NYC RING Workshop

Addressing Social Determinants to Improve Health Outcomes: Strategies to Achieve Rapid Results

Tuesday, October 18, 2016
Cherkasky Auditorium
NYCRING Workshop
Tuesday, October 18, 2016

Title: Addressing Social Determinants to Improve Health Outcomes: Strategies to Achieve Rapid Results

Time: 2:00-4:30 pm
Location: Montefiore Medical Center – Moses Campus - Cherkasky Auditorium

Purpose: To engage health delivery system, community and public health partners in discussion of ongoing efforts to address social determinants of health and build skills for effective partnerships that can achieve rapid and sustainable results. We will use current efforts around asthma as a case example.

Workshop Outline

As people enter they will be given a number 1-6 and told to sit where their number is displayed.

1. Introduction of Lloyd Michener
   Ice Breaker - Go around the room to find out who is in the room

2. Lloyd — Opening presentation — What happens when you address SDH

3. Amanda Parsons — setting the stage for the Bronx — describe the scope of the efforts underway in relationship to addressing asthma

4. Damara Gutnick— setting the stage for Hudson Valley - describe the data-driven approach MHVC is taking to dealing with asthma

5. Short 5-7 minute presentations:
   a) Marina Reznik - describe the vision behind the Build Challenge grant and why it is a great way to tackle asthma
   b) Sandra Lobo - describe NERCC builds and leverage coalitions of community members to drive change
   c) Abe Fernandez — South Bronx Rising Together — community organizing and asthma intercept
   d) Colin Rehns- present the analysis done for the Build Challenge, identifying key buildings for intervention
   e) Shoshanah Brown - describe how air nyc partners with various players to conduct home-based interventions
   f) Damara Gollease - asthma educator app and where it fits in the care pathway

6. Lloyd — introduction of group discussion format and review of the Practical Playbook

7. Flash breakouts:
   a. First question: In the group, who would you like to reach out to and learn more from
   b. Second question: Who’s missing, who else would we like to hear from, how do we recruit them
   c. Third question: How do we achieve systems alignment, what strategies can we use, what would create efficiency, accountability

8. Lloyd — summary and distillation — suggested next steps

9. Audience response for evaluation
Observation From the Field: Health Improvement is a Process

Environmental, Social, and Political Context

Integration Continuum

Celebrate and Share
Organize and Prepare
Plan and Prioritize
Implement
Monitor and Evaluate

Common Barriers: culture/language
Common Facilitators: “bridge” organizations
Ideally, the process begins with data:

Hypertension in Durham

Note: density plots depict ACTUAL patients and respective blood pressures in Durham County

Source: DSR data from 1/1/06-5/1/09; patients seen at DUHS
The intervention is targeted:

**Just For Us**

- 350 patients
- Average age 70, multiple chronic conditions
- 44% have mental illness
- All are home-bound
- 84% African-American; many with low to no family support
- Low literacy or illiterate

**Community Partners**
- City of Durham, Housing Authority
- Lincoln Community Health Center
- Durham Council on Seniors
- Area Mental Health Agency
- Durham County Health Department
- Durham County Department of Social Services

**Practice Partners**
- Duke CFM, SON, DUH, DRH, Center for Aging, Department of Psychiatry

**Annual Income**

\[ \text{Annual Income} = \text{Rent} - \text{Annual Income} - 25\% \text{ Rent} = 5,250 \text{ /Year} \]
Outcomes are tracked:

Just For Us

Outcomes

- Ambulance costs ↓ 49%
- ER costs ↓ 41%
- Inpatient costs ↓ 68%
- Prescription costs ↑ 25%
- Home health costs ↑ 52%

All patients with hypertension 79% ≤ 140/90
Diabetics with hypertension 84% ≤ 140/90
Partnerships are Developed:

Durham County Connections Across Partnerships

1) Blue squares represent partnerships
2) Red circles represent organizations
3) The closer partnerships are located together on the map – the more members they share in common
4) The farther partnerships are from each other – the less of a connection they have through shared members
5) Organizations in the center of the map bridge across multiple partnerships

healthydurham.org
Programs are scaled up and disseminated

Percent Difference Between Medicaid Recipients Enrolled in CCNC and Those Not Enrolled in CCNC, for Rates of Asthma-Related Emergency Department Visits and Inpatient Admissions, 2008–2012

Note. CCNC, Community Care of North Carolina. NCMJ September/October 2013, Volume 74, Number 5
Inpatient Admission Trends among NC Medicaid Beneficiaries with Multiple Chronic Conditions, 2008-FY2014

Programs are scaled up and disseminated
Comparison of Actual Claims Trends

**Trends in Actual NC Medicaid PMPM Spending**

- NC Medicaid enrollment transitioning to higher proportion of non-Aged, Blind, Disabled populations than US trends
- North Carolina appears to have been more aggressive/effective than other States implementing initiatives to control spending beginning in FY 2008-09
  
  Variations in enrollment mix make a sole national comparison misleading

**NC Actual Claims PMPM’s adjusted to remove the impact of changes in DSH accounting and Hospital GAP and UNC/ECU UPL plans**

**Trended on US Medicaid PMPM trends applied to NC 2003 Base PMPM**

Source: CMS Office of the Actuary and NC Office of State Controller
The Children’s Community Asthma Initiative (CAI)
Boston’s Children’s Hospital

- Care coordination by bilingual and bicultural nurses and Community Health Workers (CHWs)
- Establishing family’s goals for asthma control
- Identification of barriers to good control
- Environmental assessment/remediation
- Housing advocacy/inspectional services:
  - Referrals:
    - Community medical-legal partnership, child care, and other resources

Outcomes:
Decrease in % patients with any ED Visits or Admissions due to Asthma N=1470
(through March 31, 2015)

NYC Ring Workshop

Using Data to Target Community Based Asthma Interventions in the Hudson Valley

Damara Gutnick, MD
Medical Director, MHVC
Asthma
Hudson Valley Community Needs Assessment

• Clusters of elevated risk for asthma around:
  – Middletown,
  – Newburgh,
  – Poughkeepsie,
  – Haverstraw and
  – Southern Westchester

• Large numbers of hospitalizations & ED visits in children for asthma and COPD
Map of MHVC members with Asthma and who had one or more ED Visits

<table>
<thead>
<tr>
<th>City</th>
<th>Count of Members with Asthma claims and one or more ED visits</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yonkers</td>
<td>2,228</td>
<td>22%</td>
</tr>
<tr>
<td>Poughkeepsie</td>
<td>704</td>
<td>7%</td>
</tr>
<tr>
<td>Newburgh</td>
<td>621</td>
<td>6%</td>
</tr>
<tr>
<td>Mount Vernon</td>
<td>559</td>
<td>6%</td>
</tr>
<tr>
<td>New Rochelle</td>
<td>462</td>
<td>5%</td>
</tr>
<tr>
<td>Peekskill</td>
<td>383</td>
<td>4%</td>
</tr>
<tr>
<td>White Plains</td>
<td>324</td>
<td>3%</td>
</tr>
<tr>
<td>Bronx</td>
<td>302</td>
<td>3%</td>
</tr>
<tr>
<td>Middletown</td>
<td>267</td>
<td>3%</td>
</tr>
<tr>
<td>Monticello</td>
<td>205</td>
<td>2%</td>
</tr>
<tr>
<td>Spring Valley</td>
<td>203</td>
<td>2%</td>
</tr>
<tr>
<td>Haverstraw</td>
<td>148</td>
<td>1%</td>
</tr>
<tr>
<td>Beacon</td>
<td>133</td>
<td>1%</td>
</tr>
<tr>
<td>Liberty</td>
<td>125</td>
<td>1%</td>
</tr>
<tr>
<td>New Windsor</td>
<td>112</td>
<td>1%</td>
</tr>
<tr>
<td>All Other</td>
<td>3,254</td>
<td>32%</td>
</tr>
<tr>
<td>Total</td>
<td>10,030</td>
<td>100%</td>
</tr>
</tbody>
</table>
Map of MHVC members with Asthma Dx - Yonkers

13% of MHVC Members diagnosed with Asthma live in zip code 10701
MHVC Member with Asthma DX and Utilization – Yonkers

<table>
<thead>
<tr>
<th>Zip</th>
<th>Unique recipients with Asthma Dx</th>
<th>V ER Visits</th>
<th>Unique Recipients w ER Visits</th>
<th>V Inpatient Admissions</th>
<th>Unique Recipients w Inpatient Admissions</th>
<th>3 or more ED visits</th>
<th>Unique Recipients w 3 or More ED visits</th>
<th>% of High ED Utilizer by zip code</th>
<th>2 or more IP admissions</th>
<th>Unique Recipients w 2 or More IP Admissions</th>
<th>% of High IP Utilizer by zip code</th>
</tr>
</thead>
<tbody>
<tr>
<td>10701</td>
<td>1,262</td>
<td>2,941</td>
<td>845</td>
<td>629</td>
<td>329</td>
<td>363</td>
<td>29%</td>
<td>141</td>
<td>612</td>
<td>593</td>
<td>26%</td>
</tr>
<tr>
<td>10705</td>
<td>590</td>
<td>1,164</td>
<td>370</td>
<td>274</td>
<td>133</td>
<td>145</td>
<td>25%</td>
<td>141</td>
<td>66</td>
<td>66</td>
<td>11%</td>
</tr>
<tr>
<td>10703</td>
<td>242</td>
<td>543</td>
<td>147</td>
<td>135</td>
<td>73</td>
<td>52</td>
<td>21%</td>
<td>31</td>
<td>13</td>
<td>31</td>
<td>13%</td>
</tr>
<tr>
<td>10704</td>
<td>80</td>
<td>92</td>
<td>40</td>
<td>39</td>
<td>21</td>
<td>13</td>
<td>16%</td>
<td>12</td>
<td>15</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td>10710</td>
<td>55</td>
<td>69</td>
<td>28</td>
<td>39</td>
<td>20</td>
<td>9</td>
<td>16%</td>
<td>6</td>
<td>11</td>
<td>6</td>
<td>11%</td>
</tr>
<tr>
<td>10702</td>
<td>19</td>
<td>71</td>
<td>15</td>
<td>10</td>
<td>6</td>
<td>11</td>
<td>58%</td>
<td>3</td>
<td>16</td>
<td>3</td>
<td>16%</td>
</tr>
<tr>
<td>Totals</td>
<td>2,248</td>
<td>4,880</td>
<td>1,445</td>
<td>1,126</td>
<td>582</td>
<td>593</td>
<td>26%</td>
<td>259</td>
<td>12</td>
<td>259</td>
<td>12%</td>
</tr>
</tbody>
</table>

Takeaways:
1. In Yonkers, Zip code 10701 has the most patients with diagnosis of Asthma. (1,262 pts) and the largest number of patients with asthma who had 2 or more IP admissions (141 pts, 11%)
2. The highest percentage of patients with asthma who had 3+ ED visits reside in zip codes 10701 and 10702
3. Zip code 10702 has the highest % of patients with asthma who have had 2 or more IP admissions. (3 patients, 16%),

Next Steps:
1. Geomap patients with multiple admissions and ED visits to their home addresses
2. Identify natural clusters of unengaged, high utilizers for focused community based interventions
3. Work with partners and CBO to understand care gaps (environmental factors, resource needs, SDH) and design focused interventions
BUILD Health Challenge Grant
“Bronx Healthy Buildings Program”

Marina Reznik, MD, MS
BUILD Health Challenge Grant

• In the US, 70% of health outcomes attributed to influence of social, physical and economic environments on health behavior

• Social determinants of health: employment opportunities, food insecurity, air and water quality, transportation, education, public safety, and housing

• Health care providers cannot fix these problems alone

• Achieving better community health requires re-orientation of how leaders in health care, public health and community work together

• RWJF, The Advisory Board Company, the de Beaumont Foundation, The Kresge Foundation launched a $7.5M initiative

• BUILD is a national award program focused on promoting collaborative approaches to community health
Bronx Healthy Buildings Program

• A cross-sector initiative to promote holistic community health by addressing the upstream causes of asthma-related emergency room visits and hospitalizations in the Bronx.

• Partners:
  – Northwest Bronx Community and Clergy Coalition
  – Montefiore Medical Center
  – NYC Department of Health and Mental Hygiene
  – Bronx Cooperative Development Initiative
  – Emerald Cities New York
  – BlocPower
  – MIT Community Innovators Lab
  – New York Lawyers for the Public Interest
Why asthma?

• 20-25% of school-age Bronx children have asthma
• Bronx asthma hospitalization rates in children are 2x the NYC rate and 4x the US rate
• >80% of Bronx residents are renters unable to address housing conditions – mold/pests
• Tenants fearful of eviction if report unhealthy conditions
• Landlords have little financial incentive to invest in building upgrades
• Healthcare is interested in keeping patients out of hospitals
Bronx Healthy Buildings Program

- **Goals and Activities:**
  - Reduce exposure to asthma triggers in apartment buildings through environmental assessment, education about asthma self-management (CHW), and remediation
  - Reduce greenhouse gas emissions and other pollutants that results from burning fossil fuels
  - Lower residents’ monthly energy bills by performing energy and water conservation upgrades alongside the health-related remediation efforts
  - Help residents build community power and leadership through tenant organizing and training about the social determinants of health
  - Create jobs and wealth in the community by contracting with Bronx-based construction firms and holding contractors to high-road community workforce standards and ecologically sustainable practices

- **Progress to date:**
  - 4 buildings enrolled in a pilot study
  - Leveraging Weatherization Assistance Program funding to retrofit buildings
  - Working with tenants and landlords to identify needed improvements
  - Survey for pre/post evaluation assess outcomes (asthma self-management skills, symptom days, missed school/work days and other health behavior outcomes)
South Bronx Rising Together

Vision: The South Bronx is a vibrant community of infinite opportunity where people aspire to live, work and raise families.

Strategy: We will create a South Bronx community that is college and career ready by leveraging the expertise of networks of families, educators, business leaders, community advocates and service providers to support the lifelong success of our children and youth.

- All are healthy
- All enter kindergarten ready to succeed
- All succeed in school
- All stakeholders contribute positively to the community
- All graduate high school ready for college & career
- All attain a degree or post-secondary credential
- All begin a career
**ASTHMA EMERGENCY DEPARTMENT VISITS 2014**
(Per 1,000)

- **SBRT Zone**: 58.1
- **Bronx**: 68.8
- **NYC**: 32.0

**ASTHMA HOSPITALIZATIONS 2014**
(Per 1,000)

- **SBRT Zone**: 8.2
- **Bronx**: 14.4
- **NYC**: 6.9

*SBRT Zone is United Hospital Fund (UHF) 42, which is a broad region that includes the Morrisania and Highbridge neighborhoods; data specific to Community District 3 are not available.*

Source: NYC Environment & Health Data Portal
Chronic Absence in CD3

3-YEAR TREND IN CHRONIC ABSENCE IN CD 3

<table>
<thead>
<tr>
<th>Year Range</th>
<th>% Chronically Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 - 2013</td>
<td>33.7</td>
</tr>
<tr>
<td>2013 - 2014</td>
<td>37.9</td>
</tr>
<tr>
<td>2014 - 2015</td>
<td>39.5</td>
</tr>
</tbody>
</table>

CHRONIC ABSENCE 2014 - 2015

- **CD 3**: 39.5%
- **Bronx**: 31.7%
- **NYC**: 24.1%
Identifying buildings with high number of asthma ED & inpatient visits:
Methods overview

Colin D. Rehm, PhD, MPH
Office of Community & Population Health
Montefiore Health System
Project goal & case definition

- **Goal:** We wanted to identify the “buildings” with high number of asthma ED + inpatient visits
- Acknowledging that having a high number of asthma visits from a single visits ≠ higher risk, but may be useful for prioritizing interventions

**Inclusion criteria**

- Identified treat & release ED visits and inpatient visits with asthma as primary or secondary discharge code from 1/1/2012-7/31/2016
- From 8 ZIP Codes: 10452, 10453, 10457, 10458, 10460, 10462, 10467, 10468
- Extracted data on age, year of admission, visit type, payer (Medicaid)
- Data extracted from Clinical Looking Glass
- IRB exemption received from Einstein
Approach to identifying “hot spots”

- Numerous challenges linking patients to “buildings”
  - Inconsistent address reporting
  - Multiple addresses per building
- **Limitation**: addresses updated to reflect current address, may not be address of patient at time of admission
- In NYC buildings do not have explicit addresses in structured data, rather the **Borough Block Lot (BBL)** is the smallest geographic unit as structured data

Data processing for matching to “building”

- **All addresses** → **Cleaning of addresses** → **Collapse data on address (n=6746)** →
  - 69.5%: Direct match to BBL database (e.g., no geocoding)
  - 30.5%: Geocoded using NYS Composite Address Locator; linked to nearest BBL (~93% success rate)

- Correcting common misspellings (e.g., Mosholu)
- Use of common directional (e.g., “North” not “N”)
- Use of common prefix/suffix (e.g., “Avenue not “Ave”)
- Stripping apartment/unit numbers
Distribution of unique “buildings” and number of asthma visits

152 buildings had 20+ asthma visits from 2012-2016

As expected, buildings with highest number of asthma visits tended to be larger buildings; often NYCHA or large co-operatives, such as Parkchester.
Density of asthma visits among Medicaid patients in catchment area

More red areas have higher density of asthma visits

Some mismatch between “areas” with more asthma visits and “buildings” with most asthma

Notes: Visits are from 2012-7/2016. Does not include visits to non-Bronx Montefiore Health System locations.
Conclusions & Next Steps

- “Hotspot” mapping only one among many variables that need to be considered when choosing where resources should be allocated
- Taking existing clinical data and linking to “building” appears to be feasible and can be utilized in the future where appropriate
- Clinical data could be enriched with other environmental data (e.g., housing violations, Census attributes, 311 calls)
Mission

To improve the quality of life of asthmatic children and adults, helping families break the revolving cycle of poverty that is worsened by chronic disease.
Established in 2001, a.i.r. nyc operates a data-driven, community-based, care coordination model in which Community Health Workers (CHWs) deliver evidence-based, multi-component asthma self-management services to asthmatic children and adults in the home-setting.
BPHC Asthma Care Team Model

- Asthma Patient
- PCP/Specialist
- Supportive Clinical Staff
- Social Worker/Patient Navigator
- a.i.r. bronx
- Community Based Services
Outcomes

After a year in our pediatrics program:

• A 91% reduction in hospital admissions

• A 65% reduction of emergency room visits

• A 65% percent reduction in school absences
• The mobile health (mHealth) market is expected to reach $21.5 billion by 2018

• 93% of physicians believe mHealth apps have the potential to improve asthma-related patient outcomes

• Nearly 70% of the U.S. population owns a smartphone
ASTHMA-Educator Objectives

- Addresses the problem of critical time constraints in the primary care and emergency department settings

- Delivers NHLBI/NAEPP guideline-based asthma education, and aims to replicate the Montefiore Asthma Center’s human-delivered asthma education program

- Target settings – primary care sites, emergency departments, specialty clinics, outreach workers (home visits), home use by patients
ASTHMA-Educator Development And Content

- Initial/present version developed for English-speaking adult patients with persistent asthma
- Present version has been developed for the iPad and iPhone, and pilot tested on-site at the Montefiore Asthma Center
- IOS and Android smartphone versions expected by Winter of 2016
- Pediatric and Spanish versions in development currently

Algorithmic and personalized “conversations” between the user and software program with Interactive touch-screen features

Chapters provide education on Basic asthma facts, Proper usage of Inhaler technique, Role of medications, Peak flow meter usage, Asthma Action Plan and tips on avoidance of common Asthma triggers among other important asthma information

Videos/animations that will be translated into multiple languages
ASTHMA-Educator chapters

1) How asthma affects your airways
2) Medications for asthma and how these work
3) Rescue versus controller medications
4) Importance of spacer use and inhaler technique
5) Importance of peak flow monitoring
6) Asthma action plan
7) Environmental control strategies
8) Importance of smoking cessation
9) Exercise-induced bronchoconstriction

Importance of spacer use

Do you use a spacer when you take your asthma pumps?

☑️ No
☐ Yes

Please touch your answer choice or click the 'Microphone' button and say your choice
Group Discussion Notes

- Who is missing, who would you like to hear from?
  - PPS Leadership
  - DoE nurses, School Health
  - NYC DOHMH
  - Shelters
  - Early Childhood Education providers – Head Start
  - Politicians
  - Payors
  - Programs working also on obesity
  - American Lung Association
Group Discussion Notes

• How do we achieve systems alignment?
  • Need to build trust between partners
  • Need to follow through
  • Need to foster accountability
  • Embed 504 forms in EMRs
  • Foster outcome alignment between physicians and parents, partners

• CBO responsibility is to communicate back
For more information

• About participating in NYC RING and future NYC RING events and convocations—Claudia Lechuga claudia.lechuga@einstein.yu.edu
• About the workshop and future events related to the workshop—contact Paul Meissner – pmeissne@montefiore.org 718-920-7802