

## Overview of Argonaut Initiatives

Eric Haas, Health eData Inc



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# Instructor

## Eric Haas

- President, Health eData Inc
- Veterinarian
- Primary Editor, FHIR Specification
- Primary Editor, Argonaut Data Query IG / US FHIR Core IG, Scheduling IG
- [ehaas@healthedatainc.com](mailto:ehaas@healthedatainc.com)



# Outline

Introductions

Background on Argonaut Scheduling Project

Argonaut Scheduling Project Scope and Use Cases

Scheduling Transactions

Future

**Argonaut Scheduling IG:**

<http://www.fhir.org/guides/argonaut/scheduling/patient-scheduling.html>

# What is the Argonaut Project?



- *The Argonaut Project is an **implementation community** comprising leading **technology vendors and provider organizations** to **accelerate the use of FHIR and OAuth** in health care information exchange.*

## **We are:**

- Private sector initiated and funded
- Working collaboratively with other FHIR initiatives such as SMART-on-FHIR, the Health Systems Platform Consortium, and the FHIR Foundation
- Creating open industry Implementation Guides in high priority use cases of importance to patients, providers and the industry as a whole

## **We are NOT:**

- A standards development organization
- A separate legal entity
- A proprietary activity

## Other Argonaut Initiatives

SMART on FHIR support (2015-2016)

Data Query and Document Query ( 2015-2016)

Provider Directory (2016)

**Scheduling** (2017)

CDS Hooks support (2017)

Questionnaire (current)

Clinical Notes (current)

Bulk Data(current)

## Special Thanks To...

- Cooper Thompson (Epic)
- Brandon Larue (ZocDoc)
- Brian Postlethwaite (Telstra)

# Argonaut Scheduling Backgrounds

- Based on the *STU3* FHIR Scheduling Resources
  - [Appointment 3](#)
  - ~~[AppointmentResponse 3](#)~~
  - [Schedule 3](#)
  - [Slot 3](#)
- As well as Practitioner, Patient, Subscription, Coverage, Bundle

# Argonaut Scheduling Project Scope and Use Cases

- Booking
- Cancelling (and rescheduling)
- Searching Appointments



# Lesson #1 Scheduling is not Easy!



# Argonaut Scheduling Project Scope and Use Cases

- We devoted first quarter defining our scope
- Simple stuff
  - Appointments that can be made with only the basic information
    - not a lot of dependencies
    - defined 40 common visit types
  - Rules out these use cases
    - Requests
    - Query for more information
    - Discovery

# Argonaut Scheduling Project Scope and Use Cases

- Patient Based Scheduling
  - Both new and existing patients
    - “Open Scheduling” vs preregistration
  - Via EHR Patient Portals vs Third party apps
    - Including where the apps use there own business logic

# Argonaut Scheduling Project Scope and Use Cases

- Provider Based Scheduling
  - Both new and existing patients
  - Between Organizations and Within Organizations

# Argonaut Scheduling Project Scope and Use Cases

- Created Scheduling IG with 4 basic scenarios documenting the Scheduling API for each
  - Patient based scheduling:
    - Use Case 1: Patient Portal Scheduling for existing patients
    - Use Case 2: Open Scheduling for new patient or existing patient
    - Use Case 3 Prefetching Open Slots
  - Provider based scheduling:
    - Use Case 1: Scheduling across systems
    - Use Case 2: Scheduling for existing patient across systems
    - Use Case 3: Scheduling for existing patient within a system

<http://www.fhir.org/guides/argonaut/scheduling/patient-scheduling.html>

# Scheduling Transactions

- All these use case are all variations on a similar theme using the same transactions:
  - ( except for prefetching )
    1. **Appointment Availability Operation**
    2. Book Operation
    3. Hold Operation
    4. Patient Registration
    5. Cancel Book/Hold
    6. Search

# Scheduling Transactions

- Appointment Availability Operation is the key transaction:

Based on the set of input parameters supplied by the Client, the Server determines which schedulable “assets” are needed for the visit and returns a set of possible Appointment times – As Appointment resources-where all required assets are available.

- Specialty
- Practitioner
- visit type\*
- etc

# Scheduling Transactions

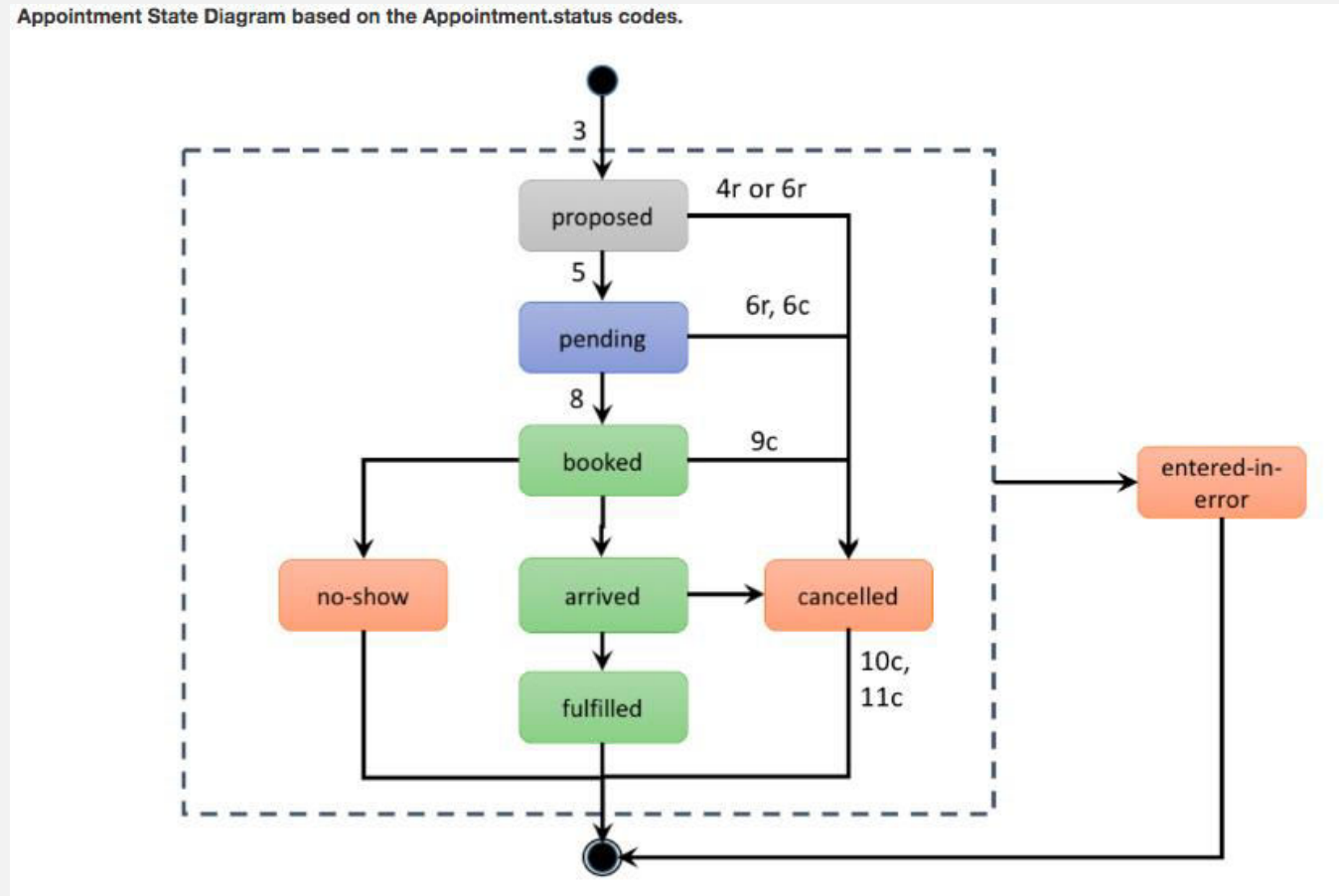
- Optional Hold and Book Operations:

These operation change the appointment status. The server determines if the nominated appointment is still available (i.e., all the required actors and physical assets needed for the appointment are still available) and either accepts or rejects the hold request and updates the resource status accordingly.



# Scheduling Transactions

- State Diagram



# Scheduling Transactions

- Patient login/registration:
  - Includes registration of new patients, fetching PID, updating collecting coverage information
  - may be done at the beginning/middle or end of the process
    - "open scheduling" - where register the patient right before they book.
    - "patient search using the patient \$match operation to find patients
    - includes registration of new patients, fetching PID, updating collecting coverage information

# Scheduling Transactions

- Cancelling and releasing holds
  - Patch Operation including reason codes for cancelation
- Rescheduling is defined as a Cancel + Schedule new appointment

# Scheduling Transactions : Prefetching Slots

- Key differences with other workflows
  - EHR/Scheduler *shares* business rules (out of band step) with the Third Part App service
  - Third party app use there own logic to determine availability

# Scheduling Transactions : Prefetching Slots

1. Initial loads of slots (periodically reset)
2. *Subscribe* for schedule change ( which lead to change is slot status )
3. EHR notifies of schedule changes
  1. Event based triggers
4. app server polls for the updated slot data using the \$prefetch operation

# Present and Future

- Tested at 2 Connectathons
- Implementations
  - Provider based – Epic
  - Health Samuri
  - Dutch adopting parts the guide

# Present and Future

- Future Scope
  - Requests
  - Using Forms to get more information
  - Discovery of available service using Provider Directory
- Adding the Availability operation to the FHIR Specification
- Event based pub/sub in FHIR using the prefetch scenario in upcoming HL7 Connectathon
  - Update Subscription resource in FHIR

## Demo ( time and internet access permitting)

- Python Flask based demo app...



