Partnering to Expand Community Outreach in Pediatric Primary Care: The Community Linkage to Care Program

Kevin Fiori MD, MPH1,2,3 Dana Sanderson MD1,2 Tashi Chodon MPH4 Sandra Braganza MD, MPH1,2
1 Department of Family & Social Medicine, Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY, USA
2 Division of General Academic Pediatrics, Department of Pediatrics, Children’s Hospital at Montefiore, Albert Einstein College of Medicine, Bronx, NY, USA
3 Integrated Health, New York, New York, USA
4 Bronx Community Health Network, Bronx, NY, USA

BACKGROUND

• In the United States, 1 in 5 children live in poverty including 47% of children in the South Bronx.
• Social Determinants of Health (SDH) influence asthma, obesity, infant mortality, and developmental outcomes in children. Screening for SDH has been associated with increased access to social services and improved health outcomes.
• Community Health Workers (CHWs) are uniquely positioned to provide a link from clinical care to community resources and serve a role in mitigating SDH.
• The Community Linkage to Care (CLC) program aims to integrate SDH screening and outreach using CHWs (figure 1).

OBJECTIVE

• To conduct an assessment of the Community Linkage to Care Program pilot implementation using the RE-AIM implementation science framework

METHODS

Setting: Urban ambulatory clinic located in the Bronx (see figure 2).
Design: A multidisciplinary team performed process mapping, developed clinical workflow and led iterative analyses. Using a pragmatic study design, the RE-AIM (Reach, Effectiveness- Adoption, Implementation, Maintenance) implementation science framework was modified to organize measures using prospectively collected SDH screening data from a 10-item standardized instrument, patient demographics and referral outcomes. Bivariate analysis and logistic regression modeling were utilized to measure association with primary outcome, status of referral.

RESULTS

• Key elements of the CLC program established through an iterative process included: SDH Screening, Referral Protocol, CHW Accompaniment, Administrative Liaison(s), Provider Champion(s) and Performance Improvement (figure 3).
• Reach: From December 2017-18, 4,948 families were screened for social needs during routine well child visits, representing 72% of eligible visits, and resulting in 984 screens with 1 or more positive SDH needs as shown in Figure 4.
• Effectiveness: At the end of the 12-month period, 44% of referrals were defined as “successful” versus 56% “unsuccessful”.
• Adoption: Providers referred 336 families who requested assistance from CHW. 88% of providers were active* in utilizing SDH screening instrument (*active: screen completed >50% of eligible visits per session).
• Implementation: Gender, age, race, ethnicity, preferred language and category of social need were not significantly associated (p-values > 0.05) with referral outcome in either bivariate analysis or multivariate models.

DISCUSSION

• CLC Program pilot was feasible in “real world” ambulatory setting with approximately 72% of families screened during eligible visits.
• Consensus and iterative discussions to establish key program components likely contributed to high adoption among providers.
• Less than half (44%) of families reported successful referrals suggesting mixed effectiveness and opportunities for improvement.
• Patient demographics were not observed to be significantly associated with referral outcomes.
• Post-pilot phase of CLC program development includes focusing on improving referral outcomes and CHW accompaniment strategies including increasing in-person handoffs from providers and improving communication via mobile phone applications.

Figure 1: Community Linkage to Care Program Simplified Process Map
(SDH= Social Determinants of Health, CHW= Community Health Worker)

Table 1: Characteristics of Referrals to Community Health Worker (CHW) from December 1, 2017 to November 30, 2018.

<table>
<thead>
<tr>
<th></th>
<th>Total n=984</th>
<th>SDH Screened n=6,854</th>
<th>SDH Screened or 1+ needs n=4,948</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accepted Referrals to CHW (n)</td>
<td>303</td>
<td>286</td>
<td>206</td>
</tr>
<tr>
<td>CHW patient encounters (in-person and telephonic) Total n</td>
<td>912</td>
<td>780</td>
<td>617</td>
</tr>
<tr>
<td>Initial Method of Contact (n)</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>In-person warm hand-off</td>
<td>35 (12%)</td>
<td>30 (11%)</td>
<td>25 (10%)</td>
</tr>
<tr>
<td>Phone</td>
<td>268 (88%)</td>
<td>258 (90%)</td>
<td>252 (94%)</td>
</tr>
<tr>
<td>Patient/Family Needs* (n=positive responses)</td>
<td>213 (70%)</td>
<td>186 (67%)</td>
<td>174 (69%)</td>
</tr>
<tr>
<td>Housing (general)</td>
<td>111</td>
<td>96</td>
<td>91</td>
</tr>
<tr>
<td>Housing Application</td>
<td>52</td>
<td>47</td>
<td>44</td>
</tr>
<tr>
<td>Pest Control</td>
<td>19</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>Benefits</td>
<td>102 (34%)</td>
<td>88</td>
<td>80</td>
</tr>
<tr>
<td>Food Insecurity</td>
<td>83</td>
<td>73</td>
<td>70</td>
</tr>
<tr>
<td>Childcare Assistance</td>
<td>42 (16%)</td>
<td>37 (14%)</td>
<td>34 (14%)</td>
</tr>
<tr>
<td>Legal</td>
<td>34 (11%)</td>
<td>28 (10%)</td>
<td>26 (10%)</td>
</tr>
<tr>
<td>Transportation</td>
<td>23 (8%)</td>
<td>20 (7%)</td>
<td>19 (8%)</td>
</tr>
<tr>
<td>Utilities</td>
<td>23 (8%)</td>
<td>20 (7%)</td>
<td>19 (8%)</td>
</tr>
<tr>
<td>Employment Services</td>
<td>11 (3%)</td>
<td>9 (3%)</td>
<td>8 (3%)</td>
</tr>
</tbody>
</table>
| *Multiple screens had more than 1 need

Figure 2: Household income data of Children in Bronx County, New York from The Opportunity Atlas (map insert: ambulatory clinic location indicated by yellow dot)

Figure 3: Community Linkage to Care Program components

Figure 4: Screening and Referral Flow Diagram from Community Linkage to Care Program from December 1, 2017 to November 30, 2018.