

Healthix PREDICTIVE ANALYTICS TRAINING

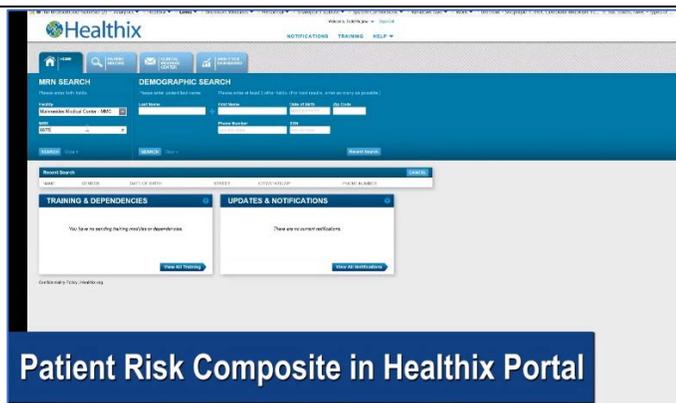


Welcome to the Predictive Analytics Training

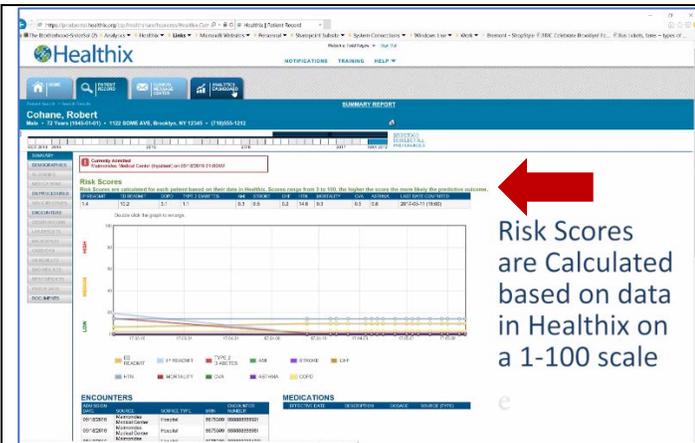


Today's training is broken into four segments -- The first provides a look at the Patient Risk Composite within the Healthix Portal. The next three are accessed through the Predictive Dashboard and include Population Health Management, Acute Patient Care Management and Market Share and Volume Analysis.

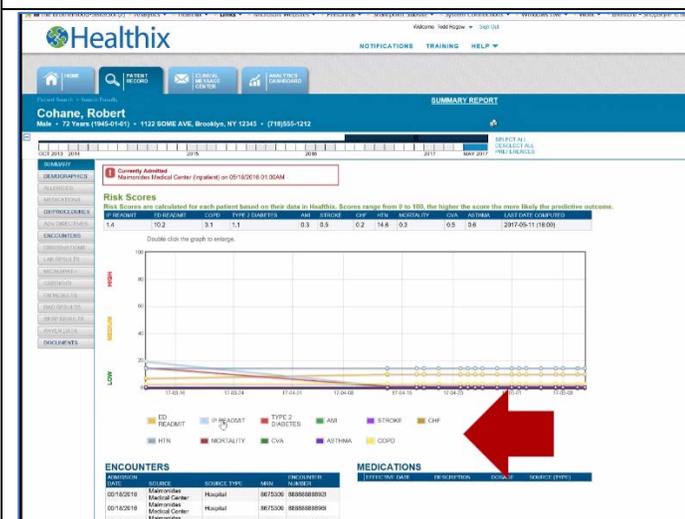
Typically, these four areas are accessed and utilized by people with very different roles in an organization.



For participants subscribing to the HBI Predictive Analytics Service, when you search for a patient in the Healthix Portal, you will be brought to the patient summary screen that presents a complete risk profile displayed in both numeric and graph form. This appears front and center above the encounter, medication and other information.

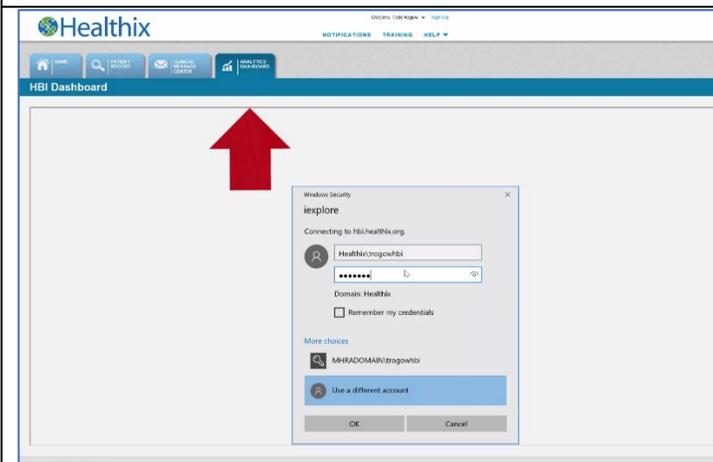


Risk Scores are presented based on data in Healthix. Risk scores are calculated based on a 1-100 scale. The higher the score, the more likelihood the outcome. The top bar shows the risk of Inpatient and ED admission followed by clinical outcomes such as COPD, Diabetes, Stroke and others. If you mouse over the title bar a pop-up window will appear with helpful information.

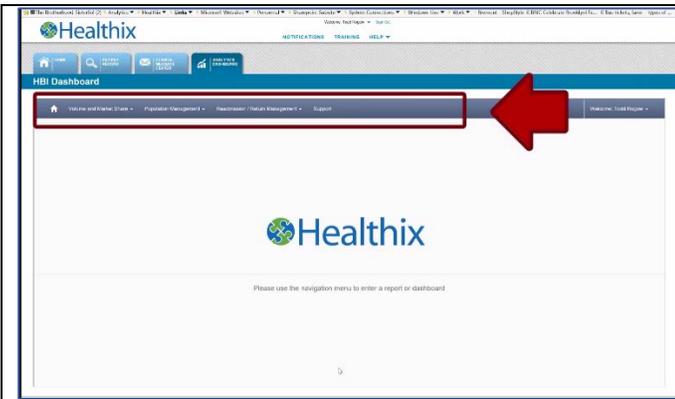


The graph shows all trend lines, but you can easily click off those deemed unnecessary just by clicking on the title. This will give you the view you desire.

Unless the lines appear in the top half of the graph area the risk is low to moderate.

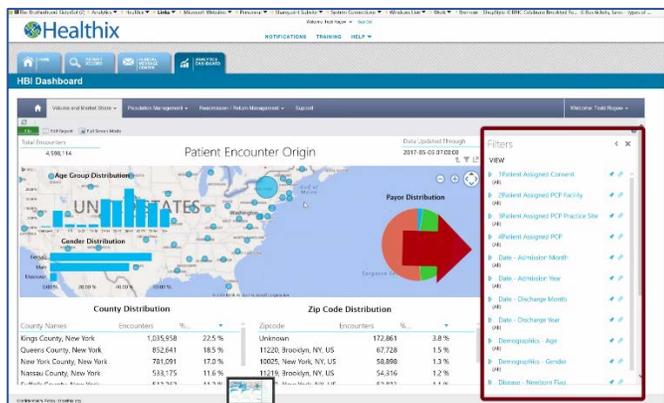


The next three segments are accessed through the Predictive Analytics Dashboard. To access this area you click on the Analytics tab above which should be in dark blue if active. Once you click on the tab a login screen will appear. Use your HBI login credentials to access this system.



A few tips for navigating the dashboard. Here you see the main 3 areas in the top grey bar. Each has a drop down menu that will focus from the global view to the most specific view.

When you first click on a section you will be presented with the largest geographic view (the world) but you can quickly focus this view down to New York State or even your county – whatever you desire.



The map shown below allows you to click on a geographic area to zoom in on the data point. You will also notice that as you hover with your mouse you will see details of the area. On the left you have an age and gender graph and you can drill down on any bar just by clicking. To the right is the list of filters you may choose to view the groupings you wish. All three workflows (population Health, Acute Patient Care and Market Share) have same navigation and drill down behaviors.

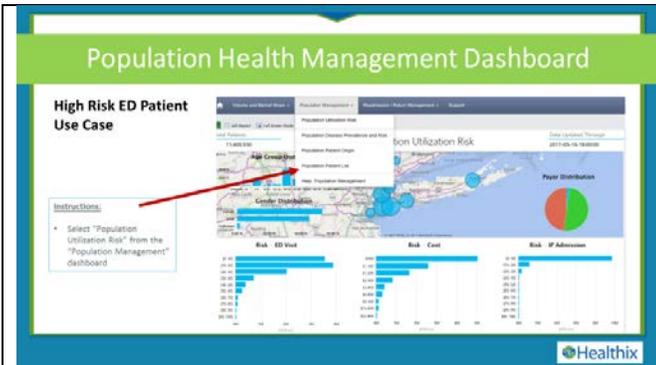
Population Health Management

Managing Patients at Home Before High Cost Events Occur

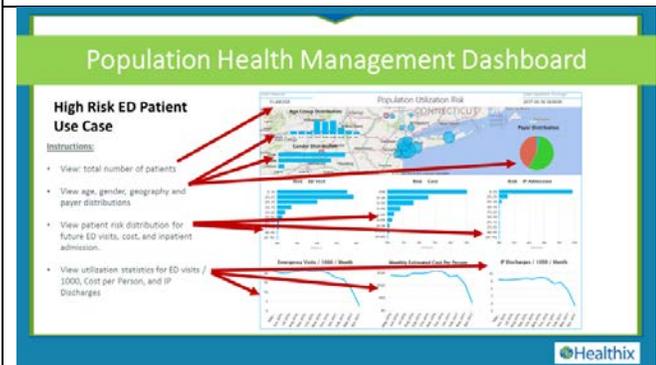
Use Case: Target High Risk ED Patients for Proactive Interventions

The next pages will walk through 3 distinct workflows. Beginning with Population Health Management. The purpose of the population health management is to take care of patients in their home and intervene before they come to the hospital.

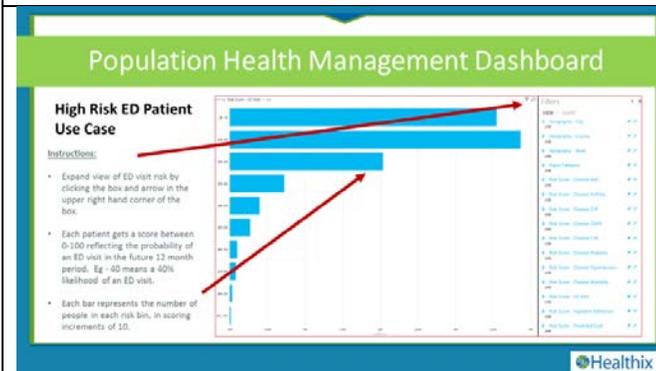
While we include screen shots here it is recommended that you watch the demo video or partake in a live demonstration to get a feel for the full capabilities and the interactive nature of the dashboard.



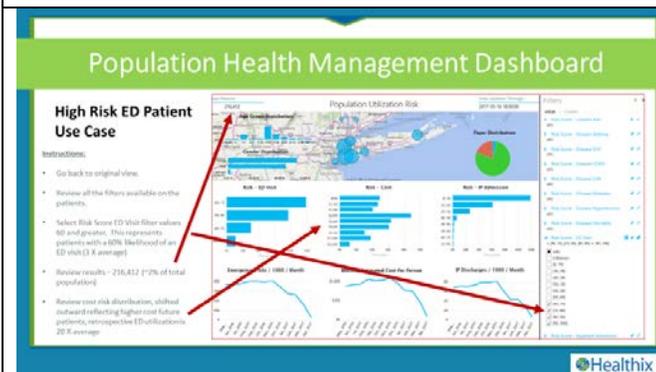
Here is the pulldown and navigation for the Population Health Management. We begin with the Population Utilization Risk (most global view)



Here you can see the entire population within Healthix since Jan 2014. The gender, age, and payer mix. Followed by the Risk for ED, Cost and Inpatient Admission (IP). Lastly it shows the utilization statistics for ED, Cost and IP visits per 1,000 individuals.



Clicking to expand the view on the ED Risk using the expand icon in the upper right – you now have a zoomed-in view of the patient ED risk by 10 point increments – if you hover over these bars you will see more details. Clicking on the bar drills down only on that area.



Going back to the original view. You can review the filters on right. Select the Risk scores of 60 and greater (4 ranges = patients with a 60% and greater likelihood of being admitted to ER). This returns a result of 216,412 patients (estimated 2% of total population). You can now see the cost risk distribution is much higher as is the ED Visit utilization per 1000.

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- Select "Population Patient List" from the Population Management dashboard

Now we are going to drill down to those specific patients, with the goal of determining how we can intervene in advance to ensure that these patients don't need to be admitted to the ER later. Click on the Population Patient List in the drop-down menu.

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- Select "Risk Score - ED Visit" values 60 and greater.

From the filter presented you again select the ED Visit Risk Score for values greater than 60.

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- Select "Sort By" Risk Score ED Visit value
- Keep "Sort Direction" as "descending" (hidden from view in this screen shot)
- Hit "Apply"

In far right you select "Sort Risk by ED Visit. Keep Sort Direction as descending and Hit Apply

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- Select (double click) patient # "10944"

Here is the list of patients. In this view, we show dummy numbers, but with consent you would see the patient's name, age, gender, DOB. This patient has a 91 percent risk of ED visit. By clicking on this link it will bring up that particular patient's profile.

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- View historical activity summary
- View all future 12 month risk elevated risk for ED visit and inpatient admission. Low risk for all others
- View patients rising risk for ED visits over 12 months
- Click on "Chronic Disease / Medications / Lab Tests Tab"

Here you can see the patients Previous 12 month history. In the far right column you see the risk scores. Any score in red is high while orange is elevated. Below you see a trend graph over time. To drill down click on the Chronic Disease Tab.

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- View patient chronic disease
- View abnormal labs
- Click on "Care Interventions / Risk Factors" tab

Here you can see the Chronic Diseases the patient suffers from Alcohol related disorders, anxiety, substance related issues, You can also see a list of just the abnormal labs. Now Click on Intervention /Risk Factors Tab.

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- View Patient Risk Factors and Suggested Interventions
- View Model Factors driving risk score
- Click on "Encounter History Tab"

Here you can see a list of care interventions, and the model factors driving the risk score. Click on the Encounter Tab.

Population Health Management Dashboard

High Risk ED Patient Use Case

Instructions:

- View patient encounter admission and visit history

Here you can see the encounters for the last 12 months of the year and see in the right column what impact that had on the risk score.

Acute Patient Risk Management

Engaging Patients Pre Discharge
Before High Cost Events Occur

Use Case: Target Active Inpatients
At Risk for 30 Day Readmission

This section of the workflow concentrates on the patients that are in the hospital beds now. It looks at those that are most likely to be re-admitted to the ED or as an In Patient, so that an appropriate discharge plan can be created to try and prevent this re-admit.

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Select "Readmission / Return Risk" from the "Readmission / Return Management" Menu



Now we will look at the Readmission / Return Risk – selecting the first option from the pulldown menu.

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- View total number of encounters
- View age, gender, geography and payer distributions
- View patient risk distribution for 30 day inpatient readmissions and 30 day ED revisits
- View performance for historical readmission rates and ED revisit rates



Again, we are at the global screen where you can view the total number of encounters for inpatient and emergency room encounter. Previously with Population Health Management we viewed the number of patients, now we view encounters.

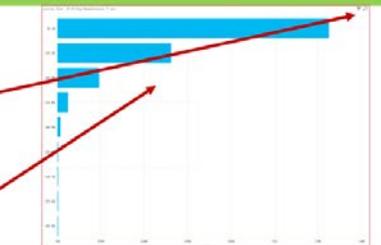
You can drill down by geography, payer, age, gender, as well as 30-day ER or inpatient risk. You can also view the historical readmission rates and ED revisit rates.

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Expand view of 30 day readmission risk by clicking the box and arrow in the upper right hand corner of the box.
- Each patient gets a score between 0-100 reflecting the probability of an inpatient readmission. Eg. 40 means a 40% likelihood of a readmission.
- Each bar represents the number of people in each risk bin, in scoring increments of 10.



Now expanding the view of Inpatient 30-day Re-admissions by using the icon in upper right. You can see the risk scores. Each bar represents 10 % increments.

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Go back to original view.
- Review all the filters available on the patients.
- Select Risk Score 30-day readmission filter values 30 and greater. This represents inpatient encounters with a 30% likelihood of an inpatient readmission.
- Review retrospective IP 30-day readmission rate to reach target than average (2 X).

On this original view you can select the risk score you would like to drill down on. We are going to look at those with at least 30% likelihood of a readmission.

In the middle graph on the left you can see the retrospective of 30 day IP admissions

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Switch to new dashboard
- Select "Readmission / Return Encounter List" from the "Readmission / Return Management" drop-down menu

So to jump into the details and see who those patients are we go to the Readmission / Return Encounter List

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Adjust the Admission Date Range:
 - From: 1/1/17
 - To: (today's date)

We are going to Adjust the Admission Date to show everyone from Jan 1, 2017 to today's date

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Select "New York University Medical Center" under "Discharge Facility" filter

We are going to only look at New York University Medical Center (obviously you will only see organizational data for your own sites).

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Select "Inpatient" under "Encounter Type" filter

Healthix

We will select inpatient under encounter type

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Select "Active Patients" under "Encounter Status" filter

Healthix

We will select active patients

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- Select "Inpatient Readmission Score" under "Sort By" filter
- Hit Apply

Healthix

Then we will select "Inpatient Readmission Score" and "Sort By" filter and hit Apply.

Acute Patient Risk Management: Active Patients

At Risk for In Patient 30-Day Readmission

Instructions:

- We are now looking at a list of active inpatients (in bed not discharged yet) at NYU Medical Center, sorted by descending risk of having 30-day readmission post discharge.
- The highest risk patients should have their care proactively coordinated post discharge.
- Click on the first patient and follow the clinical summary workflow previously described in the population workflow.

Healthix

We are now looking at the list of active inpatients in NYUMC by order of highest 30-day readmission risk.

The highest risk patients should have their care proactively coordinated post discharge.

Clicking on first patient will bring up their details in the same workflow manner as we explored in Population Health Management Workflow

Market Share Analysis

Inpatient Market Share

Use Case: Understand Real-time Performance in Nassau County

Now for the last segment we look at the Market Share Analysis, specifically for inpatient admissions in Nassau County,

Market Share Analysis: Inpatients

Instructions:

- Switch to new dashboard
- Select "Market Share" from the "Volume and Market Share" drop down menu

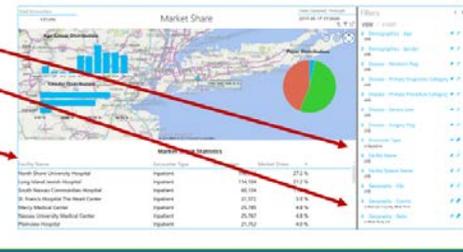


Again, we switch dashboards to the Market Share from the Volume and Market Share drop down menu.

Market Share Analysis: Inpatients

Instructions:

- Select "Inpatient" from the "Encounter Type" menu
- Select "New York" from the "Geography - State" filter, "Nassau" from the "Geography - County" filter
- Dashboard auto-populates
- Note the hospitals with the most market share
- Note the Top 5 hospitals in the list

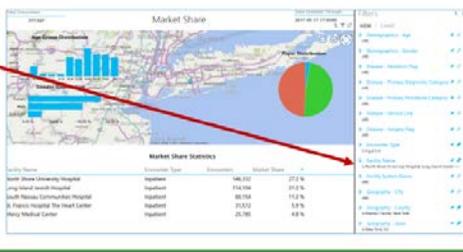


We select the filters from the Encounter Type Menu. Select New York from the Geography and Nassau from the County filter. The dashboard will automatically pre-populate listing the hospitals with greatest market share at the top.

Market Share Analysis: Inpatients

Instructions:

- Select the Top 5 facilities under the facility name or select any combination of sites.



You can choose to select the top 5 facilities under the facility name or select any combination of sites.