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GROUP

# APIs AND INFORMATION BLOCKING: WHAT PROVIDERS NEED TO KNOW

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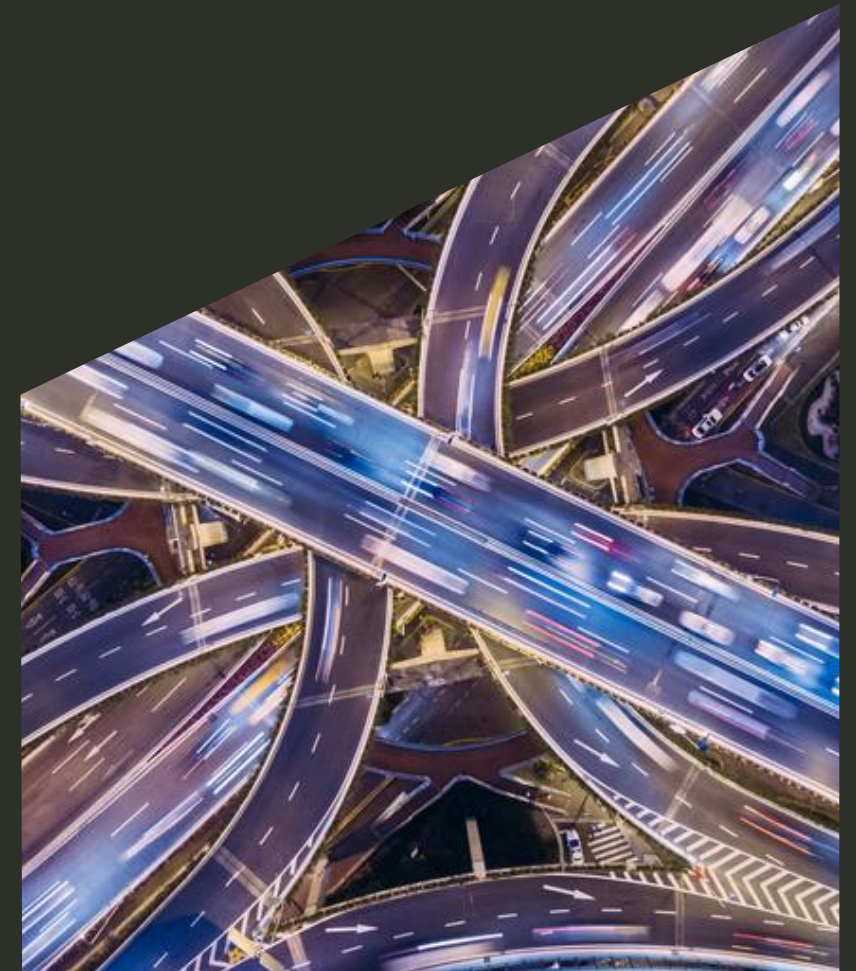
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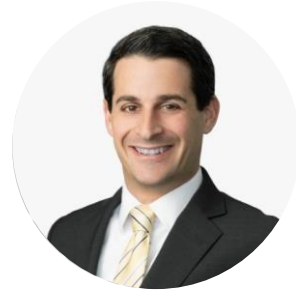
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# AGENDA

- What are Application Programming Interfaces (APIs)?
- API impact on Promoting Interoperability
- Key API considerations for providers
- Practical provider API approaches
- API opportunities for providers
- API hypotheticals

# CONSUMER DEMAND FOR INTEROPERABILITY



**93%**

Of consumers polled in July expressed disappointment in the lack of data sharing during COVID-19 across separate vendor systems.<sup>1</sup>



**55%**

Placed the blame on the provider, 31% placed blame on the EHR the provider chose to utilize.<sup>1</sup>



**67%**

Of consumers revealed they will consider changing their physician and hospital providers in the coming year after learning how their health record was not shareable or available or was blocked in the past year.<sup>1</sup>



**22%**

Of consumers noted that they had difficulty obtaining records electronically, via fax or in person in 2020.<sup>1</sup>

## CHARTIS POINT OF VIEW

Organizations that embrace and facilitate interoperability will have a competitive advantage in the new consumer-driven healthcare marketplace.

# WHAT ARE APIs?



# WE USE APIs IN EVERYDAY LIFE

Use of APIs are pervasive in our everyday life by enabling many of our most frequently used applications and services

- Smart-home Assistants
- Navigation
- Rideshare
- Weather Updates
- Hotel, Airline, and Rental Cars
- Banking

# WHAT IS AN API?

## APIs

- A standardized approach for enabling two or more systems to communicate with each other
- Defines specific resources or tools available for use between the system
- Defines how to utilize the resources or tools
- Defines the data formats and other use criteria
- APIs may be developed using industry standards to foster interoperability or remain proprietary with a specific vendor system

## FHIR and the 21st Century Cures Act

- The 21<sup>st</sup> Century Cures Act Final Rule selected HL7 FHIR to standardize the sharing of patient data
- Fast Healthcare Interoperability Resources (FHIR)
  - Defines a set of resources to address frequent use cases when accessing patient data between two systems
  - Provides a means to exchange or store data for “instant” access



# The Waiter & The Customer



What you ordered.  
The way you ordered it.  
In a timely manner.  
With a smile.

## The Waiter & the Back of the House

*a.k.a. The invisible kitchen army, processes and communication*



# The API-Restaurant Analogy



# The API & the Back of the House

*Hides complexity from developers, extends systems to partners, organizes code, and makes components reusable*

# BENEFITS OF USING APIs FOR INTEROPERABILITY

- APIs make it easier for software developers to build applications that interface and integrate with operating systems or other software
- They offer the basic “building blocks” for how to interact with the system or software
- Incorporate RESTful API principles for rapid access to information in a manner that does not place a heavy compute burden on systems and databases
- Key advantage of APIs over traditional interfaces:
  - An app or other software only needs to understand how to “call” or connect with the API
  - This means the app can pull data from multiple EHRs without all the steps of a traditional interface, like knowing where the data is stored and how it’s stored

# API IMPACT ON PROMOTING INTEROPERABILITY



# APIs AND PROMOTING INTEROPERABILITY



## ONC introduced certification criteria for APIs in 2015

### Promoting Interoperability “Provide Patients with Electronic Access” measure:

For at least  
**ONE** unique  
patient:







Timely access to health information through patient portal;



Timely available health information through API to access using any application of patient’s choice

# ORIGINAL 2015 EDITION API CRITERIA VS. 21ST CENTURY CURES ACT FINAL RULE CRITERIA

Category	Original 2015 Edition	21 <sup>st</sup> Century Cures Act Final Rule
 <b>Patient Selection</b>	API must be able to receive and respond to request for single patient's data	In addition to requests for a single patient's data, must also support queries for multiple patients
 <b>Available Data For Request</b>	Each of the individual data categories specified in the Common Clinical Data Set	U.S. Core Data for Interoperability (USCDI) Standard
 <b>Standard for API</b>	No standards requirement	FHIR Release 4
 <b>API Documentation</b>	Developer must provide via publicly accessible hyperlink: (1) API parameters/syntax; (2) software requirements; and (3) terms of use	Developer must provide via publicly accessible hyperlink: (1) API parameters/syntax; (2) software requirements; (3) terms of use; and (4) all applicable technical requirements and attributes to be registered with authorization server

# POTENTIAL CHANGES BY CMS TO PROMOTING INTEROPERABILITY IN 2022 TO REFLECT API UPDATES



Require provider implementation and use of FHIR-based API



Require providers that manage API authorization servers to register new application developers within a certain period of time of a request (e.g., 10 business days)



Modify definition of “Provide Access” to require production of all available data represented in USCDI through API



Potential Improvement Activity or Promoting Interoperability Measure: Use API to provide a clinical data registry or quality improvement organization with access to information about multiple patients

# KEY API CONSIDERATIONS FOR PROVIDERS



# DATA APPLICABLE TO INFORMATION BLOCKING: USCDI AND EHI

## Allergies and Intolerance

- Substance (Medication)
- Substance (Drug Class)
- Reaction

## Assessment and Plan of Treatment

### Care Team Members

- Clinical Notes
  - Consultation Note
  - Discharge Summary Note
  - History & Physical
  - Imaging Narrative
  - Laboratory Report Narrative
  - Pathology Report Narrative
  - Procedure Note
  - Progress Note

## Goals

- Patient Goals

## Health Concerns

## Immunizations

## Laboratory

- Tests
- Values/Results

## Medications

- Medications
- Medication Allergies

## Patient Demographics

- First Name
- Last Name
- Previous Name
- Middle Name (including middle initial)
- Suffix
- Birth Sex
- Date of Birth
- Race
- Ethnicity
- Preferred Language
- Current Address
- Previous Address
- Phone Number
- Phone Number type
- Email Address

## Vital Signs

- Diastolic Blood Pressure
- Systolic Blood Pressure
- Body Height
- Body Weight
- Heart Rate
- Respiratory Rate
- Body Temperature
- Pulse Oximetry
- Inhaled Oxygen Concentration
- BMI Percentile (2-20 years)
- Weight-for-length Percentile (Birth - 36 months)
- Head Occipital-frontal Circumference Percentile (Birth - 36 months)

## Problems

## Procedures

## Provenance

- Author Time Stamp
- Author Organization

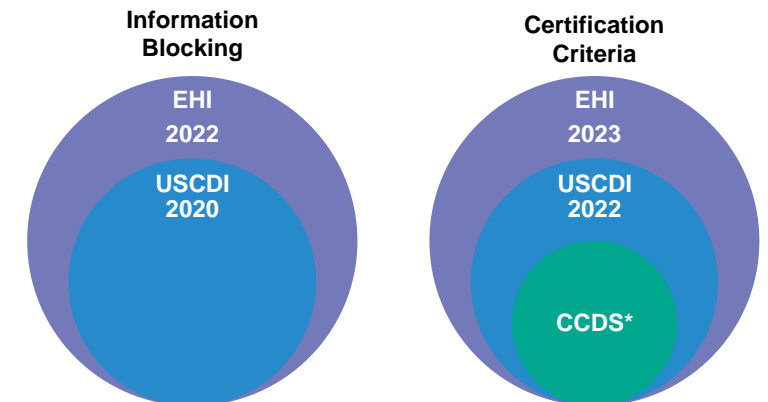
## Unique Device Identifier(s) for a Patient's Implantable Device(s)

Care Team Members, Roles and Relationships

Diagnostic Imaging Reports

Social Determinants of Health

...Includes all ePHI in the Designated Record Set



\*Common Clinical Data Set



# KEY API DATES FOR DEVELOPERS AND WHY THEY MATTER FOR PROVIDERS

1

2015 MU requires development for patient portals, non-standard applications

2015

- In response to certification criteria associated with Meaningful Use (MU), EHR developers created **non-standard** patient portal **applications** to share the **Common Clinical Data Set** of information

## PROVIDER CONSIDERATIONS

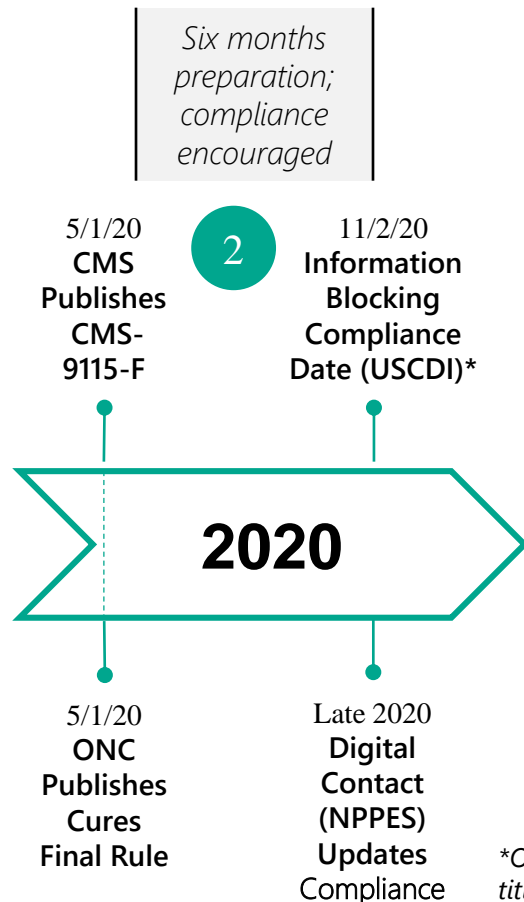
- Most providers depended on EHR vendor development for portals with limited data sharing capability
- Some cutting-edge providers created their own portal applications
- The result is multiple patient portal apps for one patient

# KEY API DATES FOR DEVELOPERS AND WHY THEY MATTER FOR PROVIDERS

1

2015 MU requires development for patient portals, non-standard applications

## Key Compliance Timeframes:



2020

- Providers could be required to share USCDI *without* additional EHR certified tools
- CMS mandates NPPES updates

## PROVIDER CONSIDERATIONS

1. Patient & actors will request USCDI in many **non-standard** formats and routes
2. Clinical notes may be in ancillary systems
3. CMS encourages **FHIR endpoints** in NPPES

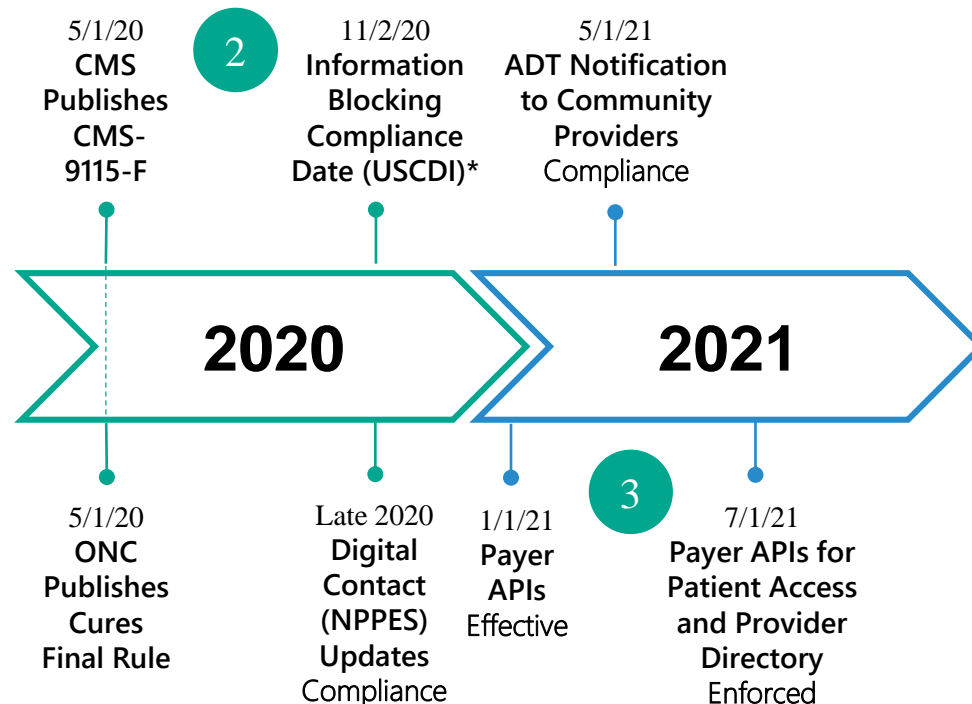
*\*ONC sent an Interim Final Rule to OMB for review on September 17, 2020. The title suggests a possible extension of some compliance dates. The Interim Final Rule remains under OMB review as of the date of this presentation.*

# KEY API DATES FOR DEVELOPERS AND WHY THEY MATTER FOR PROVIDERS

**1** 2015 MU requires development for patient portals, non-standard applications

## Key Compliance Timeframes:

Six months preparation; compliance encouraged	Compliance with information blocking prohibition required; EHI definition limited to USCDI.
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## 2021

- CMS mandates Payers provide a standard HL7 FHIR API for claims, encounters and cost data
- CMS mandates non-standard ADT notifications *without* additional EHR certified tools

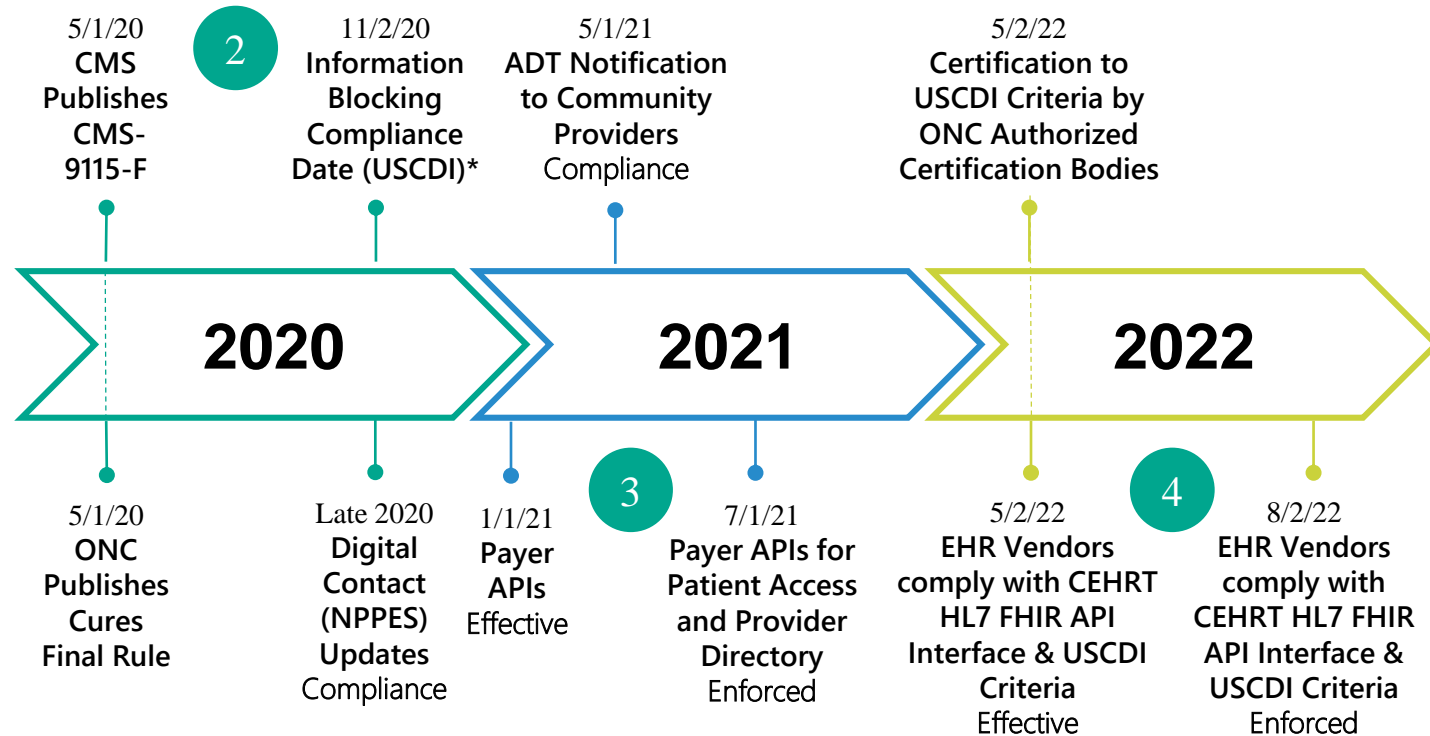
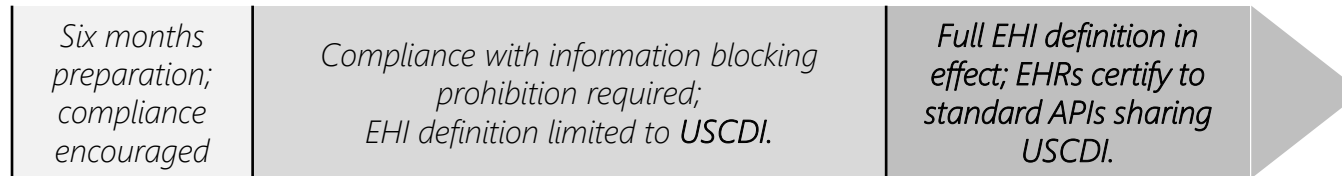
## PROVIDER CONSIDERATIONS

1. Third party apps sharing payer data are well positioned for **future interoperability with provider ACOs**
2. ADT Notifications could be sent in **multiple custom formats** resulting in misfires & alert fatigue. *E.g. ADT->API->FHIR->DirectTrust*

# KEY API DATES FOR DEVELOPERS AND WHY THEY MATTER FOR PROVIDERS

**1** 2015 MU requires development for patient portals, non-standard applications

## Key Compliance Timeframes:



## 2022

- EHRs certify to provide standard HL7 FHIR APIs for USCDI only
- Providers and other actors must not block any EHI
- Definition of EHI expanded to ePHI in designated record set

## PROVIDER CONSIDERATIONS

1. **Replace custom workarounds with APIs** for USCDI data sharing
2. Consider security implications of **third party applications** seeking to use APIs (**Data Governance**)
3. Providers likely will be required to adopt and implement (g)(10) API provided by developers

# PRACTICAL PROVIDER API APPROACHES



# PROVIDER VS DEVELOPER HOSTED APIs

	<u>Vetting Responsibility</u>	<u>Vetting Requirements</u>
<b>Provider Hosted</b>	<p><b>Provider</b> conducts application registration and developer vetting</p> <p><b>Provider</b> may charge <i>third parties</i> incremental hosting costs</p>	Application developer vetting conducted in non-discriminatory manner, in accordance with information blocking exceptions
<b>Developer Hosted</b>	<p><b>Developer</b> conducts application registration and developer vetting</p> <p><b>Developer</b> may charge <i>provider</i> for incremental hosting costs</p>	Application developer vetting must be conducted in accordance with API condition of certification, within ten business days of registration request

# IMPLEMENTING PATIENT API USE

## Privacy and Security

- Actors (***EHR developers*** and ***health care providers***) may educate patients about the privacy and security practices of applications, ***provided*** that the information:
  1. **Focuses on *current* privacy and/or security risks posed by the technology or the third-party application developer**
  2. **Is factually accurate, unbiased, objective, and not unfair or deceptive**
  3. **Is provided in a non-discriminatory manner**

# IMPLEMENTING PATIENT API USE

## Privacy and Security

- Examples of permissible education provided by ONC:
  1. Providing education to an individual of a third-party app developer's privacy and security policies and practices through an automated attestation and warning process
  2. Offering education, including a warning or other notice, to the patient if the actor is being directed by the patient to transmit EHI to a recipient that is unknown to the actor



# IMPLEMENTING PATIENT API USE

## Privacy and Security

- Objective privacy policy evaluation frameworks – ONC’s suggested criteria for evaluating privacy policies:
  1. **Publicly accessible at all times, including updated versions**
  2. **Shared *prior* to the technology’s receipt of EHI from an actor**
  3. **Written in plain language and in an informative manner**
  4. **Describes whether and how the individual’s EHI may be accessed, exchanged or used by any other person or other entity**
  5. **Requires express consent from the individual before the individual’s EHI is accessed, exchanged or used, including before any EHI is sold**

# API OPPORTUNITIES FOR PROVIDERS



# API IMPACTS FOR PROVIDER ORGANIZATIONS

Providers are not mandated to create an API on their own, but the new regulatory changes could impact the broader market.



## DEFINE YOUR USCDI v1 SOURCES

Provider organizations should identify all their EHRs and other USCDI v1 data sources and be prepared to produce the data in a method the patient requests or agrees to receive it in. Understanding data sources is different for each provider organization & harder for multi-hospital organizations with multiple EHRs and/or affiliates.



## PATIENT DEMAND

Consumers are clamoring for their data and greater access, and others will be asking providers to share data even if they are not ready. The volume of patient and authorized 3<sup>rd</sup> party application requests may exponentially increase.



## DATA COLLECTION AND DELIVERY DEFINITION

Provider organizations may need to produce USCDI v1 data through different methods. This could include through their own API, a core EHR that other systems feed, HIM, an Interoperability Hub or Digital Front Door.



## PARTNERSHIPS

Also consider what this means for current/future acquisitions and partnerships. How those EHRs fit into a provider's data flow and what their API capabilities are.



## COMPETITIVE ADVANTAGE

Some advanced providers are creating their own APIs or even healthcare API platforms to enable innovation and data transfer. Patients may redirect their care dollars to organizations that promote interoperability; innovation could lead to discoveries or drive revenue.



## PATIENT EDUCATION

Rules are clear that responsibility ends once providers hand data over to an authorized third party. Patients are still going to need some basic understanding on what to look for when vetting apps for their healthcare data.

# POTENTIAL BENEFITS TO PROVIDER ORGANIZATIONS

- Increased information flow to improve informed decisions and interventions
- Allows for more data points from patients
- Enables remote monitoring
- Enables hospital @ home

- Allows for other third-party organizations to connect
- Some leading provider organizations are planning for public APIs
- Others are innovating by aggregating their own data

- New platform to more effectively, more cheaply interface with patients
- Patients will return to who aggregates & makes their data easily accessible

Patient Safety



Innovation



Consumer "Stickiness"



Competitive Advantage



Interconnectedness



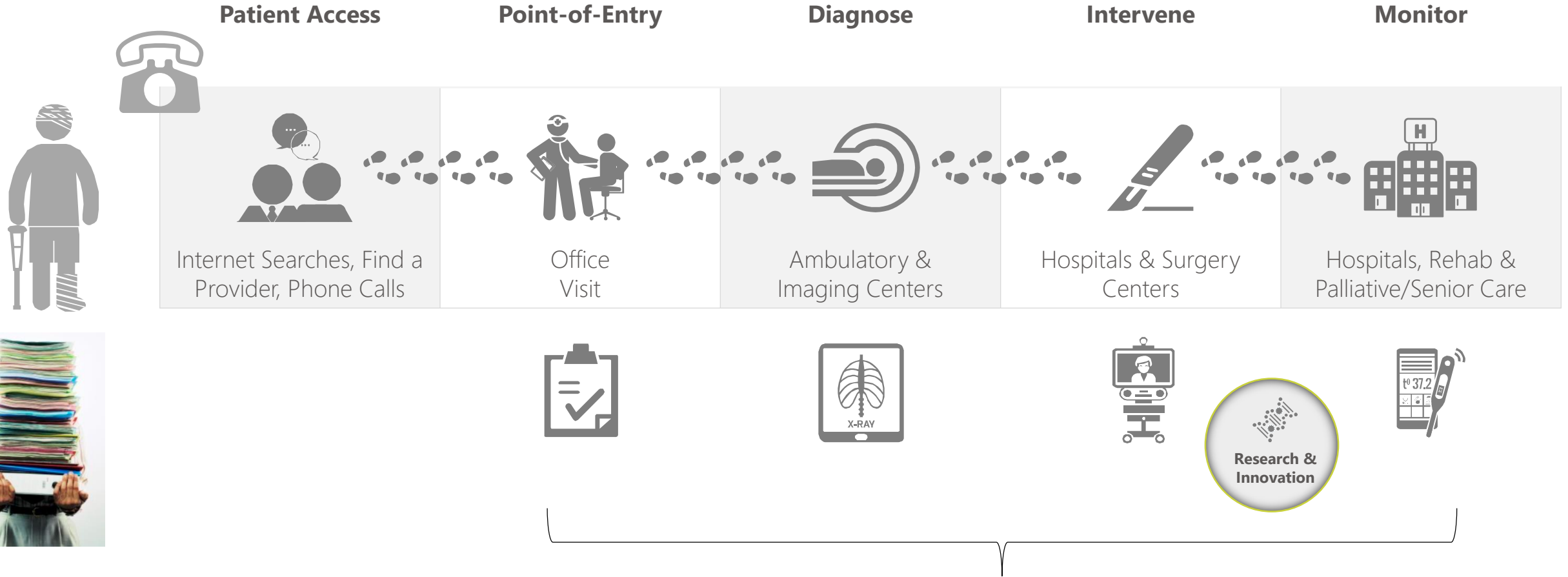
Enhanced Research Capabilities

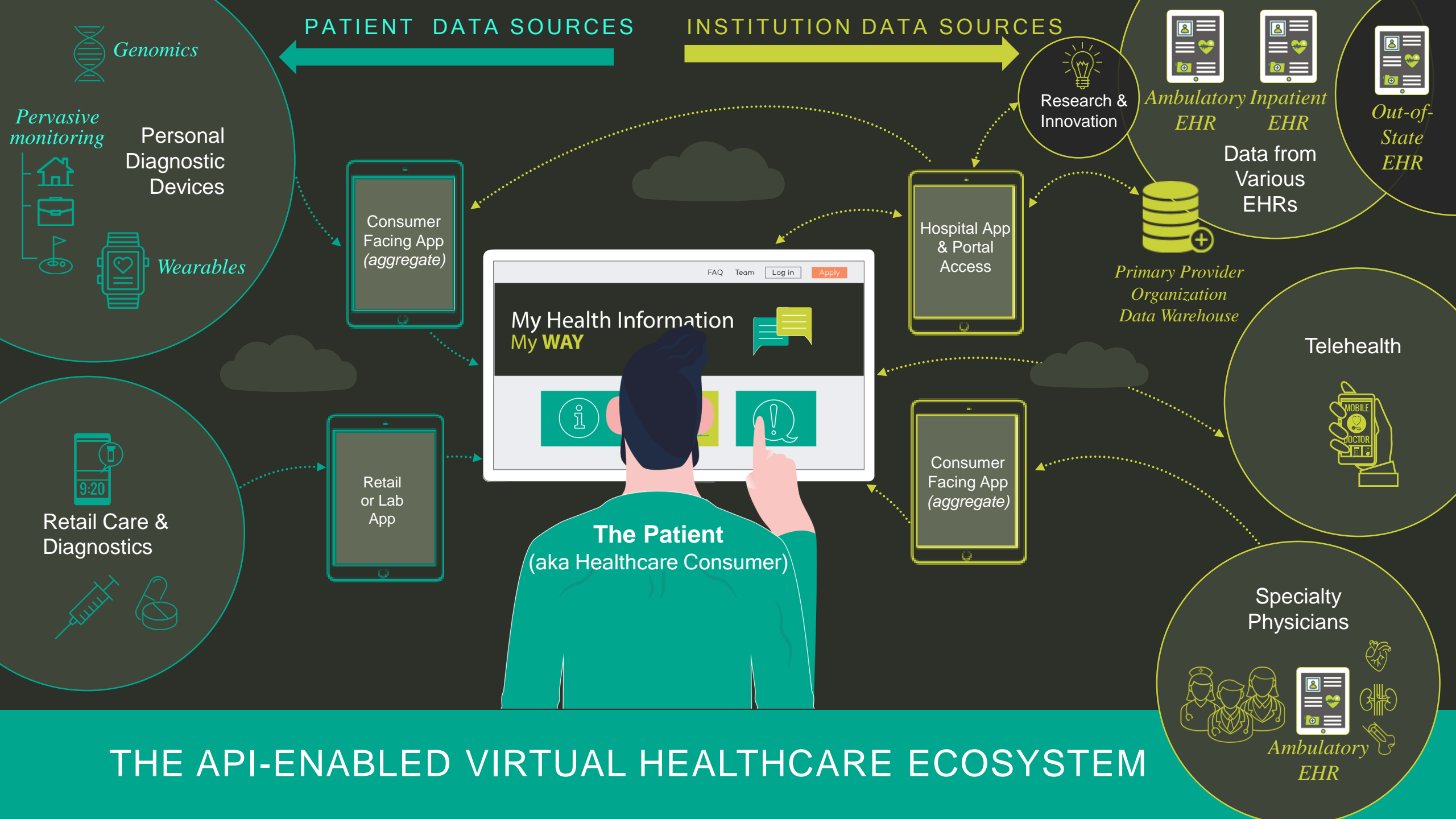
- Enhances provider positioning in the marketplace
- Not all will have the capability; those that do will aggregate larger data sets and provide more offerings
- Also makes partnerships, M&A integrations easier

- Allows more streamlined interfacing with provider organization's own service providers
  - Use in place of extracts, other single & bi-directional interfaces
- Standardization with HL7 FHIR

- Enhanced research capabilities with:
  - Richer data sets
  - Additional data sharing

# THE OLD MODEL





# THE API-ENABLED VIRTUAL HEALTHCARE ECOSYSTEM

# API HYPOTHETICALS

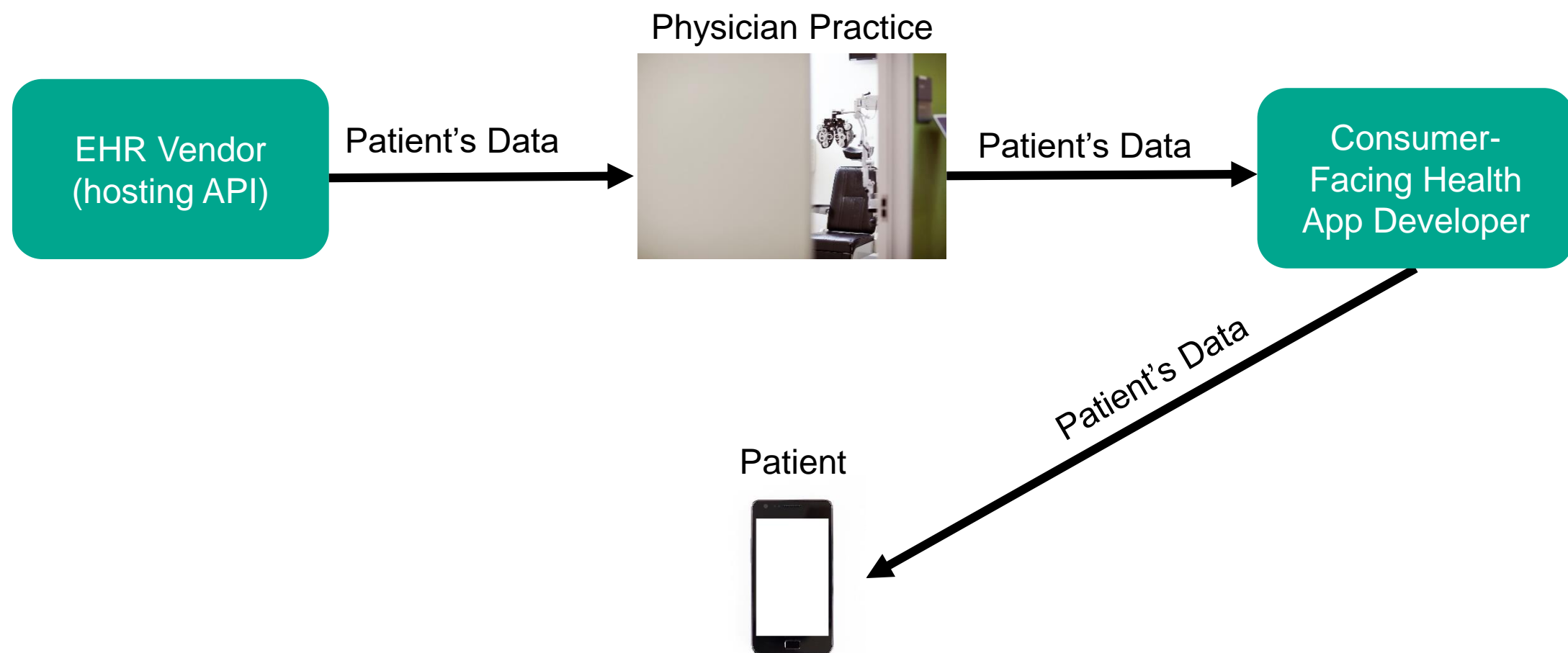


# CERTIFIED API FEES

- The API Condition of Certification imposes fee limitations on developers of certified APIs
- **Only** three categories of permitted fees:
  - Fees to an API Information Source to recover **costs of development, deployment, and upgrades**
  - Fees to an API Information Source to recover **incremental usage costs**
  - Fees to an API User for **value-added services** (e.g., preferred placement in Certified API Developer's app store)



# HYPOTHETICAL #1: CONSUMER FACING APP ACCESS THROUGH CERTIFIED API



# HYPOTHETICAL #2A: THIRD-PARTY POPULATION HEALTH ANALYTICS VENDOR THROUGH CERTIFIED API



# HYPOTHETICAL #2B: THIRD-PARTY POPULATION HEALTH ANALYTICS VENDOR THROUGH PROPRIETARY API



# THANK YOU / QUESTIONS?

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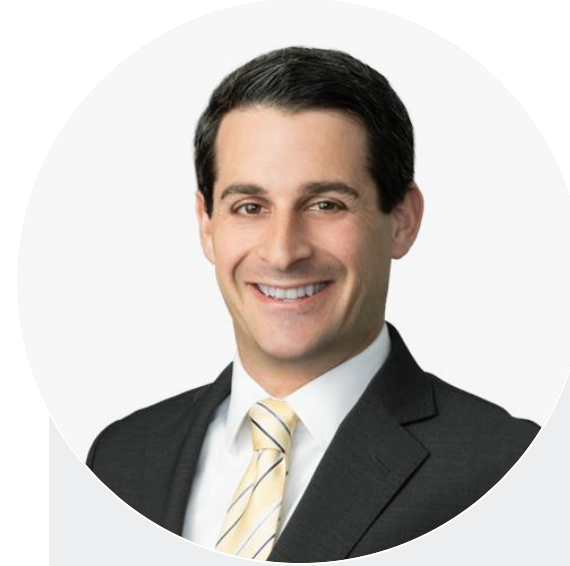


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