Socially Determined
Corporate Overview
Social Determinants of Health –
From Analytics to Action

September 2018
Socially Determined’s Significant Seven

**ECONOMIC WELLBEING**
How income, employment, access to benefits and financial security affect health and health care

**HOUSING**
How the characteristics of dwellings within an area affects the health and healthcare of the people living there

**TRANSPORTATION**
How the availability, accessibility and safety of transportation in a neighborhood affects health and health care

**FOOD INSECURITY**
How being without reliable access to a sufficient quantity of affordable, nutritious food affects health and health care

**CRIME & VIOLENCE**
How the prevalence of crime, violence and legal challenges in a neighborhood affects health and healthcare

**HEALTH LITERACY**
How the ability to obtain, read, understand, and use healthcare information to make decisions and comply with treatment affects health and health care

**SOCIAL SUPPORT**
How the availability of assistance from other people and the feeling that one is part of a supportive social network affect health and health care
Patient Journey

1. **Data Collection & Analysis**
   - Collect and analyze SDOH data
   - Collect clinical data and claims data
   - Leverage commercial data
   - Create a proactive process to target specific patients based upon analysis

2. **Screening & Assessment**
   - Utilizing data analysis to screen patient
   - Conduct secondary assessments based on positive screens
   - Identify specific subpopulations

3. **Social Care Plan**
   - Identify key subpopulations
   - Create social care plans and referral strategies in clinical context
   - Catalog internal capabilities
   - Create directory of community services

4. **Referral & Connection**
   - Educate patient on process and personal role and support available
   - Institute's internal care management
   - Referral to external resources
   - Share data and social care plan

5. **Fulfillment & Tracking**
   - Track referral completion
   - Measure outcome and utilization measures
   - Refine analytics based upon ROI
   - Iterate model based on value based results
Advanced data analytics to quantify/visualize risk factors

SD Curated Community Data

COMMUNITY RISK INDICES

Clinical/claims data from customer

SD Analytics Machine Learning Pipeline

Principal Components Analysis
Clustering Algorithms
Inferential Networks

COMMUNITY VULNERABILITY METRICS

SDOH INDICES

SDOH POPULATIONS

SDOH INTERVENTION MODELS

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SocialScape™ Navigator
Browsing consolidated social determinant data in communities
Client Case Study
Cleveland Market
High concentrations of poor outcomes in 3 clusters

6 neighborhoods comprise half of total NICU babies
Neighborhood Risk Profiles & Prioritization

<table>
<thead>
<tr>
<th></th>
<th># Babies</th>
<th>% NICU Births</th>
<th>Avg. Cost of Initial Stay</th>
<th>Median Income</th>
<th>Economic Index</th>
<th>Food Index</th>
<th>Transportation Index</th>
<th>Housing Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Medicaid Pregnancies</td>
<td>5,027</td>
<td>14.6%</td>
<td>$45,530</td>
<td>$41K</td>
<td>3.2</td>
<td>3.6</td>
<td>3.1</td>
<td>4.3</td>
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<tr>
<td>Neighborhood 1</td>
<td>348</td>
<td>15.2%</td>
<td>$39,816</td>
<td>$30K</td>
<td>3.4</td>
<td>4.1</td>
<td>3.4</td>
<td>4.8</td>
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<tr>
<td>Neighborhood 2</td>
<td>162</td>
<td>17.3%</td>
<td>$22,899</td>
<td>$30K</td>
<td>4.7</td>
<td>4.1</td>
<td>4.0</td>
<td>4.9</td>
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<tr>
<td>Neighborhood 3</td>
<td>324</td>
<td>16.0%</td>
<td>$39,144</td>
<td>$41K</td>
<td>4.4</td>
<td>3.4</td>
<td>4.1</td>
<td>3.3</td>
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<td>Neighborhood 4</td>
<td>263</td>
<td>14.4%</td>
<td>$40,666</td>
<td>$34K</td>
<td>4.8</td>
<td>3.9</td>
<td>4.4</td>
<td>4.4</td>
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<tr>
<td>Neighborhood 5</td>
<td>231</td>
<td>12.1%</td>
<td>$32,642</td>
<td>$30K</td>
<td>4.9</td>
<td>4.7</td>
<td>4.2</td>
<td>4.9</td>
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<tr>
<td>Neighborhood 6</td>
<td>393</td>
<td>16.0%</td>
<td>$61,696</td>
<td>$19K</td>
<td>3.1</td>
<td>4.3</td>
<td>3.2</td>
<td>5.0</td>
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</table>
# High Risk Patient Archetype: Social & Clinical

## Social Challenges

- Makes less than $27,500 per year
- 85% do not have bank accounts or credit
- Low Educational Attainment
- 40% Evicted at least once
- 9 out of 10 are unwed

## Clinical Reality

- 1 in 4 have mental illness or substance abuse issues
- Likely has one or more conditions (diabetes, hypertension) complicating pregnancy
- Typically will not attend all pre-natal appointments
- Age 26-35, multiple children

## Social Independence as the antidote

<table>
<thead>
<tr>
<th>Has income greater than $33,000</th>
<th>Attended college</th>
<th>Level or positive address trajectory</th>
<th>Has name on housing lease</th>
</tr>
</thead>
</table>

Confidential and Proprietary—Do Not Distribute
Cumulative ROI vs. Investment $
Red Carpet for Mom
Neighborhood Oriented Social & Clinical Intervention Campaign

SDOH “Essentials”
- Food Prescription Program
- Transportation
- Stable Housing
- Integrated Behavioral Health and Addiction Services

Key Design Elements
- Personalized Wellness and Social Care Plan
- Social Support Networking Center(s) – In-Person and Virtual
- Technology Enabled Care Ecosystem
- Self-Sufficiency Programs to Drive Sustainability
2018-2019 Road Map

Maternal
- Activation
- Enrollment and Baseline
- Performance Year 1

MSSP
- Analytics
- Activation
- Enrollment and Baseline
- PY1

ER Avoidance
- Increased Speed to Execution
- Increased ownership by Client
- Analytics
- Activation
- Enrollment and Baseline
- PY1

Pain
- Analytics
- Activation
- Enrollment and Baseline
Campaign Activation Themes

Analytics

Target Neighborhood SocialScape

Risk Profile & Intervention Match

Enrollment Screening

Social Care Plan

Food Programs
- Food Farmacy
- SNAP/Enrollment
- Meal Delivery

Housing Support
- Peabody Renovation
- Expired Location Access
- Lead Paint Abatement

Clinical Care Component
- Patient Advocate
- Weight Management/Flex
- Centering Program

Transportation
- Multimodal Vans/Program
- Coordinated Lyft Rides
- Demand Vouchers

Behavioral Health Services
- Telemedicine Counseling
- Provider-led Peer Group Program
- Integrated Psychiatric Care

Social Funding & Matching

Social Investment & Partnership

RFI/MOU Candidates

Corporate Partners
- Foundations
- City/State
- Payers

Program Management

Partner Procurement

RFI/MOU Candidates

Food
- Grocery Vouchers
- Prepared Meal Delivery
- Meal Kit Delivery

Transportation
- Coordinated Lyft Rides
- Transit Vouchers

Mental/Behavioral
- Telemedicine Counseling
- Coordinated Lyft Rides
- Integrated Psychiatric Care

Digital Care Platform
- CIT Health
- Act.md
- Civic Health
## 2018-2019 Active Partnerships
Targeting regional partners with strong Payer/Provider Integration

<table>
<thead>
<tr>
<th>Region</th>
<th>Provider</th>
<th>Plan</th>
<th>Population</th>
<th>Patient Focus</th>
<th># of Patients</th>
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</thead>
<tbody>
<tr>
<td>Northeast Ohio</td>
<td>MetroHealth</td>
<td>CareSource</td>
<td>2018: Medicaid</td>
<td>Maternal Health ED Utilization Chronic Disease</td>
<td>~165K</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2019: Medicare</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Northwest Ohio</td>
<td>PROMEDICA</td>
<td>PARAMOUNT</td>
<td>All Patients</td>
<td>Diabetes ED Utilization Food Security</td>
<td>~640K</td>
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<tr>
<td></td>
<td>WELL CONNECTED</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western PA</td>
<td>UPMC</td>
<td>UPMC Health Plan</td>
<td>All Patients</td>
<td>Pediatrics Breast Cancer Transportation</td>
<td>~700k</td>
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<tr>
<td></td>
<td>LIFE CHANGING MEDICINE</td>
<td></td>
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<tr>
<td>Western NY</td>
<td>Catholic Health</td>
<td>Independent Health</td>
<td>All Patients</td>
<td>Cardiology Metabolic/Obesity Bariatric Maternal Health</td>
<td>~400k</td>
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<tr>
<td></td>
<td>Health</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5 Regions</td>
<td>AARP</td>
<td></td>
<td>All Seniors</td>
<td>Social Isolation</td>
<td>~1.5M</td>
</tr>
</tbody>
</table>
WE ARE

SOCIALLY DETERMINED