Population Health Management:

Social Determinants of Health – How Data Demonstrates Their Impact on the Health of a Population

Providence St. Joseph Health

Integrating Social Determinants of Health with Clinical Data

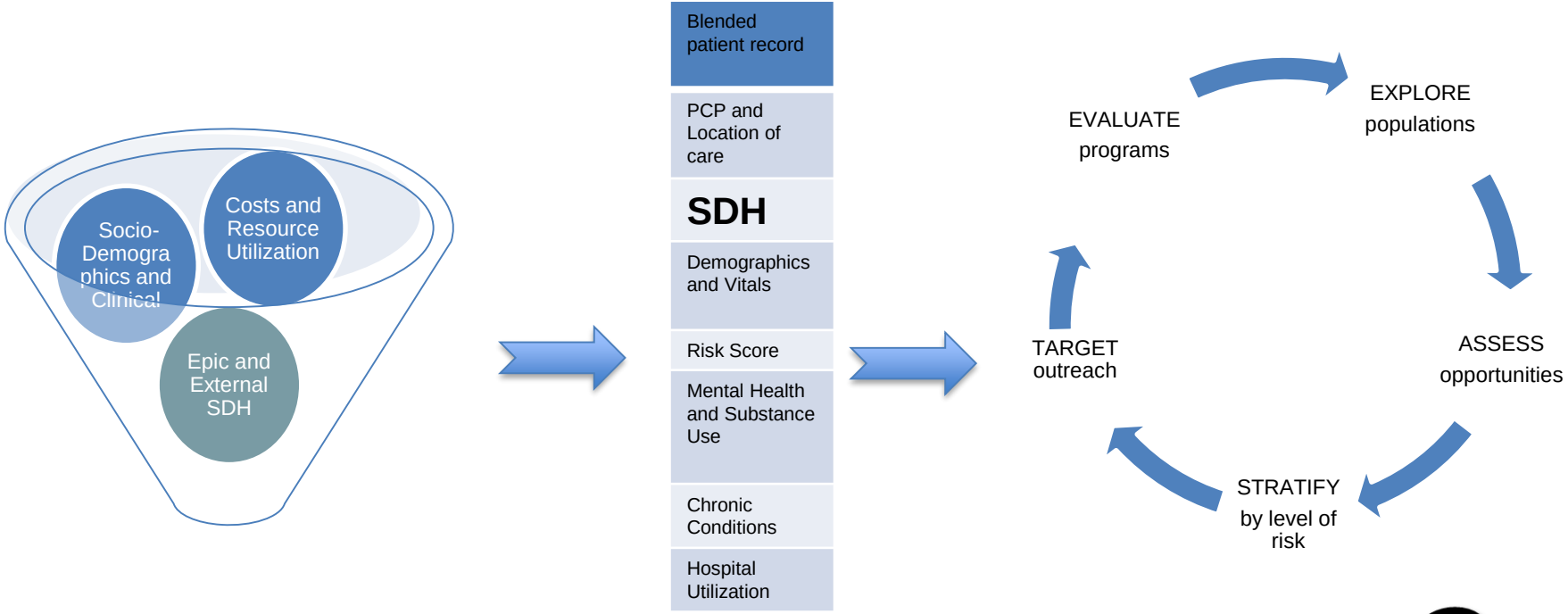
Providence Journey

Yelena Rozenfeld, MPH

Senior Data Scientist
Healthcare Intelligence
Providence St Joseph Health

HIMSS Oregon Chapter Annual Conference
Social Determinants of Health – How Data Demonstrates Their Impact on the Health of a Population
Panel Presentation
May 17, 2018

What is 360C?

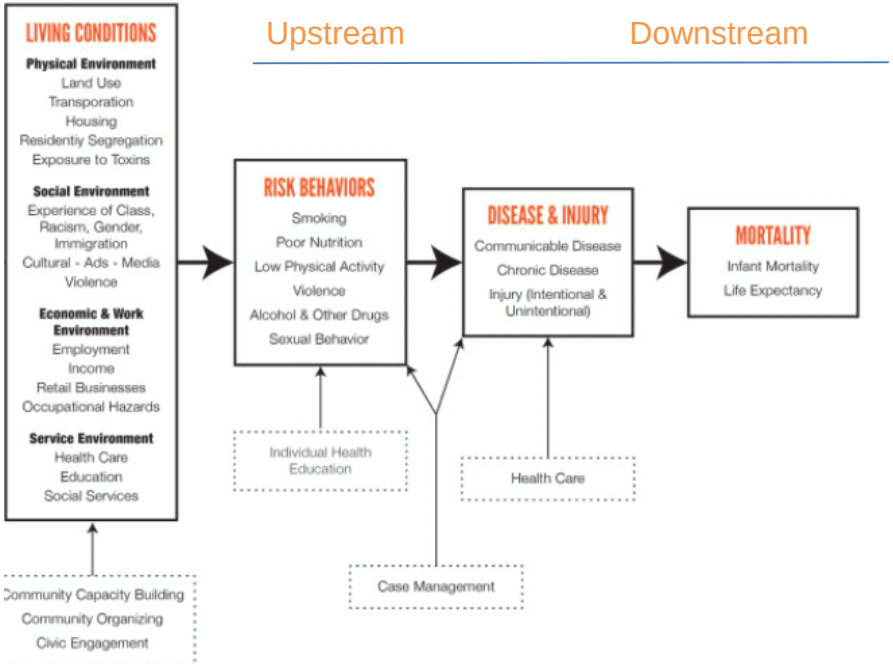


- Foundational project that integrates, transforms and augments data from multiple source systems into meaningful data sets
- Can be used by healthcare intelligence developers, data scientists, and our partners
- Provides a 360 degree view of patient populations across the continuum of care
- Solutions for deeper patient assessment, rigorous program development and evaluation, and new digital tools

Three-Sixty C

Providence St. Joseph Health

Where Does Health Start?



Source: BARHII.http://barhii.org/framework/

- According to the CDC, 70% of someone's health comes from socio-economic environment (e.g. family structure, location etc.).
  - Social and economic factors drive ~ 40% of consumer health and behavioral elements account for another 30%.
- Key elements that contribute to the sustained health of a patient often are not captured in EMR
  - Need to look for external data

National SDH Initiatives: IOM Recommended Domains

CAPTURING SOCIAL & BEHAVIORAL DOMAINS & MEASURES IN ELECTRONIC HEALTH RECORDS: PHASE 2

This document showcases the core domains and measures that constitute an efficient panel, which the committee recommends for inclusion in all electronic health records.

TABLE S-3 Core Domains and Measures

Domain	Measure
• Race/ethnicity	• U.S. Census (2 Q)
• Education	• Educational attainment (2 Q)
• Financial resource strain	• Overall financial resource strain (1 Q)
• Stress	• Elo et al. (2003) (1 Q)
• Depression	• PHQ-2 (2 Q)
• Physical activity	• Exercise Vital Sign (2 Q)
• Tobacco use and exposure	• NHIS (2 Q)
• Alcohol use	• AUDIT-C (3 Q)
• Social connections and social isolation	• NHANES III (4 Q)
• Exposure to violence: Intimate partner violence	• HARK (4 Q)
• Neighborhood and community compositional characteristics	• Residential address • Census tract-median income

NOTE: Q = question(s).

Social and Behavioral Domains and Measures.

Domain	Measure*	Frequency
Race or ethnic group†	1. What is your race? 2. Are you of Hispanic, Latino, or Spanish origin?	At entry
Education	1. What is the highest level of school you have completed? 2. What is the highest degree you earned?	At entry
Financial-resource strain	How hard is it for you to pay for the very basics like food, housing, medical care, and heat?	Screen and follow up
Stress	Stress means a situation in which a person feels tense, restless, nervous, or anxious, or is unable to sleep at night because his or her mind is troubled all the time. Do you feel this kind of stress these days?	Screen and follow up
Depression	Over the past 2 weeks, how often have you been bothered by 1. Little interest or pleasure in doing things? 2. Feeling down, depressed, or hopeless?	Screen and follow up
Physical activity	1. On average, how many days per week do you engage in moderate to strenuous exercise (like walking fast, running, jogging, dancing, swimming, biking, or other activities that cause a light or heavy sweat)? 2. On average, how many minutes do you engage in exercise at this level?	Screen and follow up
Tobacco use†	1. Have you smoked at least 100 cigarettes in your entire life? If yes: 2. Do you now smoke cigarettes every day, some days, or not at all?	Screen and follow up
Alcohol use†	1. How often do you have a drink containing alcohol? 2. How many standard drinks containing alcohol do you have on a typical day? 3. How often do you have six or more drinks on one occasion?	Screen and follow up
Social connection or isolation	1. In a typical week, how many times do you talk on the telephone with family, friends, or neighbors? 2. How often do you get together with friends or relatives? 3. How often do you attend church or religious services? 4. How often do you attend meetings of the clubs or organizations you belong to?	Screen and follow up
Intimate-partner violence	1. Within the last year, have you been humiliated or emotionally abused in other ways by your partner or ex-partner? 2. Within the last year, have you been afraid of your partner or ex-partner? 3. Within the last year, have you been raped or forced to have any kind of sexual activity by your partner or ex-partner? 4. Within the last year, have you been kicked, hit, slapped, or otherwise physically hurt by your partner or ex-partner?	Screen and follow up
Residential address†	What is your current address?	Verify at every visit
Census-tract median income	Geocoded	Update on address change

* Wording is taken from existing measures; standard response categories are available. Psychometric testing of the full panel, including ordering and wording, has not yet been conducted.
† This domain is already widely included in clinical practice.

Adler NE, Stead WW. N Engl J Med 2015;372:698-701.

Providence St.Joseph Health

Why Geocoding?

- Patient addresses are transformed into a geographic location by determining its latitude and longitude using BING technology via licensing
  - 87% of address were accurately geocoded
  - 13% had some postal information (e.g. PO Box) and were tied to the center of the Zip code
  - Less than 1% did not have an address to match
- R code reads shape files (“maptools” library) and transforms the latitude and longitude to block group and census tract ids

What SDH Data We Have That Describe Communities?

- Economic Stability: Income and poverty
  - Population receiving SNAP benefits
  - Population with housing assistance
  - Population in poverty*
  - Children under age 18 living in poverty*
  - Median household and per capita income
  - Gini Index Value
  - Cost burdened households (Over 30% of income)*
- Community and housing
  - Overcrowding
  - Units in substandard conditions
  - Median home value
  - Percentage of rented and vacant units
  - Average Years of living in the area
- Health Behaviors
  - % of food expense of fresh fruits and vegetables
  - % of food expense on soda
  - Walking or biking to work
  - % of food expense on beer, wine or liqueur
- Community Demographics
  - Population with a disability
  - Linguistically isolated population
  - Percent Urban and Rural
  - Population without high school diploma
- Transportation
  - Households without car
  - Population using public transportation
- Food Access
  - Population with low food access
  - Modified Retail Food Access
- Air Quality
  - Days exceeding standards

* Healthy People 2020 SDH measure

What EPIC's SDH Data Are Included?

- Demographics
  - Age
  - Gender
- Payer type (Commercial, Medicare, Medicaid, Uninsured)
- Race and ethnicity
- Primary Language
- Self-reported Employment
- Community and housing
  - Homelessness
- Social Isolation
  - Marital status as proxy for social support
- Behavioral and psychological factors
- Addiction and substance use (drugs, tobacco, alcohol)
- Depression
- Other mental health issues

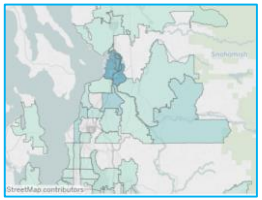
How Do We Use Information?

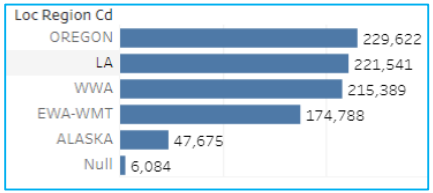
- Predictive modeling for risk stratification and identification of factors that are most predictive of resource utilization
- In analytics to gain insights quickly
- To drive patient cohort selection
- To help answering many care management questions and do business differently:
  - What could we do differently knowing that patients live in certain areas?
  - Do we have specific skills to address certain SDH?
  - Do we have resources or community partners to address certain needs and vulnerabilities

Population Profile

All region(s)
Medicaid Managed, Medicaid Traditional, Medicare Medicaid payer(s)
All ages

895,099
patients





Hospital/Clinic Groups

select a group to filter the dashbaord

Grand Total	895,099
PMG CLINICS OR REGION	97,982
PMG E WA CLINICS	85,939
PROV HOLY CROSS MEDICAL CENTER	70,198
PROV ST PETER HOSPITAL	50,171
SHS WWA CLINICS AND OTHER LOCATION	45,584
PROV ST JOSEPH MEDICAL CENTER	39,841
PROV AK MEDICAL CENTER	39,708

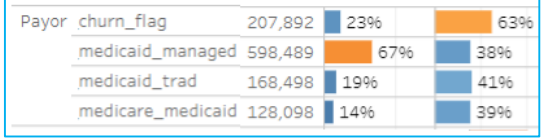
Patient Attributes

KPI Summary

Patient Count	% of Population	% with Hosp Case
895,085	100%	39%

Avg. Hosp Days	Avg. Hosp Charges	Avg. Dynamic KPI
1.2	$8,906	0.6

Which attibutes are more likely to be associated with higher utilization?



Patient Snapshot

Summary

Hospital Charges $178,265
Hospital Cases 79 / Days 82

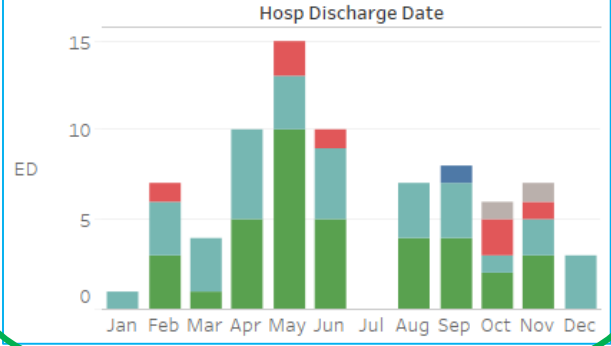
Hospitals caring for this patient

CHERRY HILL M..
SWEDISH EDM..
FIRST HILL CAM..
MILL CREEK
PROV REGIONA..

Services provided

Substance Abuse	42
Gastroenterology	22
Dermatology	3
Medical Ophthalmology	3

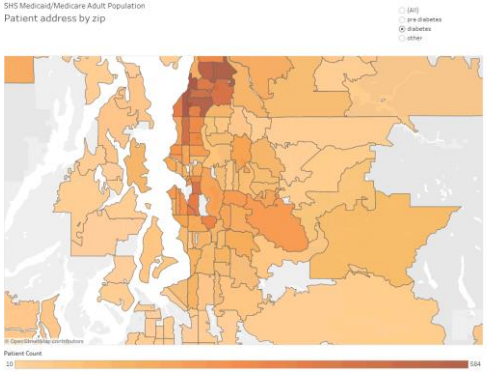
Hospital Cases by Month 2016

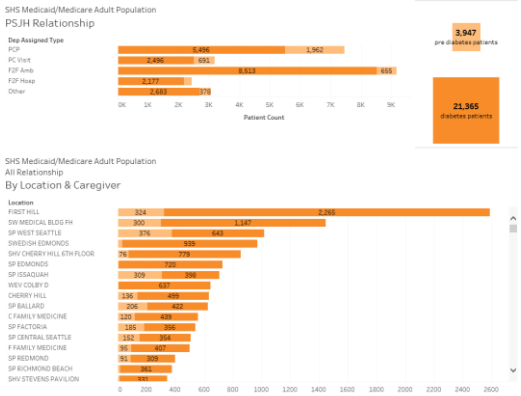


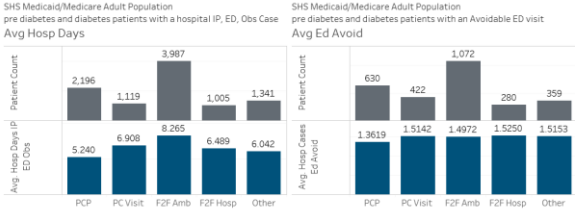
Mobile Health Diabetes Program

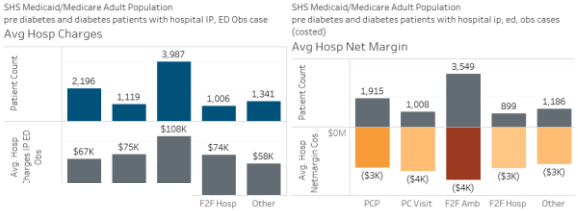
- Innovative nationally recognized project combining use of mobile app and cost efficient “health promoters” to improve care of patients with diabetes
- G2L-PSJH pilot aims to expand the initial project and demonstrate improved IHI’s Triple Aim health outcomes:
  - A1c reduction
  - Improvement in patient experience
  - Reduction in the per capital cost of care
    - Possible increased revenue with CMS recent additions for wellness and prevention coverage
- An IRB-approved quasi-experimental study design with propensity matched control group

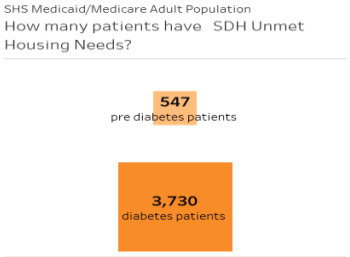
How SDH and other data are used in PSJH-G2L Study?

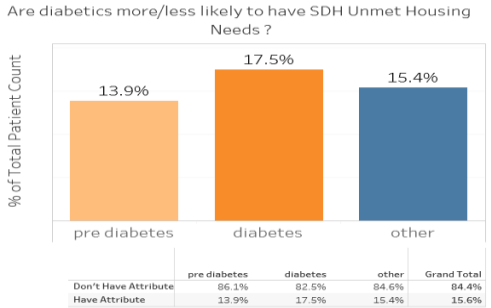












	pre diabetes	diabetes	other	Grand Total
Don't Have Attribute	86.1%	82.5%	84.6%	84.4%
Have Attribute	13.9%	17.5%	15.4%	15.6%

- Custom query and visual analytics were developed
  - Identify patient population for intervention
  - Identify patient's location of care and most populated zip codes
  - Identify most social, clinical and high resource utilization areas of focus

Providence St. Joseph Health

Going forward with the pilot…

- Operations
  - Information on SDH and other patient factors help us better address their needs and connect with needed community resources
  - Will help to connect patients with a medical home
- Performance Measurement
  - Report on engagement of study patients
  - Report on study progress
  - Evaluate the program impact by measuring clinical, satisfaction and financial outcomes

Unity Center for Behavioral Health

Juliana Wallace – Director of Services

CENTRAL CITY CONCERN

Risk Selector Tool

INTERACTIVE TOOL TO CREATE LISTS OF PATIENTS FOR PILOT INTERVENTIONS

MATTHEW MITCHELL
DATA STRATEGIST

Purpose

Match the right patients to the right intervention

Translate creative ideas into small pilots

- Right-size the pilot
- Identify clients on demand
- Self-service tool for leaders

CENTRAL CITY CONCERN

Providence St. Joseph Health

Tool Details

Data Sources

- EHR registration
- Problem list
- Appointment utilization
- PreManage
- ServicePoint
- HCC risk adjustment model
- Custom hospital risk prediction model
- Custom population segmentation model

Platform

- Microsoft Power BI
- Enterprise data warehouse

CENTRAL CITY CONCERN

CENTRAL CITY CONCERN

High Risk Patient Selector

5605

Patient Count

OTC Status: All

HMIS Program: All

Care Team: All

Housing Status: All

Risk Scores

HCC Risk Score: 0.00 – 5.01

Hospitalization Risk: 0.1 % – 56.0 %

Health Subgroup: All

Utilization (6 Months)

Inpatient Admits: 0 – 12

ED Admits: 0 – 118

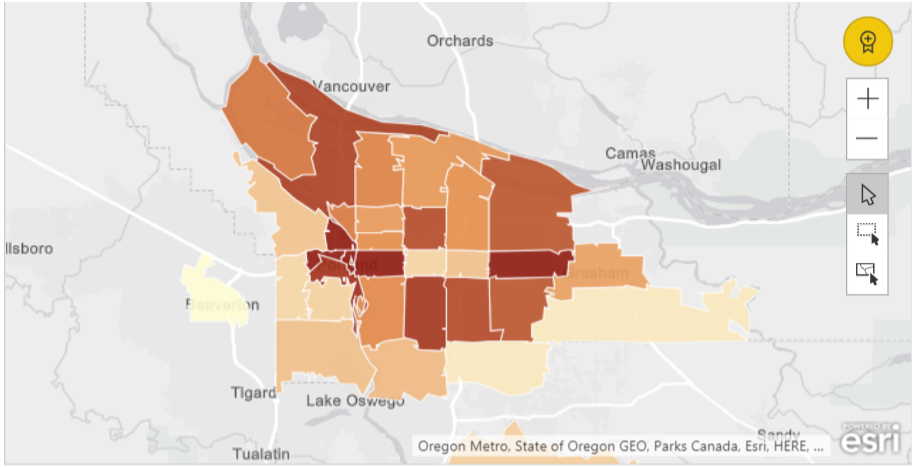
Completed PC Appts: 0 – 53

No Show PC Appts: 0 – 20

Selected Diagnoses

- [ ] Select All
- [ ] Alcohol Use
- [ ] Anxiety
- [ ] Bipolar Disorders
- [ ] Blood
- [ ] Cognitive Disorders/Head I...
- [ ] Depression
- [ ] Diabetes
- [ ] Heart
- [ ] Hypertension
- [ ] Infection
- [ ] Kidney
- [ ] Liver
- [ ] Lung
- [ ] Musculoskeletal
- [ ] Neurological
- [ ] Opioid Use
- [ ] Pain
- [ ] Schizophrenia and Psychosis

Patient Count by Zip Code



High Risk Outreach List

Client Name	Birth Date	PCP	Care Team	Hospitalization Risk
[redacted]	[redacted]	Gil MD, Richard	Summit	56.0 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	53.4 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	53.2 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	52.1 %
[redacted]	[redacted]	Sustersic MD, Brianna L	Fountains	45.7 %
[redacted]	[redacted]	Martin PA-C, Barbara E	Pioneers	45.3 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	45.2 %
[redacted]	[redacted]	Devoe MD, Meg	Summit	45.0 %
[redacted]	[redacted]	Smith MD, Elijah T	Columns	43.8 %
[redacted]	[redacted]	Gil MD, Richard	Summit	42.9 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	42.5 %
[redacted]	[redacted]	Gil MD, Richard	Summit	41.5 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	40.9 %
[redacted]	[redacted]	Gil MD, Richard	Summit	40.4 %

FILTERS

Risk Selector | Subgroup Explorer

CENTRAL CITY CONCERN

High Risk Patient Selector

5605

Patient Count

OTC Status: All

HMIS Program: All

Care Team: All

Housing Status: All

Risk Scores

HCC Risk Score: 0.00 – 5.01

Hospitalization Risk: 0.1 % – 56.0 %

Health Subgroup: All

Utilization (6 Months)

Inpatient Admits: 0 – 12

ED Admits: 0 – 118

Completed PC Appts: 0 – 53

No Show PC Appts: 0 – 20

Selected Diagnoses

- Select All
- Alcohol Use
- Anxiety
- Bipolar Disorders
- Blood
- Cognitive Disorders/Head I...
- Depression
- Diabetes
- Heart
- Hypertension
- Infection
- Kidney
- Liver
- Lung
- Musculoskeletal
- Neurological
- Opioid Use
- Pain
- Schizophrenia and Psychosis

Patient Count by Zip Code

High Risk Outreach List

Client Name	Birth Date	PCP	Care Team	Hospitalization Risk
[redacted]	[redacted]	Gil MD, Richard	Summit	56.0 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	53.4 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	53.2 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	52.1 %
[redacted]	[redacted]	Sustersic MD, Brianna L	Fountains	45.7 %
[redacted]	[redacted]	Martin PA-C, Barbara E	Pioneers	45.3 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	45.2 %
[redacted]	[redacted]	Devoe MD, Meg	Summit	45.0 %
[redacted]	[redacted]	Smith MD, Elijah T	Columns	43.8 %
[redacted]	[redacted]	Gil MD, Richard	Summit	42.9 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	42.5 %
[redacted]	[redacted]	Gil MD, Richard	Summit	41.5 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	40.9 %
[redacted]	[redacted]	Gil MD, Richard	Summit	40.4 %

FILTERS

Risk Selector | Subgroup Explorer

CENTRAL CITY CONCERN

High Risk Patient Selector

5605

Patient Count

OTC Status: All

HMIS Program: All

Care Team: All

Housing Status: All

Risk Scores

HCC Risk Score: 0.00 – 5.01

Hospitalization Risk: 0.1 % – 56.0 %

Health Subgroup: All

Utilization (6 Months)

Inpatient Admits: 0 – 12

ED Admits: 0 – 118

Completed PC Appts: 0 – 53

No Show PC Appts: 0 – 20

Selected Diagnoses

- [ ] Select All
- [ ] Alcohol Use
- [ ] Anxiety
- [ ] Bipolar Disorders
- [ ] Blood
- [ ] Cognitive Disorders/Head I...
- [ ] Depression
- [ ] Diabetes
- [ ] Heart
- [ ] Hypertension
- [ ] Infection
- [ ] Kidney
- [ ] Liver
- [ ] Lung
- [ ] Musculoskeletal
- [ ] Neurological
- [ ] Opioid Use
- [ ] Pain
- [ ] Schizophrenia and Psychosis

Patient Count by Zip Code

High Risk Outreach List

Client Name	Birth Date	PCP	Care Team	Hospitalization Risk
[redacted]	[redacted]	Gil MD, Richard	Summit	56.0 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	53.4 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	53.2 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	52.1 %
[redacted]	[redacted]	Sustersic MD, Brianna L	Fountains	45.7 %
[redacted]	[redacted]	Martin PA-C, Barbara E	Pioneers	45.3 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	45.2 %
[redacted]	[redacted]	Devoe MD, Meg	Summit	45.0 %
[redacted]	[redacted]	Smith MD, Elijah T	Columns	43.8 %
[redacted]	[redacted]	Gil MD, Richard	Summit	42.9 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	42.5 %
[redacted]	[redacted]	Gil MD, Richard	Summit	41.5 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	40.9 %
[redacted]	[redacted]	Gil MD, Richard	Summit	40.4 %

FILTERS

Risk Selector | Subgroup Explorer

CENTRAL CITY CONCERN

High Risk Patient Selector

5605

Patient Count

OTC Status: All

HMIS Program: All

Care Team: All

Housing Status: All

Risk Scores

HCC Risk Score: 0.00 – 5.01

Hospitalization Risk: 0.1 % – 56.0 %

Health Subgroup: All

Utilization (6 Months)

Inpatient Admits: 0 – 12

ED Admits: 0 – 118

Completed PC Appts: 0 – 53

No Show PC Appts: 0 – 20

Selected Diagnoses

- [ ] Select All
- [ ] Alcohol Use
- [ ] Anxiety
- [ ] Bipolar Disorders
- [ ] Blood
- [ ] Cognitive Disorders/Head I...
- [ ] Depression
- [ ] Diabetes
- [ ] Heart
- [ ] Hypertension
- [ ] Infection
- [ ] Kidney
- [ ] Liver
- [ ] Lung
- [ ] Musculoskeletal
- [ ] Neurological
- [ ] Opioid Use
- [ ] Pain
- [ ] Schizophrenia and Psychosis

Patient Count by Zip Code

High Risk Outreach List

Client Name	Birth Date	PCP	Care Team	Hospitalization Risk
[redacted]	[redacted]	Gil MD, Richard	Summit	56.0 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	53.4 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	53.2 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	52.1 %
[redacted]	[redacted]	Sustersic MD, Brianna L	Fountains	45.7 %
[redacted]	[redacted]	Martin PA-C, Barbara E	Pioneers	45.3 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	45.2 %
[redacted]	[redacted]	Devoe MD, Meg	Summit	45.0 %
[redacted]	[redacted]	Smith MD, Elijah T	Columns	43.8 %
[redacted]	[redacted]	Gil MD, Richard	Summit	42.9 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	42.5 %
[redacted]	[redacted]	Gil MD, Richard	Summit	41.5 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	40.9 %
[redacted]	[redacted]	Gil MD, Richard	Summit	40.4 %

FILTERS

Risk Selector | Subgroup Explorer

CENTRAL CITY CONCERN

High Risk Patient Selector

5605

Patient Count

OTC Status: All

HMIS Program: All

Care Team: All

Housing Status: All

Risk Scores

HCC Risk Score: 0.00 – 5.01

Hospitalization Risk: 0.1 % – 56.0 %

Health Subgroup: All

Utilization (6 Months)

Inpatient Admits: 0 – 12

ED Admits: 0 – 118

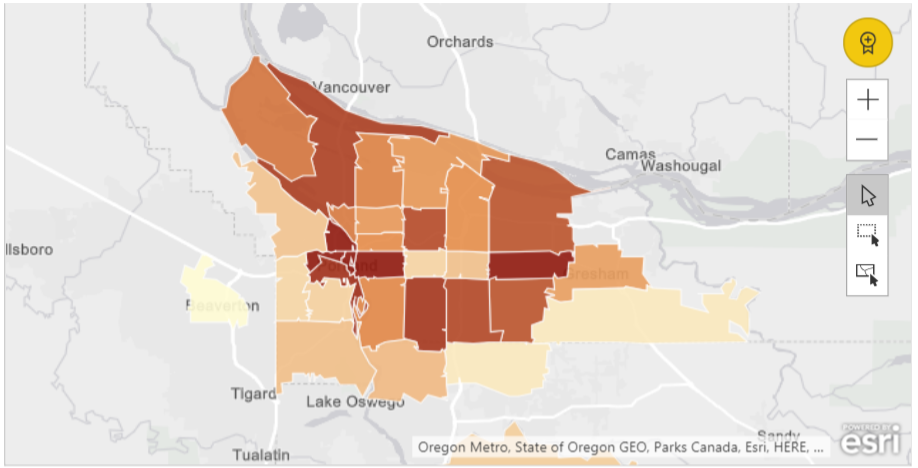
Completed PC Appts: 0 – 53

No Show PC Appts: 0 – 20

Selected Diagnoses

- [ ] Select All
- [ ] Alcohol Use
- [ ] Anxiety
- [ ] Bipolar Disorders
- [ ] Blood
- [ ] Cognitive Disorders/Head I...
- [ ] Depression
- [ ] Diabetes
- [ ] Heart
- [ ] Hypertension
- [ ] Infection
- [ ] Kidney
- [ ] Liver
- [ ] Lung
- [ ] Musculoskeletal
- [ ] Neurological
- [ ] Opioid Use
- [ ] Pain
- [ ] Schizophrenia and Psychosis

Patient Count by Zip Code



High Risk Outreach List

Client Name	Birth Date	PCP	Care Team	Hospitalization Risk
[redacted]	[redacted]	Gil MD, Richard	Summit	56.0 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	53.4 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	53.2 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	52.1 %
[redacted]	[redacted]	Sustersic MD, Brianna L	Fountains	45.7 %
[redacted]	[redacted]	Martin PA-C, Barbara E	Pioneers	45.3 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	45.2 %
[redacted]	[redacted]	Devoe MD, Meg	Summit	45.0 %
[redacted]	[redacted]	Smith MD, Elijah T	Columns	43.8 %
[redacted]	[redacted]	Gil MD, Richard	Summit	42.9 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	42.5 %
[redacted]	[redacted]	Gil MD, Richard	Summit	41.5 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	40.9 %
[redacted]	[redacted]	Gil MD, Richard	Summit	40.4 %

FILTERS

Risk Selector | Subgroup Explorer

CENTRAL CITY CONCERN

High Risk Patient Selector

37

Patient Count

OTC Status: All

HMIS Program: All

Care Team: All

Housing Status: (Multiple Selections)

Risk Scores

HCC Risk Score: 0.00 – 5.01

Hospitalization Risk: 0.1 % – 56.0 %

Health Subgroup: All

Utilization (6 Months)

Inpatient Admits: 0 – 12

ED Admits: 5 – 118

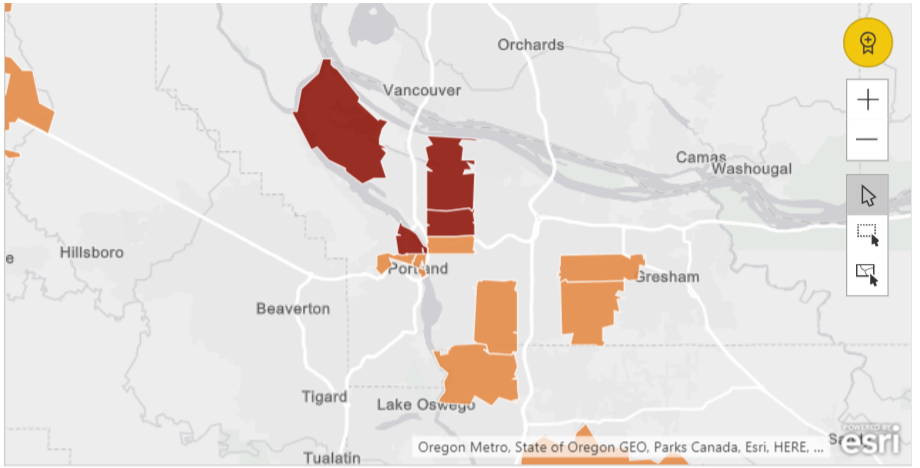
Completed PC Appts: 0 – 53

No Show PC Appts: 1 – 20

Selected Diagnoses

- [ ] Select All
- [ ] Alcohol Use
- [ ] Anxiety
- [ ] Bipolar Disorders
- [ ] Blood
- [ ] Cognitive Disorders/Head I...
- [ ] Depression
- [ ] Diabetes
- [ ] Heart
- [ ] Hypertension
- [ ] Infection
- [ ] Kidney
- [ ] Liver
- [ ] Lung
- [ ] Musculoskeletal
- [ ] Neurological
- [x] Opioid Use
- [x] Pain
- [ ] Schizophrenia and Psychosis

Patient Count by Zip Code



High Risk Outreach List

Client Name	Birth Date	PCP	Care Team	Hospitalization Risk
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	52.1 %
[redacted]	[redacted]	Gil MD, Richard	Summit	41.5 %
[redacted]	[redacted]	Southwell PA-C, Keva D	Columns	32.5 %
[redacted]	[redacted]	Sustersic MD, Brianna L	Fountains	31.3 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	27.1 %
[redacted]	[redacted]	Land FNP, Lauren M	Fountains	27.0 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	24.3 %
[redacted]	[redacted]	Lawrence MD, David	Fountains	22.3 %
[redacted]	[redacted]	Bajaj ND LAc, Kipp R	Bridges	21.7 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	21.2 %
[redacted]	[redacted]	Aaron ND, Nora L	Pioneers	20.5 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	19.7 %
[redacted]	[redacted]	Devoe MD, Meg	Columns	18.1 %
[redacted]	[redacted]	Rieke MD, Eowyn A	Columns	15.6 %

FILTERS

Risk Selector | Subgroup Explorer

High Risk Patient Selector

12

Patient Count

OTC Status: All

HMIS Program: (Multiple Selections)

Care Team: All

Housing Status: All

Risk Scores

HCC Risk Score: 0.00 – 5.01

Hospitalization Risk: 10.0 % – 56.0 %

Health Subgroup: All

Utilization (6 Months)

Inpatient Admits: 0 – 12

ED Admits: 0 – 118

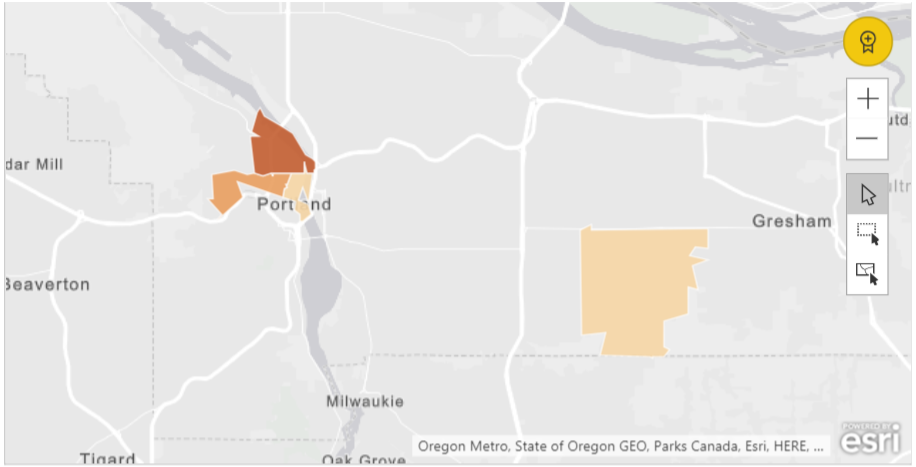
Completed PC Appts: 0 – 53

No Show PC Appts: 0 – 20

Selected Diagnoses

- [ ] Select All
- [ ] Alcohol Use
- [ ] Anxiety
- [ ] Bipolar Disorders
- [ ] Blood
- [ ] Cognitive Disorders/Head I...
- [ ] Depression
- [ ] Diabetes
- [ ] Heart
- [ ] Hypertension
- [ ] Infection
- [ ] Kidney
- [ ] Liver
- [x] Lung
- [ ] Musculoskeletal
- [ ] Neurological
- [ ] Opioid Use
- [ ] Pain
- [ ] Schizophrenia and Psychosis

Patient Count by Zip Code



High Risk Outreach List

Client Name	Birth Date	PCP	Care Team	Hospitalization Risk
[redacted]	[redacted]	Land FNP, Lauren M	Fountains	37.7 %
[redacted]	[redacted]	Herr, FNP, Jennifer N	Bridges	35.1 %
[redacted]	[redacted]	Southwell PA-C, Keva D	Columns	28.8 %
[redacted]	[redacted]	Devoe MD, Meg	Summit	28.3 %
[redacted]	[redacted]	Smith MD, Elijah T	Columns	18.6 %
[redacted]	[redacted]	Devoe MD, Meg	Columns	18.1 %
[redacted]	[redacted]	Seaman MD, Andrew	Pioneers	16.3 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	14.4 %
[redacted]	[redacted]	Smith PA-C, Megan B	Not Assigned	14.4 %
[redacted]	[redacted]	Land FNP, Lauren M	Fountains	12.9 %
[redacted]	[redacted]	Kohn AGNP, Mary Anne	Fountains	12.8 %
[redacted]	[redacted]	Rieke MD, Eowyn A	Columns	12.6 %

FILTERS

Risk Selector | Subgroup Explorer

Future Work

- Standard framework for evaluating impact of pilots
- Improve collection of housing status data
- Expand collection of SDoH data

Albertina Kerr Centers & SDOH

Oregon HIMSS
May, 17, 2018

Presented by: Craig Rusch – Chief Information Officer

EHR Selection

- In 2014, Kerr had 3 EHRs
- To provide seamless service, Kerr decided to consolidate all service lines in a single EHR
- The primary driver in selecting a new platform was to find a solution that would enable us to collaborate more deeply with our healthcare partners

Kerr Partners

Government Agencies

Oregon Department of Human Services

health share
Health Share of Oregon

Clients & Families

ALBERTINA KERR

Hospitals

LEGACY HEALTH

PROVIDENCE
Health & Services
Oregon and Southwest Washington

OHSU

KAISER PERMANENTE®

Private Payers

Regence
Oregon and Utah

moda

Data Exchange

PreManage

EDIE

Reliance
eHEALTH COLLABORATIVE

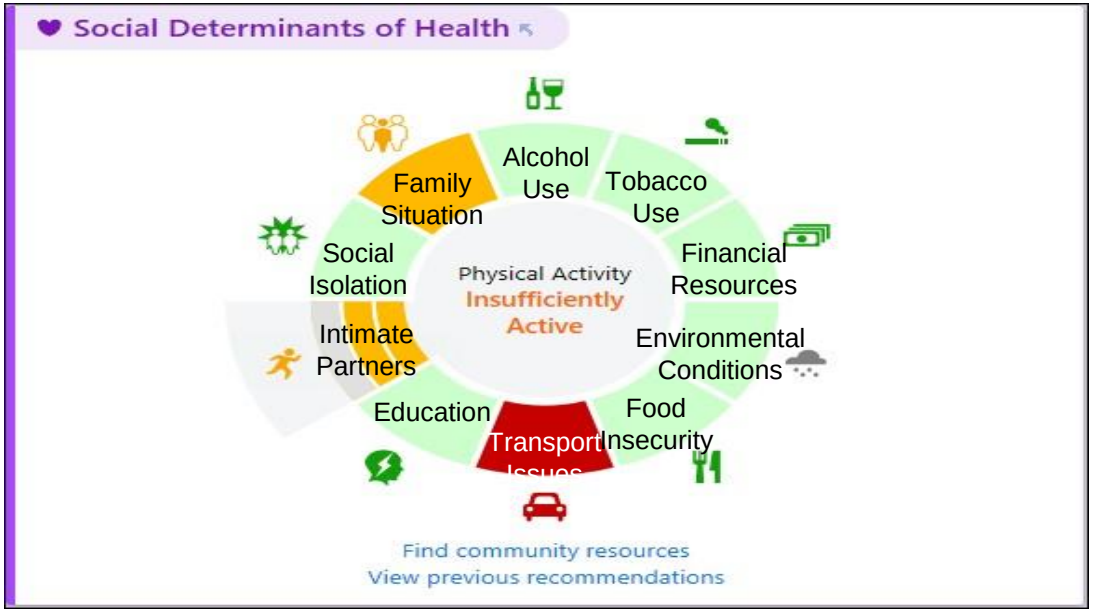
Providence St. Joseph Health

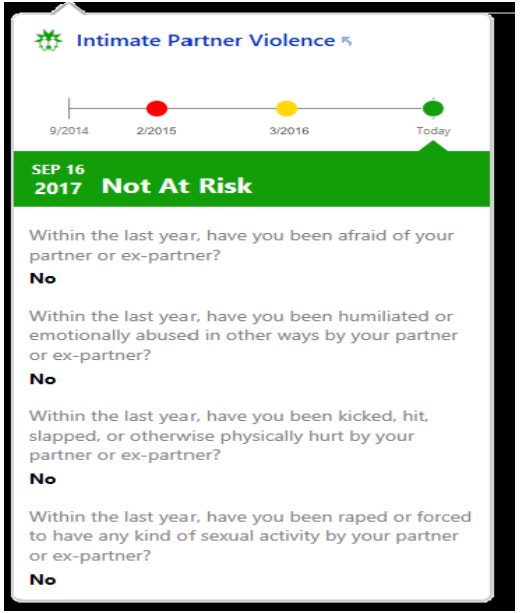
Epic & Legacy

- Epic, with Legacy as the host agency, was our clear choice
- Epic agreed to work with us and a few other community partners to help design Epic's Social Care module
- The first version of the Social Care module is available with Epic's 2018 release

Epic's 2018 Release

SDOH Documentation in Epic





Highlight SDOH in Medical Record

- Prior to the Social Care module, SDOH was hidden in flowsheets and notes, was hard to understand, difficult to find, and non-actionable
- With highly graphical, easy to understand pictograms, SDOH will be readily visible and actionable
- Once Kerr implements the Social Care module, we will be able to easily share in a meaningful way the data it has been collecting and hoarding for years

Population Health Management:

Social Determinants of Health –

Questions?