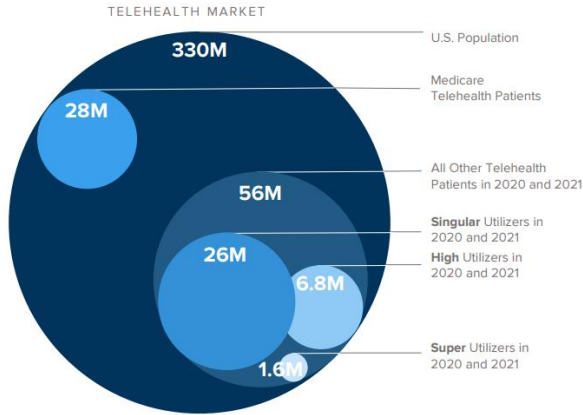
Note: Totals for Breakdown by Smaller Partner Size and Not-for-Profit/For-Profit Deals may not equal 100% due to rounding.

Source: Kaufman, Hall & Associates, LLC



# Tele-health expansion

## 2020/2021 At least 220 million tele-health visits



TIMELINE OF SELECT SUPPLIERS OFFERING TELE-CAPABILITIES



Note: Dates denote when company began offering telehealth services.  
Source: Publicly available company information.

# Retail Expansion

US Market:

\$1.78 Billion 2020 -> \$4.4 Billion 2028<sup>2</sup>

3300+ Clinics as of 2021 In US, CA, MX<sup>1</sup>

In-person, Tele-Health, Urgent, Primary, Medical, Dental, Vision, Behavioral



<sup>2</sup><https://www.fortunebusinessinsights.com/u-s-retail-clinics-market-106419>

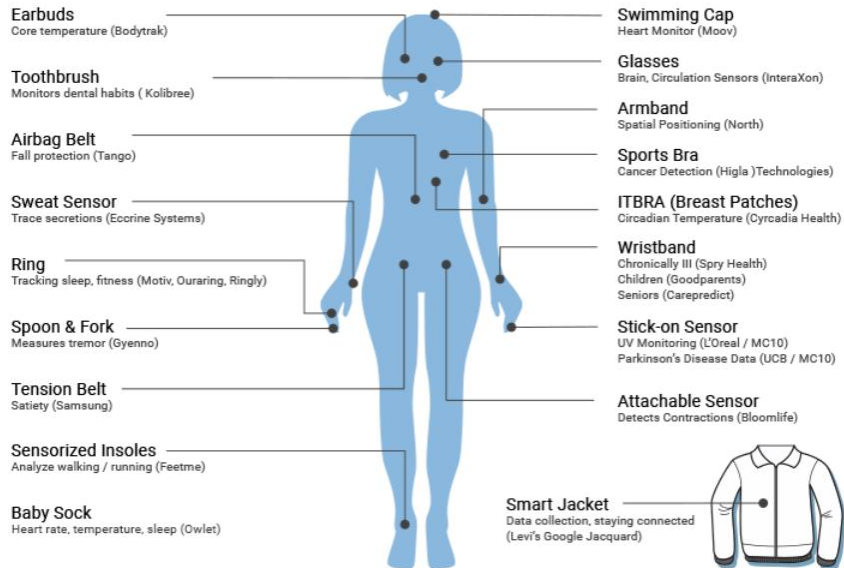
<sup>1</sup><https://drugstorenews.com/new-publication-convenient-care-clinicians-launch-2022>

# Remote Patient Monitoring



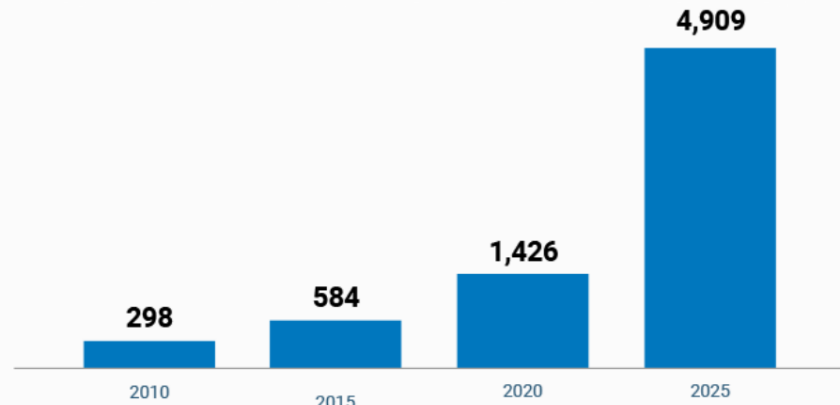
North American Market: \$72 Billion by 2025<sup>1</sup>

## Humans Expected to Reach 1,400+ Digital Device Interactions by 2020



Source: In Vivo (Pharma Intelligence, Vol. 36 No. 3, Digital Health: Leveraging Data to Power and Personalize the Patient Experience, March 2018).

## The Number of Digital Device Interactions / Capita / Day



Source: Coughlin et al Internal Medicine Journal article "Looking to tomorrow's healthcare today: a participatory health perspective". IDC White Paper, Doc# US44413318, November 2018: The Digitization of the World – From Edge to Core<sup>2</sup>.

<sup>1</sup><https://www.chiefhealthcareexecutive.com/view/remote-patient-monitoring-market-expected-to-hit-117b>

<sup>2</sup>[https://www.rbccm.com/en/gib/healthcare/episode/the\\_healthcare\\_data\\_explosion](https://www.rbccm.com/en/gib/healthcare/episode/the_healthcare_data_explosion)

# Government impact



## PHE Situation

*Public health emergency related regs.*

Perhaps in 2022

Potential massive medicaid decline , ~15 million

Influx into fed/state exchanges/employer plans

Acuity mix concerns

Equity concerns

Tele-health models

## Hospital Price Transparency Rule

Hospitals required to provide pricing on website

Option to employ price estimator tool (based on individual circumstances, insurance etc..)

Updates to rule eff. 2022; more clarity on price transparency and heavier penalties

## Transparency in Coverage Rule

Hospitals required to provide pricing on website

Option to employ price estimator tool (based on individual circumstances, insurance etc..)

Updates to rule eff. 2022 ; more clarity on price transparency and heavier penalties

## No Surprises Act

Providers aren't "surprise" billing patients for a variety of use cases (ex. Emerg. services @ out-of-network facility, non-emergency care involving out-of-network providers)

Good faith estimates to uninsured or "self pay" (22-separate GFE for each provider, 23 single GFE from convening provider)



## Disparate Data Systems

Web-site capture data

Chat-Bot data

Registration data

Scheduling data

EMR data

Quality/Performance/Outcomes data

Wearable Device data

HIE data

Benefit/Payer data



### Makana Health Live Agent

Makana Health chat bot engages Hannah , a live agent, providing her with information about Charles. Hanna requests some additional registration information, such as age, race, gender, ethnicity, condition information, insurance, geographic location, and primary care



### Appointment/Provider Alignment

Hannah learns that Charles is seeking an endocrinologist appointment and wants to provide Charles with a list of the most qualified/aligned providers



### Charles care plan

Charles and his new provider discuss and agree on a care plan based on Charles history, current indicators and life goals.



### Appointment Completion

1. Based on Charles criteria Hanna verifies benefit information and provides GFE.
2. Next, she helps Charles make an appointment based on his availability and opts him into alerts
3. She sends appointment alert and patient portal registration link as well as registration alert to complete registration info.



### Text Alert

On the day of his appointment, Charles receives push notifications and directions to the clinic location.



### Makana Health Chat Bot

Makana Health chat bot engages with Charles to offer diabetes related support , offering education materials, Charles requests information providers, costs , performance and availability



### Diabetes Education Materials

Charles engages a local hospital system website , Makana Health, looking for patient education materials



### Charles receives/completes registration process

He receives a text message with his appointment confirmation as well as link to his registration forms for his upcoming appointment.

### HIE Request

Prior to his appointment Makana requests Charles historical medical records , HIE sends data to Makana EHR.



## Meet Charles

A newly diagnosed diabetic patient looking for an elevated patient experience



### Hannah Confirms/Completes Registration

Receives Charles completed prework and sends a thank you note to Charles via the patient portal.



### Register & Share Device Data

1. Prior to his appointment Charles has read an article on patient portal about the benefits of sharing personal device data with his providers & instructions to register/share a device.
2. He registers his glucose monitor and begins sharing data with Makana Health



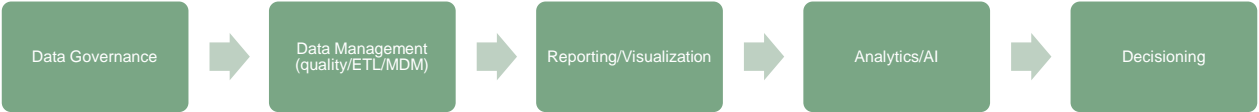
# Solution Considerations



# With great data comes great responsibility



- Estimates suggest patients generate ~80 MB/year imaging/EMR data<sup>1</sup>
- Blend in other digital front door & other HIS systems & data is exploding
- Analytics/AI play an essential role in strategic support for how programs, policy, treatments and digital interactions are designed/developed/executed/maintained/optimized



<sup>1</sup><https://www.forbes.com/sites/forbestechcouncil/2021/08/06/the-skyrocketing-volume-of-healthcare-data-makes-privacy-imperative/>

## Disparate Data Systems

Web-site capture data

Chat-Bot data

Registration data

Scheduling data

EMR

Quality/Performance/Outcomes data

Wearable Device data

Benefit/Payer data

### Makana Health Live Agent

Makana Health chat bot engages Hannah, a live agent, providing her with information about Charles. Hanna requests some additional registration information, such as age, race, gender, ethnicity, condition information, insurance, geographic location, and primary care

#### Analytics in Action

Analytics leveraged to match Hannah to Charles, provide profile/clustering information in real time as Hannah triages/captures data from Charles.

### Makana Health Chat Bot

Makana Health chat bot engages with Charles to offer diabetes related support, offering education materials, Charles requests information providers, costs, performance and availability



### Appointment/Provider Alignment

Hannah learns that Charles is seeking an endocrinologist appointment and wants to provide Charles with a list of the most qualified/aligned providers

#### Analytics in Action

Analytics leveraged to provide Hannah with most ideal provider list with highest likelihood of positive outcome, analyze and send to Charles.

### Appointment Completion

1. Based on Charles criteria Hanna verifies benefit information and provides GFE.
2. Next, she helps Charles make an appointment based on his availability and opts him into alerts
3. She sends appointment alert and patient portal registration link as well as registration alert to complete registration info.

#### Analytics in Action

Analytics leveraged to assist in benefit determination and GFE/cost estimates/compare.



#### Analytics in Action

Analytics leveraged support clinical decision support, population health and care management and patient engagement tasks as needed

### Charles care plan

Charles and his new provider discuss and agree on a care plan based on Charles history, current indicators and life goals.

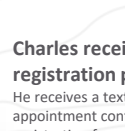
### Text Alert

On the day of his appointment, Charles receives push notifications and directions to the clinic location.



#### Analytics in Action

Analytics leveraged to determine no-show risk (clinical, SDOH, environment)



### Charles receives/completes registration process

He receives a text message with his appointment confirmation as well as link to his registration forms for his upcoming appointment.

#### HIE Request

Prior to his appointment Makana requests Charles historical medical records, HIE sends data to Makana EHR.



#### Analytics in Action

Analytics leveraged to create recommendations based on HIE data/device data and other available data



#### Analytics in Action

Website cookie/other data leveraged for workflow management and profile building

### Diabetes Education Materials

Charles engages a local hospital system website, Makana Health, looking for patient education materials



## Meet Charles

A newly diagnosed diabetic patient looking for an elevated patient experience



### Hannah Confirms/Completes Registration

Receives Charles completed prework and sends a thank you note to Charles via the patient portal.



### Register & Share Device Data

1. Prior to his appointment Charles has read an article on patient portal about the benefits of sharing personal device data with his providers & instructions to register/share a device.
2. He registers his glucose monitor and begins sharing data with Makana Health



Using the Tableau health intelligence platform, Makana Health is able to elevate patient engagement, experience and outcomes.

# Importance of Real Time Data



**“Consumers have grown accustomed to the convenience of real-time access to people, process, information and transactions from any location and any connected device, and healthcare is no exception”**

**“A healthcare system in which stakeholders share, adopt and apply medical knowledge in real time enables improved care, accelerated workflows, streamlined business processes and a better balance of resources with demand.”**

*HealthcareITNews; Rick Krohn, principal at HealthSense*





PROMINENCE

# Real-time Data

Leveraging Transformational Technology for Incredible Results

Austin Montgomery

Prominence Advisers

[austin@prominenceadvisers.com](mailto:austin@prominenceadvisers.com)



Some sources allow real-time data

Some have the ability, but make it difficult

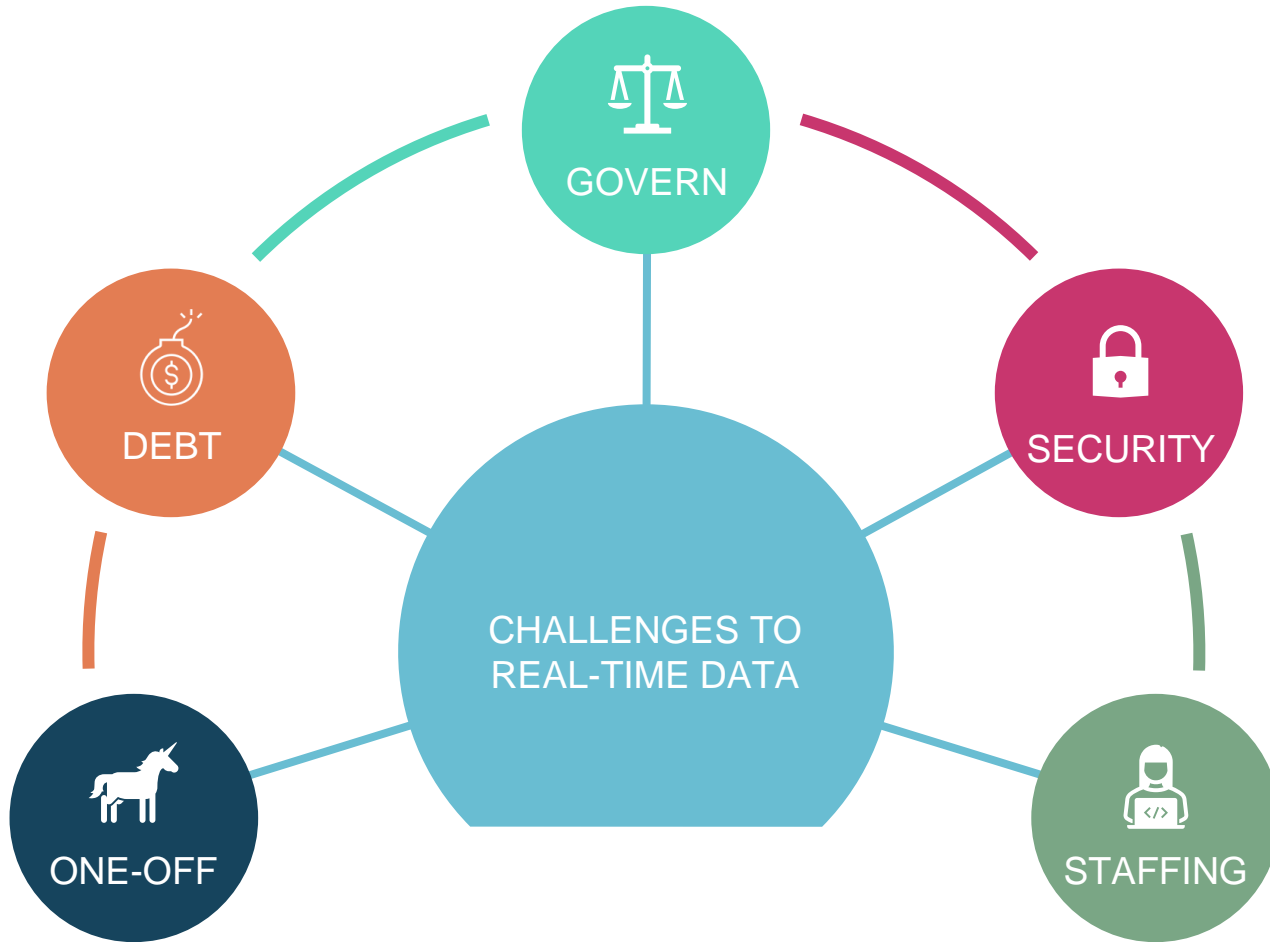
Some don't provide the option ... yet!



# Real-time Data is a Real Expectation

77%

Of healthcare providers expect real-time data and analytics in order to provide the care patients need



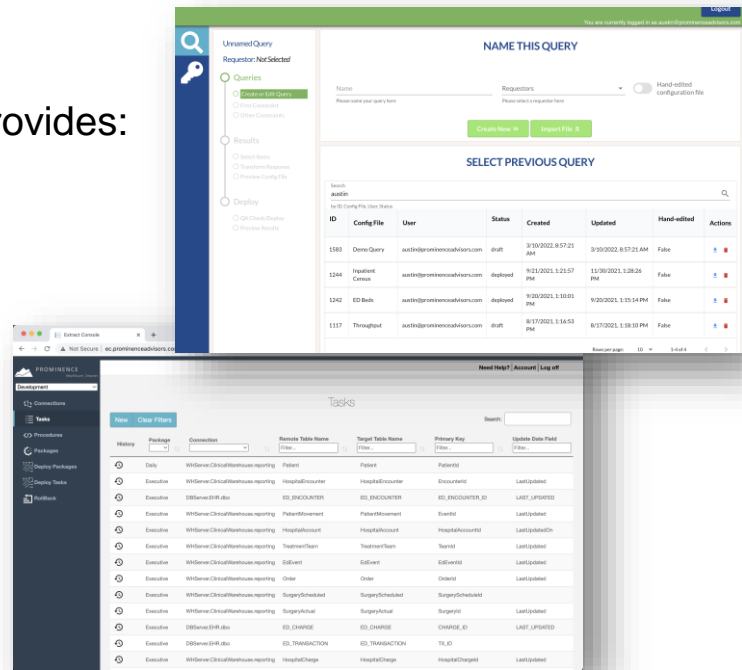


# Succeeding with Real-time Data

Leverage tools that make it easy to do the right thing

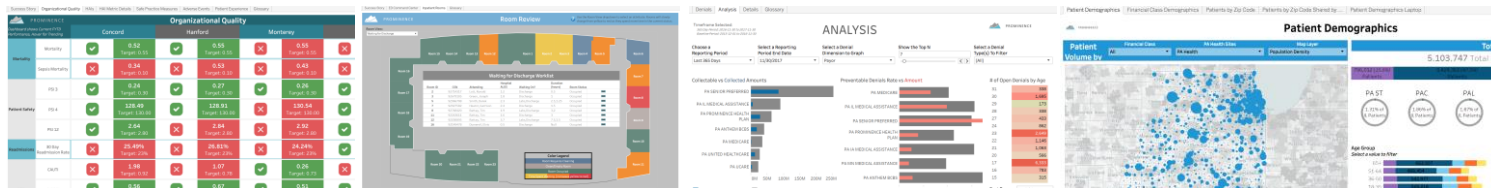
Prominence's Platform is a light-weight set of tools that provides:

- Collaborative development best practices
- Query & job prioritization and throttling
- Creation of global, re-usable real-time data
- Retain version control, history, rollback, auditing
- Robust permissions and access requests workflows
- Franchise and decentralized development support
- Performance monitoring and alerting
- Rapid trouble-shooting and debugging
- Resilient architecture to minimize source system impacts
- Ability to leverage existing staff with almost no training



# Robust & Resilient Architecture

DATA  
VISUALIZATION



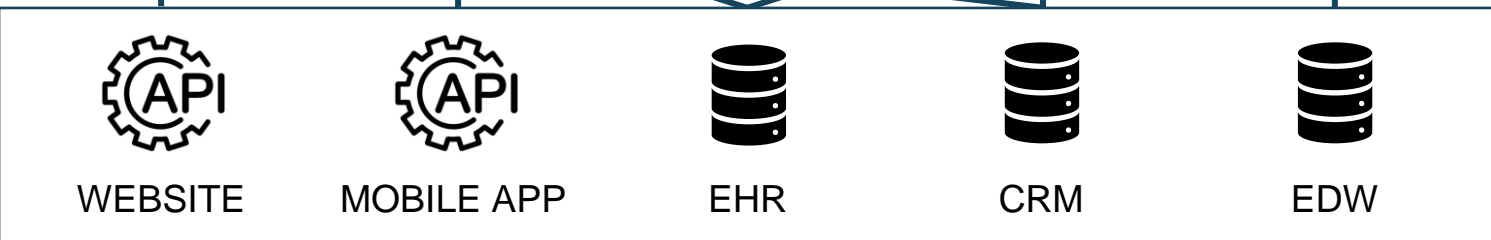
DATA  
PREPARATION

GLOBAL, RE-USABLE DATA TRANSFORMATIONS  
UNIFIED REAL-TIME AND BATCH DATA

DATA  
EXTRACTION

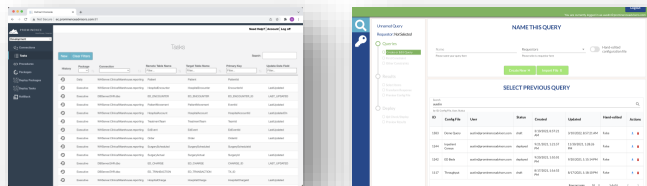


DATA  
SOURCES



# Solutions & Examples at: <https://prominenceadvisors.com/>

## Extraction Console



Manage extractions from all sources – batch or real-time – with no-code interfaces

## Prominence Platform



Data from anywhere turned into information for anyone, that is trusted by everyone.

## Accelerator Templates



50+ award-winning Tableau analytics templates spanning every healthcare domain

## Tech-Enabled Services



Healthcare veterans that are veteran working as a team to solve all your data challenges.

# Q&A



PROMINENCE



# TABLEAU CONFERENCE

May 17-19, 2022

Virtual and In-Person

Registration is now open  
[tableau.com/conference](https://tableau.com/conference)

## Live In Person in Las Vegas:

- 2.5 Days
- 5,000 data lovers
- 4 Keynotes
- 1 Iron Viz
- Hands-on-Training
- Breakout sessions
- Tableau Doctor
- Networking
- Executive Experience
- Press/Analyst programming

## Broadcast

- 2 Full Days
- 100,000 + data lovers
- 3 time zones with hours of content/ breakout sessions on data insights,trends, and Tableau best practices
- Slack

# Thank you



PROMINENCE

