# Schedule of Events

### FRIDAY- WYTHE HOTEL (80 Wythe Ave, Brooklyn, NY 11249)

|  |  |
| --- | --- |
| **5:30pm** | Check-in for Hackathon begins |
| **6:00pm - 7:00pm** | Panel on Healthcare: The Future of Healthcare - *How to Create A System We Want to Use As Patients* |
| **7:00pm - 7:05pm** | Quick Break! |
| **7:05pm - 8:15pm** | Hackathon Introduction from NYeC and Bing |
| **8:00pm - 10:00pm** | Hacker Happy Hour by NYeC |
| **9:00pm** | Hacking begins! |

### SATURDAY- THIRD WARD (195 Morgan Ave, Brooklyn, NY 11237)

|  |  |
| --- | --- |
| **9:30am** | Doors open |
| **9:30am - 10:30am** | Breakfast |
| **10:00am - 10:30am** | API demos |
| **9:30am - 12:30pm** | Hacking continues |
| **12:30pm - 1:30pm** | Lunch (hacking continues) |
| **1:30pm - 6:00pm** | Hacking |
| **6:00pm - 7:00pm** | Dinner |
| **6:00pm - 7:00pm** | Demos/Tech Check |
| **7:00pm - 9:00pm** | Demos |
| **9:30pm** | Winners announced & drinks |

# NYeC-hackathon-logo_bpresents.jpgHackathon Challenge Overview

*(Note: The information used in this document contains fictitious identities; however, the values are representative of real world cases)*

## Your Objective

Develop a tool that helps medical providers, patients and caregivers better manage the care of diabetic patients.

## Key Challenge: Diabetes

An estimated 1.3 million adult New Yorkers (almost one in eight) now have diabetes. Diabetes has increased 13% in New York City since 2002. In 2007, 18 of every 100,000 New Yorkers died from diabetes**.**

The major goal in managing diabetes is to minimize any elevation of blood sugar (glucose) without causing abnormally low levels of blood sugar. Treatment for diabetes typically includes a combination of:

* Increasing physical exercise
* Losing weight
* Following a healthy diet
* Quitting smoking
* Monitoring blood glucose level
* Taking insulin injections

Diabetes is best treated when delivered by a **team** of providers, including family physicians, eye doctors, nurses, dietitians, fitness coaches and family members.

The Statewide Health Information Network for New York ([SHIN-NY](http://nyehealth.org/resources/glossary)) is a network of information transmitted between private practices, nursing homes, clinics, hospitals, etc. in New York State. The SHIN-NY provides secure access to clinical information about patients who have consented to allow their data to be shared. The SHIN-NY API provides a gateway into the SHIN-NY so that new and innovative applications can be built using SHIN-NY data. For the purpose of this Hackathon, we have provided you with access to a group of five test patients of various ages and genders, all of whom are dealing with diabetes.

Your challenge is to create a tool that enables a medical provider to give better care to his/her patients with diabetes, or that helps a patient better manage his/her own care.

Some examples might include:

* Medication or lab test reminders
* Follow up visit reminders
* Identifying other providers convenient to the patient’s location
* Patient education regarding specific allergies
* Tracking patient’s lab values/vital signs over time
* Analysis of provider’s diabetic population with visual displays and
* Providing each patient with information regarding the impact of their comorbidities on diabetes management.

***Let your imagination be your guide***

## Resources

Hackers can post questions via email ([shinnyapi-hackathon@googlegroups.com](mailto:shinnyapi-hackathon@googlegroups.com)) or by visiting the Google group (<https://groups.google.com/d/forum/shinnyapi-hackathon>).

Below are APIs and websites you may wish to look into for adding value to your tool.

API section of hackerleague north side festival page (<https://www.hackerleague.org/hackathons/northside-festivals-1st-annual-hackathon>)

<http://www.bing.com/developers/>

<http://www.nlm.nih.gov/api/>

<http://rxnav.nlm.nih.gov/RxNormAPI.html>

<http://www.healthgrades.com/>

<http://doctor.webmd.com/>

<http://www.zocdoc.com/>

<http://developer.runkeeper.com/healthgraph>

https://health.data.ny.gov/

## SHIN-NY API returns Clinical Data as a Continuity of Care Document (CCD)

The Patient Record Lookup API returns the patient’s medical history information structured within the standard Continuity of Care Document (CCD). The CCD is the electronic document exchange standard for sharing patient summary information. The CCD version that is utilized by the SHIN-NY is the HITSP C32 Version 2.5 document (<http://www.hitsp.org/ConstructSet_Details.aspx?&PrefixAlpha=4&PrefixNumeric=32>

The patient medical history summary contains a core data set of the most relevant administrative (e.g. registration, insurance, etc.), demographic, and clinical information (e.g. test results, medication lists, etc.) regarding a patient's healthcare history, covering one or more healthcare encounters. Its primary use case is to provide a snapshot in time containing the clinical, demographic, and administrative data for a specific patient.

The CCD is built using Health Level 7 (HL7) (<http://www.hl7.org/>) Clinical Document Architecture (CDA) elements. It has been endorsed by The Certification Commission for Health Information Technology (www.cchit.org) as part of their EHR certification requirements and is predicted to drive the use of electronic exchange for clinical data.

Because of its small fixed XML tag set, CCD can be universally rendered as HTML or PDF without requiring specialized communication efforts. CCD uses a detailed set of constraints (or templates) for CDA elements. The CCD specification is an XML-based markup standard intended to specify the encoding, structure and semantics of a patient summary clinical document for exchange.

#### CCD contents includes

| Content topic | Description |
| --- | --- |
| 1. Header | Overall document information such as sender ID, date and time |
| 2. Purpose |  |
| 3. Problems | Clinical information containing active and inactive problems |
| 4. Procedures | The act whose immediate and primary outcome is the alteration of the physical condition of the patient |
| 5. Family history | Medical history of family |
| 6. Social history | Social history of patient |
| 7. Payers | Information on insurance coverage |
| 8. Advance directives | Patient input with regards to |
| 9. Allergies | Patient’s allergies |
| 10. Medications | Prescription medication the patient has been prescribed |
| 11. Immunizations | Immunization given to patients |
| 12. Medical equipment | Medical Equipment |
| 13. Vital signs | Vital signs measured |
| 14. Functional stats | Functional stats |
| 15. Results | Lab, radiology, etc. |
| 16. Encounters | Patient visits |
| 17. Plan of care | Plan of care determined by provider |

## Sample Patient Information

Below you will find five sample patients whose data is accessible via the SHIN-NY API. You can use any of these to build and test your tool. If you have questions or comments please post them at the SHIN-NY Google Group [shinnyapi-hackathon@googlegroups.com](mailto:shinnyapi-hackathon@googlegroups.com)

#### #1 - Diabetic Test Patient

The patient is a 34 year old obese female with history of Type II Diabetes and Polycystic Ovaries. Patient presents for routine follow-up. Notes recent ten pound weight loss using diet and exercise, but has regained five pounds. Patient attributes inconsistency with diet and exercise to stress at work. Expresses desire to restart weight loss regimen and notes she registered for gym membership. Reports normal menses on oral contraceptives. Denies pain or other complaints at this time.

#### #2 - Diabetic Test Patient

The patient is a 70 year old man, with hypertension, hypercholsterolemia and type one diabetes, who is now presenting with pain in his right upper extremity. He noticed redness about three days ago after giving himself an insulin injection to the arm. The redness has become more extensive and painful and associated with some swelling. Patient reports he reused insulin needles when he ran out of supply.  
The patient is alert and oriented in no acute distress but appears uncomfortable. There is an area of redness and induration approximately 5 cm in diameter with associated swelling in the outer right upper arm. Patient has full range of motion but exquisite tenderness to palpation in the affected area. Remaining medical exam was unremarkable.

#### #3 - Diabetic Test Patient

Patient is a 33 year old 32 week pregnant female with Gestational Diabetes poorly controlled by diet. Fetal non-stress test and biophysical profile within normal limits. Fetal measurements normal for gestational age. Patient reports normal fetal movement. Reports she is feeling well, no complaints at this time. Log of fingerstick blood glucose reveals consistently elevated blood glucose.

#### #4 - Diabetic Test Patient

Patient is a 22 year old male recently diagnosed with Type 1 Diabetes who presents complaining of dizziness and shakiness. Patient reports he has been taking his insulin as ordered but last ate this morning and felt symptomatic after playing basketball with friends for 2 hours. Patient is pale and diaphoretic, exam otherwise normal. Fingerstick blood glucose=48 mg/dl. 4oz juice and crackers provided. Symptoms resolved. Repeat fingerstick blood glucose=88.

#### #5 - Diabetic Test Patient

The patient is a 57 year old overweight man, with history of hypertension, hypercholesterolemia and Type 2 Diabetes well controlled on oral medication. Patient presents with 1 week history of cough productive of green mucous, nasal congestion and sore throat. Patient is a non-smoker.

# Hackathon Rules and Judging Criteria

### The Rules

1. You may use any publicly available API as listed on the Hackathon resources page.

2. You must use the APIs from the SHIN-NY.

3. You have 24 hours to develop a workable prototype.

Leveraging open-source resources is strongly encouraged, but all submissions must be built within the time frame of Hacking Health alone (9:00pm June 14th - 7:00PM June 15th). Team projects must be listed on the HackerLeague Projects page by 7:00pm on June 15th to be considered by the judges.

### Judging Criteria

All projects **must use** NYeC API to be considered by judges.

**Is it functional? (25%)**

* Does it accomplish its stated goal?
* Does it work as is, or does it require additional resources (code or data?)

**Is it intuitive? (25%)**

* Is it easy to understand?
* Is it easy to use?
* Is it creative?

**Is it impactful? (25%)**

* Does it solve a real problem?
* How many people does it impact (few/many)?

**Is it viable? (25%)**

* Would patients or providers use it?

# Technical Information

### WiFi Information

**Wythe Hotel**

SSID: Wythe

Username: 80WYTHE

Password: george

**3rd Ward**

SSID: 3rd Ward Morgan

PW: antistrot

### Twitter Information

Event hashtag: #Nside

@NYeHealth

@Bing