Addressing Health Disparities: Using Data to Close Gaps

HIIN Leadership, Improvement Advisors, and Hospitals Pacing Event

March 28, 2019
Welcome!

Who’s in the Room?

Bruce Spurlock, MD
Executive Director
Cynosure Health
National Content Developer
Overview

• Reducing Disparities Among Patients from Highly Deprived Areas through Rapid Cycle Improvement
  • Monique Millington, MPH, and Durward Rackleff, RN (NYSPfP HIIN)

• Premier HIIN’s Journey to Impacting Health Equity
  • Judy Brady, RN, BSN, MPA-HA, and Erika Klump (Premier HIIN)

• Person and Family Perspective
  • Lisa Morrise, MArts (Patient Advocate and PFE Contractor)

• Questions and Answers

• CMS Comments
Questions to Run On

• How is your HIIN or hospital using data-driven approaches to identify and address healthcare disparities?

• What types of tools and resources are available to assist your HIIN or hospital in this work?

• How can your HIIN or hospital apply or adapt the findings and lessons learned shared by today’s presenters in its health equity work?
Framing

• Opportunity for HIINs and hospitals to use data to drive the identification of gaps in health equity.

• HIINs’ data-driven efforts integrate resources such as the HIIN-developed Health Equity Organizational Assessment (HEOA) and the CMS Disparities Impact Statement (DIS). Additional information available as follows:
  – **February 28th Pacing Event**, “Identifying Opportunities and Achievements in Health Equity”
    • Slides and recording: [https://www.healthcarecommunities.org/ResourceCenter/PartnershipforPatientsLibrary?CategoryId=839738&EntryId=131478](https://www.healthcarecommunities.org/ResourceCenter/PartnershipforPatientsLibrary?CategoryId=839738&EntryId=131478)
  – **Health Equity Organizational Assessment**
    • “Health Equity Organizational Assessment (HEOA) Hospital Tutorial”
      – Recording, [here](https); slides, [here](https)
    • Current version of the HEOA (v15_Nov_2018) ([here](https))
Reducing Disparities Among Patients from Highly Deprived Areas through Rapid Cycle Improvement

Monique Millington & Durward Rackleff
Background

- Consideration of NYSPFP role as a HIIN with population-level focus
- Need to link outcome data with sociodemographic variables, but no access to patient-level data
- Desire for measurable improvements that can be realized within 6-month extension period
- Need to balance focus on high-volume hospitals
New Approach

- Ensure that vulnerable patients benefit equitably from population-level improvements in patient safety
  - Create hospital profiles by quantifying their share of a vulnerable patient population
  - Stratify HAC measures at the hospital level rather than at the patient level
  - Redirect project manager (PM) resources to those hospitals that are driving the disparities
DIS Step 1: Identify Vulnerable Populations
Objectives

- Identify hospitals that serve a larger proportion of at-risk populations based on sociodemographic factors.
- Create a hospital level measure of the proportion of patients from deprived areas.
- Determine if any relationship exists between the proportion of patients a hospital sees from deprived areas and NYSPFP outcomes.
## Data Sources

<table>
<thead>
<tr>
<th>Area Deprivation Index (ADI)</th>
<th>Statewide Planning and Research Cooperative System (SPARCS)</th>
<th>American Community Survey (ACS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Developed by HRSA as a measure of socioeconomic status disadvantage</td>
<td>• New York State claims data system containing information on patient characteristics and diagnoses</td>
<td>• Annual survey distributed by the US Census Bureau</td>
</tr>
<tr>
<td>• Comprised of 17 individual Census indicators</td>
<td>• 2016 data was used to obtain patient 5-digit zip codes for participating NYSPFP hospitals</td>
<td>• Population data from the survey was used to estimate the proportion of patients from high deprivation areas who were served by each participating NYSPFP hospital</td>
</tr>
</tbody>
</table>
Methods

- Population data from the 2016 American Community Survey was used to weight ADI proportions for each 9-digit zip code to assign a ranking to the 5-digit zip code.

<table>
<thead>
<tr>
<th>9-digit Zip Code</th>
<th>ADI Decile</th>
</tr>
</thead>
<tbody>
<tr>
<td>99999-9999</td>
<td>10</td>
</tr>
<tr>
<td>99999-9998</td>
<td>2</td>
</tr>
<tr>
<td>99999-9997</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9-digit Zip Code</th>
<th>ACS Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>99999-9999</td>
<td>10,000</td>
</tr>
<tr>
<td>99999-9998</td>
<td>15,000</td>
</tr>
<tr>
<td>99999-9997</td>
<td>5,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5-digit Zip Code</th>
<th>Revised ADI Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>99999</td>
<td>8.3</td>
</tr>
</tbody>
</table>
The revised ADI rankings were then assigned to patients based on SPARCS data used to estimate the proportion of high ADI patients served by each NYSPFP hospital.

<table>
<thead>
<tr>
<th>Patient</th>
<th>5-digit Zip Code</th>
<th>Revised ADI Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>99999</td>
<td>8.3</td>
</tr>
<tr>
<td>2</td>
<td>88888</td>
<td>4.5</td>
</tr>
<tr>
<td>3</td>
<td>77777</td>
<td>1.2</td>
</tr>
<tr>
<td>…</td>
<td>……</td>
<td>……</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADI Decile</th>
<th>Hospital X ADI Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5.6%</td>
</tr>
<tr>
<td>2</td>
<td>3.9%</td>
</tr>
<tr>
<td>3</td>
<td>4.7%</td>
</tr>
<tr>
<td>4</td>
<td>6.7%</td>
</tr>
<tr>
<td>5</td>
<td>8.5%</td>
</tr>
<tr>
<td>6</td>
<td>6.3%</td>
</tr>
<tr>
<td>7</td>
<td>3.3%</td>
</tr>
<tr>
<td>8</td>
<td>2.2%</td>
</tr>
<tr>
<td>9</td>
<td>9.9%</td>
</tr>
<tr>
<td>10</td>
<td>48.8%</td>
</tr>
</tbody>
</table>
Methods cont.

- Hospitals were broken into quintiles based on the proportion of patients estimated to be in the 10\textsuperscript{th} ADI decile

<table>
<thead>
<tr>
<th>Hospital Quintiles</th>
<th>Average % of Patients in 10\textsuperscript{th} Decile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest ADI – 1\textsuperscript{st} Quintile</td>
<td>0%</td>
</tr>
<tr>
<td>2\textsuperscript{nd} Quintile</td>
<td>1%</td>
</tr>
<tr>
<td>3\textsuperscript{rd} Quintile</td>
<td>5%</td>
</tr>
<tr>
<td>4\textsuperscript{th} Quintile</td>
<td>11%</td>
</tr>
<tr>
<td>Highest ADI – 5\textsuperscript{th} Quintile</td>
<td>30%</td>
</tr>
</tbody>
</table>

- The spearman correlation was calculated for NYSPFP outcome measures to evaluate statistically significant correlation with the ADI measure. Based on the outcome of the correlation the highest and lowest quintiles were compared.
- Hospitals in the 5\textsuperscript{th} quintile were then considered for RCIP based on their rates
## Disparities Identified

<table>
<thead>
<tr>
<th>Measures</th>
<th>Low-ADI Hospitals</th>
<th>High-ADI Hospitals</th>
<th>Disparity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Hour Sepsis Bundle Adherence</td>
<td>71%</td>
<td>62%</td>
<td>10%</td>
</tr>
<tr>
<td>CAUTI rate</td>
<td>0.6566</td>
<td>1.1510</td>
<td>0.4944</td>
</tr>
<tr>
<td>CLABSI rate</td>
<td>0.5529</td>
<td>1.1088</td>
<td>0.5559</td>
</tr>
<tr>
<td>Pressure injury (NQF0201)</td>
<td>0.9478</td>
<td>1.5657</td>
<td>0.6179</td>
</tr>
</tbody>
</table>
DIS Step 2: Set Smart Aims
DIS SMART Aims

- Goal: 50% reduction in disparities in the following conditions by March 2019
  - DIS 1: 3-hour sepsis bundle adherence
  - DIS 2: CAUTI rate
  - DIS 3: CLABSI rate
  - DIS 4: Pressure injuries
Step 3: Develop Action Plan
NYSPFP’s Rapid Cycle Improvement Program (RCIP)

- Three-four month intensive improvement project
- NYSPFP PMs facilitate one or more unit-based improvement teams
  - Project charter signed by senior leadership
  - Organizational assessments
  - Multiple team meetings and PDSAs
  - Process measure collection
  - Summary report prepared for senior leaders and key stakeholders
DIS Action Plans

Aim: Reduce Disparity by 50%

Primary Drivers
- Hospital Engagement
- Clinical Improvement

Secondary Drivers
- Leadership Support
- RCIP Activities
- Condition-Dependent Interventions
- Condition-Dependent Interventions
DIS Metrics

- Engagement Metrics
  - % of hospitals completing a rapid-cycle improvement project (RCIP) charter
  - % of hospitals completing a facility assessment
  - % of hospitals completing at least 3 improvement team meetings

- Clinical Improvement Metrics
  - Condition-specific outcome measures
    - CAUTI rate
    - CLABSI rate
    - Sepsis bundle adherence
    - Pressure injury rate
## Engagement Results

<table>
<thead>
<tr>
<th>Initiative</th>
<th># of hospitals recruited</th>
<th>% completed project charter</th>
<th>% held conference call with CDC</th>
<th>% completed facility assessment</th>
<th>% completed at least 1 team meeting</th>
<th>% completed at least 3 team meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Hour Sepsis Bundle Adherence</td>
<td>3</td>
<td>33%</td>
<td>N/A</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td>CAUTI rate</td>
<td>2</td>
<td>50%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>CLABSI rate</td>
<td>4</td>
<td>50%</td>
<td>75%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Pressure injury (NQF0201)</td>
<td>4</td>
<td>75%</td>
<td>N/A</td>
<td>75%</td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>
Progress Among DIS Hospitals

<table>
<thead>
<tr>
<th>Initiative</th>
<th># of Hospitals</th>
<th>Baseline Rate</th>
<th>Current Rate</th>
<th>Percent Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Hour Sepsis Bundle Adherence*</td>
<td>3</td>
<td>23%</td>
<td>28%</td>
<td>21%</td>
</tr>
<tr>
<td>CAUTI rate**</td>
<td>2</td>
<td>1.9933</td>
<td>0.7940</td>
<td>60%</td>
</tr>
<tr>
<td>CLABSI rate**</td>
<td>4</td>
<td>1.9080</td>
<td>0.8041</td>
<td>58%</td>
</tr>
<tr>
<td>Pressure injury* (NQF0201)</td>
<td>4</td>
<td>2.5250</td>
<td>3.3628</td>
<td>-33%</td>
</tr>
</tbody>
</table>

*Sepsis and pressure injury data available through 12/31/2018
**CAUTI and CLABSI data available through 1/31/2019
## State Progress Toward DIS Goals

**Goal:** Reduce disparity by 50% by March 2019

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Low-ADI Hospitals ((n))</th>
<th>High-ADI Hospitals ((n))</th>
<th>Disparity</th>
<th>Percent Change In Disparity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Hour Sepsis Bundle Adherence*</td>
<td>77% ((n=19))</td>
<td>67% ((n=28))</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>CAUTI rate**</td>
<td>0.6147 ((n=28))</td>
<td>1.0023 ((n=28))</td>
<td>0.3875</td>
<td>-22%</td>
</tr>
<tr>
<td>CLABSI rate**</td>
<td>0.4445 ((n=26))</td>
<td>0.9705 ((n=29))</td>
<td>0.5260</td>
<td>-5%</td>
</tr>
<tr>
<td>Pressure injury* (NQF0201)</td>
<td>0.8895 ((n=23))</td>
<td>1.8832 ((n=26))</td>
<td>0.9937</td>
<td>61%</td>
</tr>
</tbody>
</table>

*Sepsis and pressure injury data available through 12/31/2018

**CAUTI and CLABSI data available through 1/31/2019**
Lessons Learned & Next Steps

**Successes**
- Attributing ADI proportions to hospitals can be a proxy
- Hospital-level disparities are actionable for HIINs

**Lessons Learned**
- Each hospital has its own culture and rhythm
- Disparities are a moving target
- Pilot approach limits potential progress

**Next Steps**
- Conclude and evaluate current DIS projects
- Consider expanding pilot to new high-ADI hospitals
Premier HIIN’s Journey to Impacting Health Equity
Figure 1 The main determinants of health (Dahlgren and Whitehead, 1991)
The Geisinger Health System Success Story – Reducing Opioid Prescribing

Through a multifaceted approach:

- Combined Data Driven Assessments
- Continued Data Validation and Stratification
- Transparent Communications
- Ongoing Training
- Targeted Engagement of High Prescribers
- Focused on EHR-based Interventions
- Engaged Pharmacy Support in Care Management
- Consistent and Focused Care Transitions
- Developed Community Based Programs for Safe Medication Management and Disposal
The Rochester Regional Health Success Story – Reducing Disparities in Glycemic Control

Through a multifaceted approach:

- Data Collection, Validation and Stratification
- Diabetic and Disparity Data Driven Plan of Action & Intervention
- Data Driven Needs Assessment/Gap Analysis for Program Development
- High Reliability for Program Design and Management
- S.M.A.R.T. Goals for Impacting Performance
- Engage a Multidisciplinary Team to Impact Outcomes
- Operationalized “How To” Embed Clinical Diabetic Educators (CDE) in Urban, Underserved and Homeless Populations
- Developed Community Based Programs for HBA1C Kit Distribution, CDE Intervention and Follow-up and Medication/Diet Education and Management
Future plans are to move forward with such things as defining and measuring specific social determinants such as:

- Economics/Employment, Environment
- Transportation
- Education
- Food Insecurities
- Community and Health Care Availability/Accessibility
- Cultural Competency, arriving at more in-depth and appropriate definitions of ethnicity and race (for example, what defines Hispanic? Latino, Cuban, etc.)
- Inclusion of Sexual Orientation/Gender Identification (SO-GI) data
Premier is committed to supporting hospitals in collecting, validating, and stratifying data and communicating findings & opportunities to achieve Health Equity through the utilization of the following tools:

- Complete Health Equity Gap Assessment – assess for processes/workflows in place
- Utilize Disparity Impact Statement as a “Data Stratification Plan” to drive action plans
- Identify/resolve gaps in patient care, outcomes and trends
- Utilize HIIN Health Equity Affinity Group Health Equity Assessment Categories for definition to achieve each category at basic, intermediate and advanced level of compliance
- Complete Community Needs Assessment – capture health inequities specific to the populations served to determine vulnerable populations and needs
- Utilize Premier HIIN Health Equity Dashboard Report for data stratification by harm topic within HIIN cohort and individual facilities
Deliverable 1: Aggregate level dashboards

Need: Stratifying and observing outcomes
Approach: Utilize patient and facility data elements and HIIN measures
Users: All HIIN facilities

Deliverable 2: Facility-specific reports

Need: Facility-level target areas
Approach: Data analysis using HIIN benchmarks
Users: Facilities with QualityAdvisor; negative outcomes
Deliverable 1: Aggregate level dashboards
Need: Stratifying and observing outcomes
Approach: Utilize patient and facility data elements and HIIN measures
Users: All HIIN facilities

Deliverable 2: Facility-specific reports
Need: Facility-level target areas
Approach: Data analysis using HIIN benchmarks
Users: Facilities with QualityAdvisor; negative outcomes
About 75% HIIN facilities with patient-level data

Adverse event areas:
- HAPI
- Sepsis
- Unplanned readmissions
- Insulin-related ADE

Opioid Utilization
- Days of opioid therapy
- Average daily dose
- High daily dose
Measure: PFP-PU-2b
Aggregate Rate: 0.50

Critical Access Hospital
- No
- Yes

Bed Size
- < 100
- 100 - 299
- 300 and larger

Race
- AMERICAN INDIAN
- ASIAN/PACIFIC ISLANDER
- BLACK
- OTHER/UNKNOWN
- WHITE

Discharge Year
- Rate vs Year

Race
- All Race

Point of Origin
- Nonhealthcare Facility Point of origin

Patient Location
- Area Type
  - Super Rural
  - Rural
  - Urban

Payer Type
- Payer
  - Medicaid
  - Medicare
  - Other
  - Private
  - Uninsured

Poverty Level
- Area Poverty Levels
  - Rate vs Poverty Level

Distance to Facility (Miles)
- Distance vs Rate
Measure: PFP-PU-2b

Aggregate Rate: 0.50

Facility Factors

Patient Factors

race

Point of Origin

Patient Location

Payer Type

Poverty Level

Distance to Facility (Miles)
Example: Insulin-related ADE

Drill down: **Point of Origin = Transfer from a hospital**
Example: Insulin-related ADE

Drill down: Point of Origin = Transfer from a hospital

Disparity increases:
- Race
- Facility regions (not shown)

Denominator proportion increases:
- Distance to facility

Disparity increases:
- Race
- Facility regions (not shown)

Denominator proportion increases:
- Distance to facility
Example: Pressure Injuries

Drill down: Race = Black

Measure: PFP-PU-2b

Aggregate Rate: 0.50

Race

Point of Origin

Patient Location

Payer Type

Poverty Level

Distance to Facility (Miles)
Example: Pressure Injuries

Darker bar shading = Larger denominator

Drill down: Race = Black & Poverty level = 20-30%

Gap increases:
- Rural patients
- High poverty level areas
- Distance to facility (not shown)
Example: Pressure Injuries

Drill down: Race = Black & Poverty level = 20-30%

Gap increases:
- Transfer from SNF
- Distance to facility
HIIN-Level Data Focus

**Deliverable 1: Aggregate level dashboards**

Need: Stratifying and observing outcomes
Approach: Utilize patient and facility data elements and HIIN measures
Users: All HIIN facilities

**Deliverable 2: Facility-specific reports**

Need: Facility-level target areas
Approach: Data analysis using HIIN benchmarks
Users: Facilities with QualityAdvisor; negative outcomes
Deeper Dive: Disparities Magnitude

Facility disparity magnitude vs HIIN disparity magnitude

Example: Pressure injury rate difference between black race and white race at Facility A versus HIIN
Facility focus population rate vs HIIN peer focus population rate

Example: Pressure injury rates for black population at Facility A versus black population at peer facilities.
Lessons Learned

- Aggregating and stratifying the macro-level data allows us to focus health equity efforts
- The HIIN demonstrated the value in the HEOA data categories
- It is important to include peer groups to compare and benchmark
- Data analysis on facility data will help create actionable smart goals (DIS)
Person & Family Perspective

Lisa Morrise, MArts
Patient Advocate
Consumers Advancing Patient Safety
HIIN PFEC
Questions to Run On

• How is your HIIN or hospital using data-driven approaches to identify and address healthcare disparities?

• What types of tools and resources are available to assist your HIIN or hospital in this work?

• How can your HIIN or hospital apply or adapt the findings and lessons learned shared by today’s presenters in its health equity work?
Please share your questions for our presenters!

To share a question, you may enter it into the chat box or press 7# on your telephone keypad to have your line unmuted.
Key Takeaways

• HIINs have an opportunity to impact health equity with their partner hospitals. This includes collecting and analyzing cross-hospital data to identify disparities, and then reducing burden to hospitals by helping to design and implement interventions to address those disparities.

• A key to success is collecting and stratifying data at both the population and patient levels, and then conducting deep dives into specific variables to explore differences and develop action plans.

• Hospitals require targeted interventions to address their specific needs. However, findings and lesson learned from these efforts can be shared and leveraged for other hospitals engaging in this work.

• Use available resources to guide your work, such as:
  – The HIIN-developed Health Equity Organizational Assessment
    • “Health Equity Organizational Assessment (HEOA) Hospital Tutorial”
      – Recording, [here](#); slides, [here](#)
    • Current version of the HEOA (v15_Nov_2018) ([here](#))
Participant Polling

Please share your feedback!
Upcoming Events

NCD Weekly Pacing Event
Thursday, April 4, 1:00 – 2:00 PM ET
Topic: Antibiotic Stewardship

PFE Monthly Learning Event
Thursday, April 11, 1:00 – 2:00 PM ET
“The Impact of Patient and Family Advisor Rounding on Hospital Quality and Safety”

NCD Weekly Pacing Event
Thursday, April 18, 1:00 – 2:00 PM ET
Topic: Care Transitions