

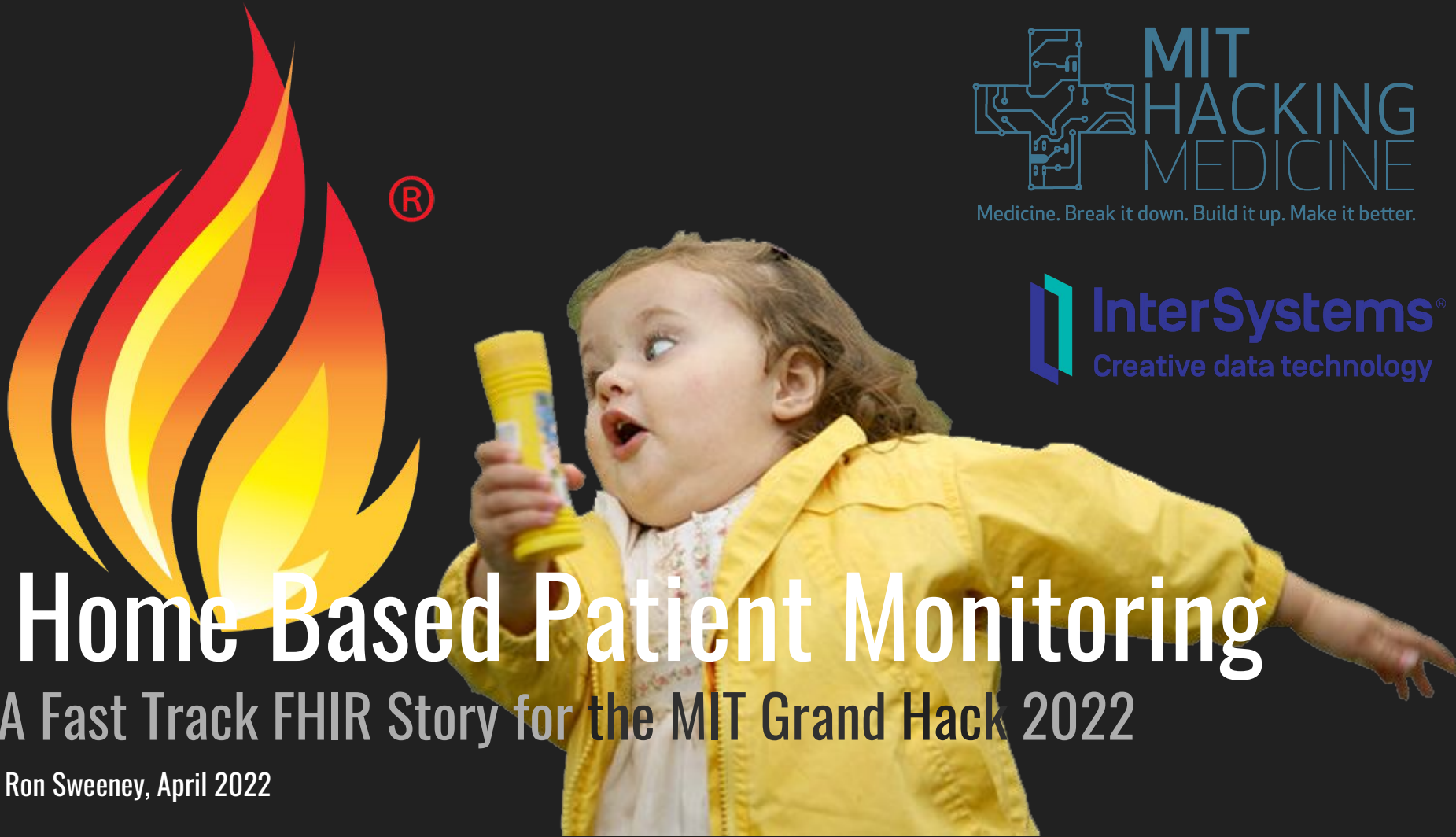
Medicine. Break it down. Build it up. Make it better.

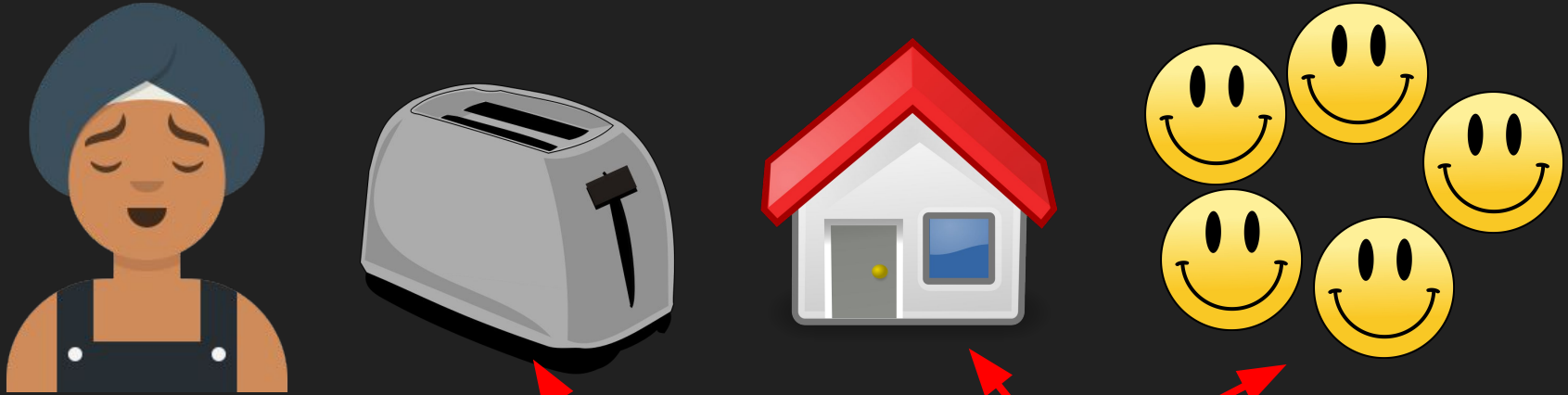


Home Based Patient Monitoring

A Fast Track FHIR Story for the MIT Grand Hack 2022

Ron Sweeney, April 2022

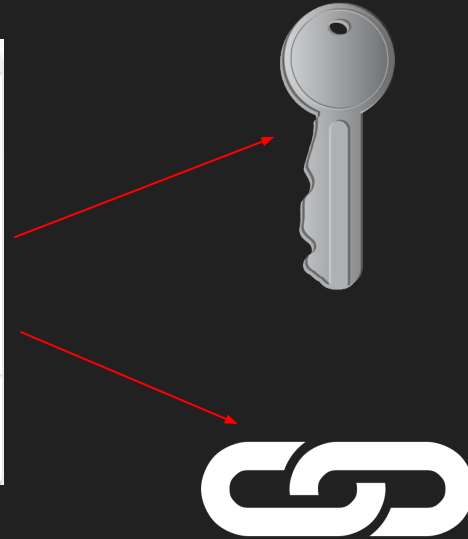
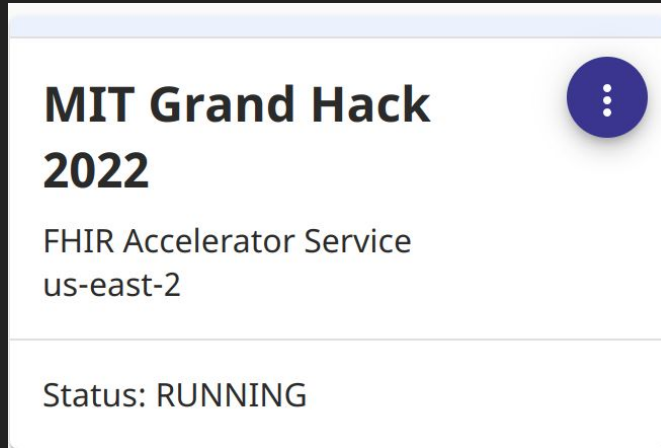
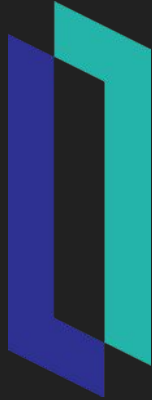




You built a Device to put in a Home to
Record the Number of Smiles Occuring on a Patient

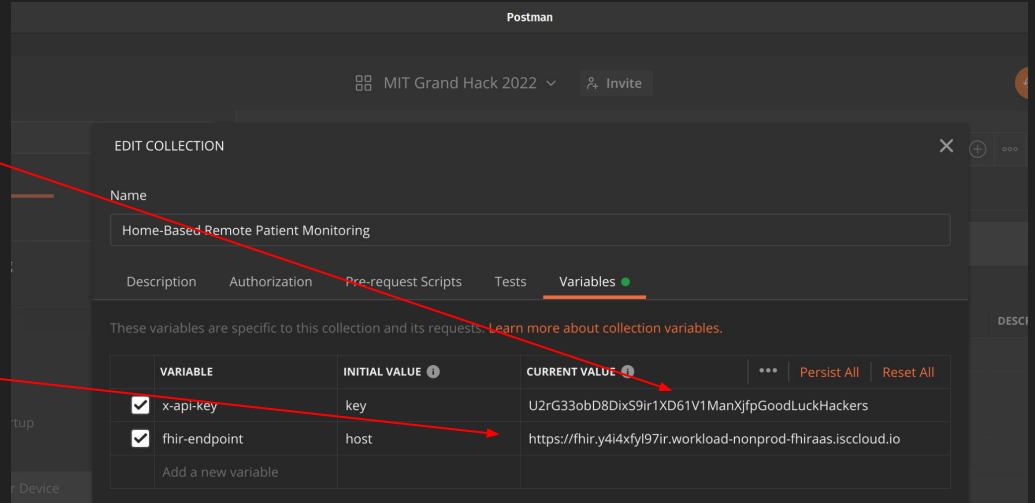


Where to put the Smiles ?
FHIR® Fast Healthcare Interoperability Resources



Provision a FHIR Accelerator: <https://grandhack-2022.isccloud.io>

Naruto Run!

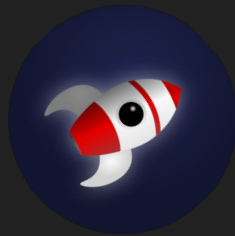


Go get the collection here:

<https://www.postman.com/sween/workspace/mit-grand-hack-2022/overview>



FHIR Story Begins



MIT Grand Hack 2022

History Collections APIs

New Collection

Home-Based Remote Patient Monitoring ★
6 requests

- POST Establish Your Startup Organization
- POST Add Your Startup Device
- POST Establish Your Startup Device Metric
- POST Register a Patient in our Organization/Startup
- POST Have Your Device Emit a Metric
- GET Get All Smiles For Patient Recorded by Our Device

Launch... POST Est... X POST Add... POST Est... POST Reg... POST Hav... GET Get ...

No Environment

Examples 0 BUILD

Establish Your Startup Organization

This will establish an organization who may procure the device for the patient, or an awesome startup idea.

POST {{fhir-endpoint}}/Organization

Send Save

Params Authorization Headers (10) Body Pre-request Script Tests Settings Cookies Code

```
1 {
2   "resourceType": "Organization",
3   "id": "wusu",
4   "name": "What Up Start Up",
5   "alias": [
6     "Grand Hack Start Up"
7   ],
8   "telecom": [
9     /
```

Register your Startup/Organization



MIT Grand Hack 2022

History Collections APIs

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Launchp... POST Est... POST Add... X POST Est... POST Reg... POST Hav... GET Get ...

No Environment

Examples 0 BUILD

POST {{fhir-endpoint}}/Device

Send Save

Params Authorization Headers (10) Body Pre-request Script Tests Settings Cookies Code

none form-data x-www-form-urlencoded raw binary GraphQL Text

```
1 {
2   "resourceType": "Device",
3   "id": "smiledetector2000",
4   "identifier": [
5     {
6       "system": "http://whatupstartup.com/devices/id",
7       "value": "sd2000"
8     }
9   ],
10 }
```

Register your Device



MIT Grand Hack 2022

History Collections APIs

New Collection

Home-Based Remote Patient Monitoring ★
6 requests

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- POST Establish Your Startup Device Metric
- POST Register a Patient in our Organization/Startup
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- GET Get All Smiles For Patient Recorded by Our Device

Launchp... POST Est... POST Add... POST Est... X POST Reg... POST Hav... GET Get ...

No Environment

Establish Your Startup Device Metric

POST {{thir-endpoint)}/DeviceMetric

Send Save

Params Authorization Headers (10) Body Pre-request Script Tests Settings Cookies Code

none form-data x-www-form-urlencoded raw binary GraphQL Text

```
1 {
2   "resourceType": "DeviceMetric",
3   "id": "smiles",
4   "identifier": [
5     {
6       "system": "http://whatupstartup.com/devicemetric/id",
7       "value": "smilesmetric"
8     }
9   ],
10  "type": {
```

Register your Device Metric



Interface showing API request configuration for "Register a Patient in our Organization/Startup".

Left Panel (Collections):

- Home-Based Remote Patient Monitoring (6 requests)
- POST Establish Your Startup Organization
- POST Add Your Startup Device
- POST Establish Your Startup Device Metric
- POST Register a Patient in our Organization/Startup**
- POST Have Your Device Emit a Metric
- GET Get All Smiles For Patient Recorded by Our Device

Right Panel (Request Configuration):

- Method:** POST
- URL:** {{fhir-endpoint}}/Patient
- Body:**

```
1 {
2   "resourceType": "Patient",
3   "id": "ourpatient",
4   "identifier": [
5     {
6       "use": "usual",
7       "type": {
8         "coding": [
9           {
10            "system": "http://terminology.hl7.org/CodeSystem/v2-0203",
```

Register a Patient, Associate to your Startup/Organization



MIT Grand Hack 2022

History Collections APIs

New Collection

Home-Based Remote Patient Monitoring ★
6 requests

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- POST Register a Patient in our Organization/Startup
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Launch... POST Est... POST Add... POST Est... POST Reg... POST Hav... X GET Get ...

No Environment

Have Your Device Emit a Metric!

POST {{fhir-endpoint}}/Observation

Send Save

Params Authorization Headers (10) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL Text

```
1 {
2   "resourceType": "Observation",
3   "id": "smiles2000",
4   "identifier": [
5     {
6       "system": "http://whatupstartup.com/observation/id",
7       "value": "1111111"
8     }
9   ],
10  "status": "final",
```

Emit Metrics!



MIT Grand Hack 2022 v Invite

Filter

History Collections APIs

New Collection

Home-Based Remote Patient Monitoring ★
6 requests

- POST Establish Your Startup Organization
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- POST Register a Patient in our Organization/Startup
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- GET Get All Smiles For Patient Recorded by Our Device

Launch... POST Est... POST Add... POST Est... POST Reg... POST Hav... GET Get ... X + ...

No Environment

Examples 0 BUILD

Get All Smiles For Patient Recorded by Our Device

GET {{fhir-endpoint))/Observation?device=DeviceMetric%2Fsmiles&patient=ourpatient

Send Save

Params Authorization Headers (8) Body Pre-request Script Tests Settings Cookies Code

Query Params

KEY	VALUE	DESCRIPTION	...	Bulk Edit
<input checked="" type="checkbox"/> device	DeviceMetric%2Fsmiles			
<input checked="" type="checkbox"/> patient	ourpatient			
Key	Value	Description		

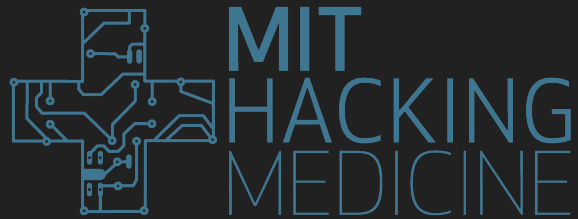
Body Cookies Headers (10) Test Results

Status: 200 OK Time: 193 ms Size: 8.29 KB Save Response

Pretty Raw Preview Visualize JSON

```
1 {  
2   "resourceType": "Bundle",
```

Get Metrics for Patient from our Device!



Medicine. Break it down. Build it up. Make it better.

Meet our Mentors 2022

Good Luck and Reach Out!
- Mentors