Pediatricians assess social determinants to stratify the pediatric population based on support needed from the PCP team.
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Introducing CHA and CHF

Who we are:
An alliance of 100+ private pediatricians in Oregon and Washington

Our goal:
Lead clinical improvement innovations and deliver the highest quality of care to children and their families

The Alliance and the Foundation work together to:
• Develop and implement transformational quality improvement programs
• Drive quality care delivery, care experience and cost management
• Offer clinical and strategic expertise about meaningful pediatric measures and actionable workflow solutions
Rich Clinical QI Experience across a network of 120+ pediatric providers

- Demonstrated success with Developmental Screening, Immunization, Asthma Care Management, Behavioral Integration, Pediatric Care Management and Population Analytics programs
- Leading collaboration on delivery and improvement of Pediatric Office-based Care Management & Community Connections
- Pioneering of the pediatric Support Level Assessment approach and tool to stratify patients by the level of support needed from their care team while considering medical, social and family factors
- Development of pediatric-focused PHM to support Key Pediatric Quality Measures spanning critical domains of pediatric care
- Success delivering physician/care team education on Compassion-informed Care and Building Resiliency in pediatrics
Demonstrated Results of Physician-led QI

- Two-year old immunization rate 86%, compared to Oregon rate of 67%
- 89% of children with asthma had an annual asthma encounter with their pediatric care team
- >103,000 children/families have had medical/social needs assessment
Today’s Learning Objectives

1. Demonstrate **CHA’s approach** for risk stratifying the medical and social support needs of children/families.

2. Evaluate social determinants **results and correlations** for over 103,000 pediatric patients in Oregon/SW Washington.

3. Explore how PCP care teams **use the data** to serve individual patient and population needs.

4. Discuss **future steps** in improving social factor assessments and population health management.

5. Using **needs-based tiering assessments** to more accurately identify true costs for value based contracting.
“...we have found compelling the growing scientific evidence that negative social determinants of health, including ACEs, have a profoundly detrimental and permanent impact on the child’s lifetime health and well-being.

...and the recognition that pediatricians are in a unique position to screen for these factors and link families and children to external service organizations that can help build resilience and address the social determinants of health.

Source: Bailit health: Value-Based Payment Models for Medicaid Child Health Services July 13, 2016.
The power of the pediatric medical home + parent/patient relationship
“Four in five physicians participating in a national survey... reported that they did not have the capacity to address patients/broader social needs.”

CHA’s methodology for assessing the medical and social support needs of children/families

- Based on provider assessment of patient-centered support needs at the time of PCP visit
  - Based on episodic needs and psychological contributions

- This care coordination needs-assessment spans beyond Medical Complexity to consider social determinants of health (SDH), family/parental factors and patient functioning
CHA Needs-assessment Methodology (continued)

- Focuses on **pediatric** complexity factors which are not evident via claims-based adult risk algorithms

- There is ongoing development to merge provider assessment with **meaningful clinical and claims data of utilization patterns** and SDH
  - One CHA practice leads pediatric clinical complexity algorithm development in EPIC via LEAP by identifying objective EMR utilization and social data

- “Support Level Assessments” **guide care management** approaches and interventions for individual patients
Support Level Assessment
Understanding the level of support needed from the PCP care team to optimally manage the patient’s overall health

- Assessing medical conditions alone does not reflect overall support needs

3 key drivers of patient/family support needs:
- Medical complexity
- Patient Functionality including SDH
- Family factors including SDH

- A flexible and fluid Support Level Assessment score ("Care Management Tier") offers care teams actionable segmentation of their populations
Our Needs Assessment and Segmentation Tool

Resulting Support Levels:

Tier 1 = Highest
Tier 2 = Lots Extra
Tier 3 = Some Extra
Tier 4 = Standard

(intentionally subjective)

Guidance encourages consistency!
Social determinants results and correlations

- In children, family and social factors are a greater driver of support needs:
  - Poverty
  - Family mental health and parental ACEs
  - Zip code
  - Parental health literacy
  - Language and cultural barriers to care

- Adult models do not adequately represent pediatrics
Social determinants results and correlations (continued)

- Relevant research/learnings on pediatric social determinants
  - Cincinnati Children’s 30 criteria assessment
  - OCCYSHN Complexity Modeling
  - CHA Pediatric Care Management Multi-disciplinary panel
  - Seattle Children’s Pediatric Medical Complexity Algorithm (PMCA)
    - Next research: Pediatric Social Complexity algorithm
      - Parent: Domestic Violence, Death, Mental Illness, Criminal Justice Involvement
      - Family: Child Welfare involvement, Homelessness, Poverty, Limited English proficiency
      - Child: Mental illness, Substance abuse treatment needed, Juvenile/Criminal Justice
CHA Support Level Assessment – Population Data

Needs for support from the Pediatric PCP Team
Spread of the SLA Scores

Patient's Current Support Level

<table>
<thead>
<tr>
<th>Support Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (highest)</td>
<td>1%</td>
</tr>
<tr>
<td>2 (lots extra)</td>
<td>4%</td>
</tr>
<tr>
<td>3 (some extra)</td>
<td>22%</td>
</tr>
<tr>
<td>4 (standard)</td>
<td>73%</td>
</tr>
</tbody>
</table>

n=81,796

n=95,127
<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Count</th>
<th>% of Total Popln</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma &amp; Other Pulmonary Diag</td>
<td>5,406</td>
<td>6.21%</td>
</tr>
<tr>
<td>ADD/ADHD</td>
<td>3,777</td>
<td>4.34%</td>
</tr>
<tr>
<td>BMI &gt;= 95%</td>
<td>3,300</td>
<td>3.79%</td>
</tr>
<tr>
<td>Allergies/Immunological d/o</td>
<td>3,276</td>
<td>3.76%</td>
</tr>
<tr>
<td>Dermatology Diagnosis</td>
<td>2,966</td>
<td>3.41%</td>
</tr>
<tr>
<td>Mental Health Disorder</td>
<td>3,110</td>
<td>3.57%</td>
</tr>
<tr>
<td>Developmental Delay/Learning...</td>
<td>2,820</td>
<td>3.24%</td>
</tr>
<tr>
<td>Gastrointestinal Diagnosis</td>
<td>2,143</td>
<td>2.46%</td>
</tr>
<tr>
<td>Ophthalmology/Vision Diagnosis</td>
<td>1,434</td>
<td>1.65%</td>
</tr>
<tr>
<td>Neurological Diagnosis</td>
<td>1,312</td>
<td>1.51%</td>
</tr>
<tr>
<td>BMI = 85-94%</td>
<td>1,087</td>
<td>1.25%</td>
</tr>
<tr>
<td>ENT/Hearing Diag</td>
<td>1,147</td>
<td>1.32%</td>
</tr>
<tr>
<td>Urological/Gynecological Diagnosis</td>
<td>1,147</td>
<td>1.32%</td>
</tr>
<tr>
<td>Endocrine Diagnosis</td>
<td>1,024</td>
<td>1.18%</td>
</tr>
<tr>
<td>Behavioral Disorder</td>
<td>1,109</td>
<td>1.27%</td>
</tr>
<tr>
<td>Orthopedic Diagnosis</td>
<td>989</td>
<td>1.14%</td>
</tr>
<tr>
<td>Other</td>
<td>878</td>
<td>1.01%</td>
</tr>
<tr>
<td>Autism Spectrum...</td>
<td>889</td>
<td>1.02%</td>
</tr>
<tr>
<td>Cardiac Diagnosis</td>
<td>726</td>
<td>0.83%</td>
</tr>
<tr>
<td>Neurological/Impairment Complex</td>
<td>559</td>
<td>0.64%</td>
</tr>
<tr>
<td>Chromosomal...</td>
<td>434</td>
<td>0.50%</td>
</tr>
<tr>
<td>Dental Disease</td>
<td>359</td>
<td>0.41%</td>
</tr>
<tr>
<td>Renal Diagnosis</td>
<td>337</td>
<td>0.39%</td>
</tr>
<tr>
<td>Hematologic Diagnosis</td>
<td>274</td>
<td>0.31%</td>
</tr>
<tr>
<td>Substance Abuse/Dependence</td>
<td>124</td>
<td>0.14%</td>
</tr>
<tr>
<td>Metabolic Disorder</td>
<td>124</td>
<td>0.14%</td>
</tr>
<tr>
<td>Cancer</td>
<td>81</td>
<td>0.09%</td>
</tr>
</tbody>
</table>
### CHA Support Level Assessment Results

**Correlation of Social Factors to Support Level**

**Overall Support Level Score – Driving Factors Analysis**

(1 is highest, 4 is lowest)

<table>
<thead>
<tr>
<th># of Chronic Conditions:</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT - Additional daily support</td>
<td>2.51</td>
<td>2.39</td>
<td>2.09</td>
<td>1.87</td>
<td>1.52</td>
<td>1.31</td>
<td>1.95</td>
</tr>
<tr>
<td>PT - Communication/Visual/Hearing</td>
<td>2.35</td>
<td>2.61</td>
<td>2.36</td>
<td>1.98</td>
<td>1.65</td>
<td>1.35</td>
<td>2.09</td>
</tr>
<tr>
<td>PT - Social functioning</td>
<td>2.40</td>
<td>2.60</td>
<td>2.34</td>
<td>2.19</td>
<td>1.95</td>
<td>1.46</td>
<td>2.23</td>
</tr>
<tr>
<td>PT - Intellectual/Developmental limitations</td>
<td>2.72</td>
<td>2.84</td>
<td>2.49</td>
<td>2.20</td>
<td>1.82</td>
<td>1.50</td>
<td>2.37</td>
</tr>
<tr>
<td>PT - Mental health or behavioral challenges</td>
<td>2.78</td>
<td>2.79</td>
<td>2.52</td>
<td>2.27</td>
<td>2.07</td>
<td>1.71</td>
<td>2.50</td>
</tr>
<tr>
<td>Fam - Parental health literacy</td>
<td>3.17</td>
<td>2.85</td>
<td>2.49</td>
<td>2.31</td>
<td>1.84</td>
<td>1.50</td>
<td>2.75</td>
</tr>
<tr>
<td>Fam - Challenges with treatment plan</td>
<td>3.32</td>
<td>2.97</td>
<td>2.60</td>
<td>2.33</td>
<td>2.02</td>
<td>1.65</td>
<td>2.85</td>
</tr>
<tr>
<td>Fam - Sig family stressors</td>
<td>3.40</td>
<td>2.96</td>
<td>2.58</td>
<td>2.30</td>
<td>1.98</td>
<td>1.59</td>
<td>2.90</td>
</tr>
<tr>
<td>Fam - Limitation of resources</td>
<td>3.50</td>
<td>3.06</td>
<td>2.66</td>
<td>2.38</td>
<td>2.06</td>
<td>1.65</td>
<td>2.97</td>
</tr>
<tr>
<td>Fam - Communication/Language barriers</td>
<td>3.68</td>
<td>3.27</td>
<td>2.92</td>
<td>2.59</td>
<td>2.08</td>
<td>1.55</td>
<td>3.28</td>
</tr>
<tr>
<td>No concerns of added factors</td>
<td>3.69</td>
<td>3.18</td>
<td>2.91</td>
<td>2.62</td>
<td>2.41</td>
<td>1.84</td>
<td>3.35</td>
</tr>
</tbody>
</table>

**Average Support Level**

- Patient functioning factors alone drive as much as one point higher in support level
- The number of chronic conditions drives higher support level
- The sorted order of factors show highest to lowest influence on support level
CHA Support Level Assessment Results
Factors driving support needs/level

**Additional Factors Contributing to Patient/Family Support Level (Needs)**

<table>
<thead>
<tr>
<th>Category</th>
<th>No data</th>
<th>No Concerns</th>
<th>Family and Patient Concerns</th>
<th>Patient Concerns Only</th>
<th>Family Concerns Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest (1% of sample)</td>
<td>18%</td>
<td>8%</td>
<td>39%</td>
<td>15%</td>
<td>20%</td>
</tr>
<tr>
<td>Lots Extra (4%)</td>
<td>12%</td>
<td>15%</td>
<td>30%</td>
<td>12%</td>
<td>30%</td>
</tr>
<tr>
<td>Some Extra (23%)</td>
<td>13%</td>
<td>43%</td>
<td>6%</td>
<td>6%</td>
<td>32%</td>
</tr>
<tr>
<td>Standard (72%)</td>
<td>4%</td>
<td>89%</td>
<td>7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As assessed by the primary care pediatrician using the Children's Health Foundation process and scale

n= 63,244
How can care teams use SDH assessment data

- Develop your care team to support SDH needs
- Dedicate care management roles for higher needs patients
- Set up Pre-Visit Planning to prepare for encounters
- Expand the scope, use and visibility of care plans
  - Expands beyond medical care to include social and educational supports, etc.
  - Address items that may not be in the medical record
  - A place to document SDH that drive care needs and associated goals
  - Shared across care team
- Care gap tracking and alerts
Expanded Care Teams

Example:

- Provider (Medical and Behavioral Health)
- Medical Assistant
- Medical Receptionist
- Referrals Coordinator
- Care Manager
- Panel Manager
Getting started…
Build processes and tools

- Start with paper (?)
- Flag in EMR when possible
- Track highest complexity patients
- Document in a place that is accessible by broader care team
- Set goals for outreach or contact based on complexity
- Consider more sophisticated PHM tools
The CHA HIT tool for Care Management & Reporting

Data Inputs ➔ Actionable Outputs

- EMRs
- PMs
- Labs
- Payers
- HIEs
- Registries

Reflections:

- Assess Care Needs
- Close Care Gaps
- Deliver Preventive Care
- Treat Chronic Disease
- Perform Patient Outreach
- Survey Patients
- Predict Risk
- Analyze Cost
- Manage Utilization
- Report Outcomes
Taking action at the point of care... Patient Examples
“Johnny”

12yo male with **GATA 2 mutation** resulting in **congenital lymphedema** of bilateral LE’s and **immunosuppression**. Two hospitalizations for cellulitis of left LE due to not wearing compression stockings. He also has **anxiety and defiance**.

**Single mother** who is an ER nurse but has **ADHD** and struggles with **personal medical and MH issues**, resulting in her **struggling to parent child regarding compliance with stockings** and history of **missed appointments** leading to discharge from previous PCP’s practice. Currently, mom is **behind on PCP bills**.
Patient Example: “Johnny”

- Support level score = **Tier 1**
  - patient requires more than typical medical follow up
  - several social determinants and mental health issues that lead to avoidable hospitalizations

- Requires extensive Care Management to avoid missed appointments, unnecessary ER visits, future hospitalizations, and coordinate multiple specialist recommendations (labs, imaging, prophylactic antibiotics) with the ultimate goal of improved quality of life for patient and family.
PCP Workflow for “Johnny” (Tier 1)

- Mom calls because patient’s legs are very swollen and painful
- Care Manager gets mom’s voicemail (mom has direct phone #)
  - CM contacts mom and learns that patient has not been wearing his compression stockings. Mom has been struggling with a move and working as a single mom. Patient has been excessively combative and argumentative with mom in the last two weeks.
  - Afebrile, no rash on legs.
  - CM contacts PCP and psychologist for suggestions on next steps
  - Psychologist offers interventions to help further the behavior changes that are needed in the patient and guide the mother on parenting tactics.
  - CM will also look into community resources to help mother on a more frequent schedule to deal with day to day parent-child interaction problems.
Using Support Level for care delivery – Managing **High Level** Patients

- Care Management
  - Nurse, CHW, Patient Navigator, Referral Coordinator, etc.

- Care plans
  - Managed by PCP, Care Manager and Specialists

- Pre-visit planning
  - Team meetings and/or huddles involving multiple care team members
    - Action items for patients prior to visit including coordination of specialist’s recommendations

- Care gap alerting
  - Preventive and Chronic care: Well child checks, immunizations, screenings, disease and medication management, care management outreach (acute and maintenance), etc.
10yo obese female with total cholesterol of 220 but normal fasting lab workup. Parents are divorced and eating habits vary greatly between households. Activity level seems low and both parents are obese.

Chronic condition is not well controlled

Family factors act as barriers to control
Patient Example: “Sarah”

- Patient currently does not require active Care Management
- Patient would benefit from nutrition and BH consults, social worker, and possibly other patient-centered supports.
- Tier 3 designation positions patient for extra follow-up before next well visit to check in on control
  - Weight check
  - Repeat labs (if necessary)
  - Inquire about SDH to uncover concerns
PCP Workflow for “Sarah” (Tier 3)

- Designated support staff runs a list of Tier 3 patients due for contact (may segment by condition)
- List is reviewed by MA to identify care gaps
- Outreach performed as necessary
  - Phone call
  - Schedule Visit
  - Schedule lab only
- Prioritize outreach by tier
Using Support Level for care delivery – Managing Lower Complexity Patients

- Care Management
  - MA’s and/or Panel Managers
- Care plans
  - Provider
- Pre-visit planning
  - Team meetings and/or huddles involving multiple care team members
    - Action items for patients prior to visit
- Care gap alerting
  - Preventive care: Well child checks, immunizations, screenings
Future steps for CHA Support Level Assessments
Success so far...

Providers Value the SLA

- Pediatric care teams are engaged
- Practices are using the assessments to gain more **awareness of broader patient needs**...
  ...and to implement care, community connections and other **appropriate supports**...
  ...and to **adjust staffing and operational strategies** to align with patient-centered needs
- Practices recognize **improved visit preparedness & efficiency**
- Believe in the **linkage to improved health outcomes**
- **Assessments support other related care approaches** like compassion-informed care and building resiliency
Next Steps...

Our Journey Continues

- Version 1 (2013-2016) focused on both Medical and SDH. Yielded patient and population data on over 103,000 patients

- Version 2 (2017) Emphasizes SDH factors including ACES.
  - Piloting incorporation of EMR-based utilization/risk model.
  - Piloting systematic approaches to engaging the parent/patient in identifying SDH.

Focus on expanded analytics to look for disparities between complexity levels and opportunities to further target care

Adjust interventions and supports based on learnings

- Version 3... Incorporate pilot learnings and use PHM tool to achieve a collective view of SLA alongside risk algorithms.
Elements of Sustaining an Assessment Approach

- Continued education of care teams and providers
- Ability to adjust and incorporate learnings
- Quality measures and gap actions stratified by tiers
  - Cadence of assessments
  - Care goals associated with tiers
- CCO/Payer engagement
  - Sharing of social data
  - Alternative payment structures
Improving SDH info sharing

- Develop ways to share SDH information between service sectors
- Structured data in EHR: Problem list, social history, coding to ICD-10
- Engage the family more in identifying SDH and associated support needs
- CCOs can lead in breaking down siloes between medical, mental health and social services
Population data to support value based contracting

Current models often use historic FFS claims. Not capturing true costs. Struggle to identify high cost segment (children with special health care needs).

Emerging literature on long term cost savings when high needs patients are identified and appropriate care coordination services are put in place.

- WVCH Family support navigators
- OHSU NICH
- Yamhill Paramedics visiting homes of high ER utilizing patients
Social determinants are long term drivers of cost contributing to later chronic disease and lower academic achievement.
Literature Excerpt on Medicaid payment Considerations

Because of the impact of socioeconomic determinants, including ACEs, on the long-term health and well-being of children covered by Medicaid, a pediatric payment model should anticipate the need for pediatric practices to address these factors by:

1) screening for them [SDH];

2) providing interventions, such as parental education and support and behavioral health services, when appropriate services are available within the practice;

3) establishing robust linkages to community-based behavioral health, educational, and social service organizations that can address more directly the social determinants that are beyond the scope of a pediatric practice; and

4) making and closing referrals to such community-based organizations.

Source: bailit health: Value-Based Payment Models for Medicaid Child Health Services July 13, 2016.
Challenges with Pediatric Value-based Payment Models

- Most children generate little medical expense
- Medically complex children are heterogeneous
- Present and future health status is largely effected by factors not under the control of clinicians
- Most Medicaid providers are not ready for value-based payment

Source: bailit health: Value-Based Payment Models for Medicaid Child Health Services July 13, 2016.
Pediatric Value-based Payment Models

- Offer more practice flexibility

- Blended methods of payment
  - VPBM’s for non-complex children
  - VPBM’s for complex children

- Consistent reimbursement for screening, referrals, and care management services

- Accountability measures that are child specific

- Funding to support clinician interactions with community organizations

- Include specialists in VBPM
  - They care for most complex children/teens

Source: bailit health: Value-Based Payment Models for Medicaid Child Health Services July 13, 2016.
Questions & Discussion

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