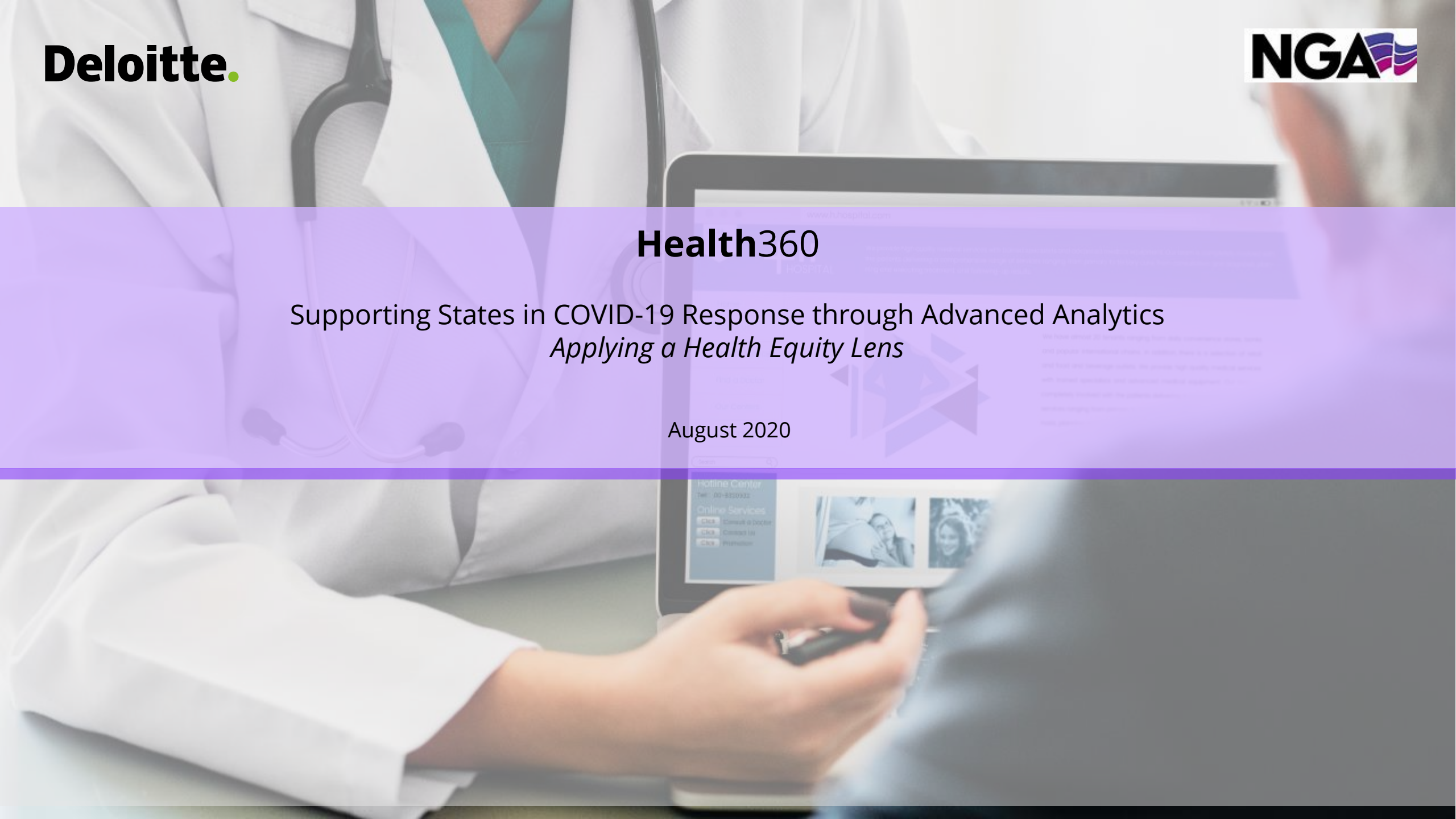

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NGA

Health360

Supporting States in COVID-19 Response through Advanced Analytics

Applying a Health Equity Lens

August 2020

Why Health360? With COVID, States face complex challenges impacting everyone. This puts tremendous pressure on having the right information, at the right time, at the right level of detail (i.e. ideally at the household or individual level). With the right information, States can better protect lives and their economies.

Health360 brings **current household data on everyone** in the State. A dedicated data science team comes with Health360. The team uses the data & 150+ predictive models to provide answers to State leaders so they can more effectively managing the COVID response.

Below are examples of how **Health360** is being used to better protect vulnerable populations and better manage the economy in various States:

TODAY

- **Community Outreach Support (Regional/Local Playbooks)**
- **At-Risk Population Identification**
- **Resource Distribution (PPE, hand sanitizers etc.)**
- **Testing Site Selection**
- **Economic Recovery**
- **Food Insecurity**
- **Housing Insecurity**
- **Unemployment**

IN PROCESS

- **Infection Response (CTT Integration)**

FUTURE USES

- **Vaccine Administration**

The first 4 examples listed above appear in subsequent slides, illustrating how Health360 is used in States' COVID responses

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One of the largest known Social Determinants of Health (SDoH) databases in the United States for all 50 states with health risk models for over 20+ diseases types (such as hypertension, diabetes , cardiovascular disease, respiratory/COPD)

Demographic information

- Age
- Race/Ethnicity
- Gender
- Household/marital
- Dwelling type

Deloitte COVID-19 and health related indicators

- COVID-19 risk score based on known comorbidities
- Comorbidities disease score (hypertension, diabetes, cardiovascular disease, etc.)
- Disease propensity scores
- Elevated risk of complications from influenza
- BMI risk score
- 100+ SDoH related algorithms and scoring models

Financial information

- Net worth
- Estimated income
- Homeowner status
- Asset investment type
- Bankruptcy indicators
- Auto ownership and type
- Elevated risk of unemployment risk score

Lifestyle information

- Purchase & spending behaviors
- Sports & other hobbies
- Retail and online purchase types
- Subscriptions
- Activities and interests
- Survey results
- Political affiliation

Neighborhood information

- Population density
- Percent above poverty level
- Median household income
- Percent single family homes
- Risk of foreclosure, eviction and housing insecurity

Deloitte synthetic variables

- Healthy Behavior Change Index
- Adaptability to technology
- Online search index
- *Variables based on **client needs and priorities***

230M+
U.S. Adults Scored

Data updated
Monthly

1,500+
variables on households

Provides **360°** view of a household

7 yrs.
of SDoH individual data

One of the largest known Social Determinant of Health databases in the U.S.

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States can support local COVID responses with customized playbooks

Using information on every household in a local area, Playbooks are highly tailored & actionable

Sample contents in a local Playbook:

- Understand Key Populations (15+ standard categories, 100s of ad-hoc categories)
- Plan and execute testing activities including for "hidden" vulnerable populations
- Design & deploy culturally sensitive communications tailored for local populations
- Select and plan for door-to-door distribution of limited resources (PPE…)
- Near real-time monitoring for early sensing of local health and economic risks
- Work with local officials so they are well supported and prepared

Sample Local Populations of interest that Health360 can identify:

- Elderly with 1+ co-morbidities
- Meat Packing Facilities
- Prisons
- Skilled Nursing Facilities
- Multi-Gen Households
- Essential workers
- Impacted by school reopening
- Recently unemployed
- Communities of color with 1+ co-morbidities
- At risk in food deserts
- At risk in health deserts
- Others

Using Health360, States produce actionable customized COVID-19 Response Playbooks for local Health & Govt officials.

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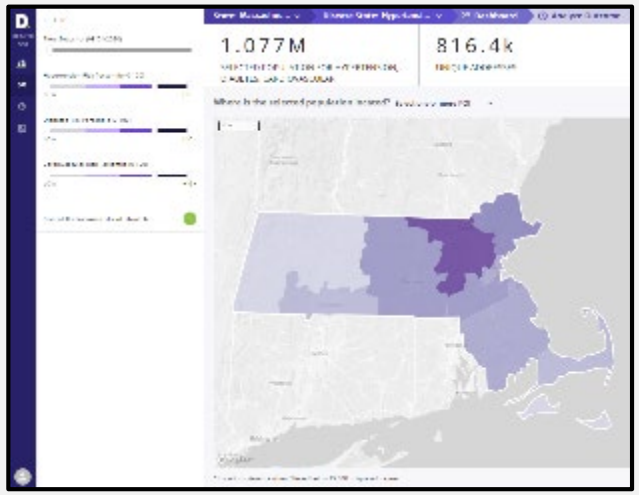
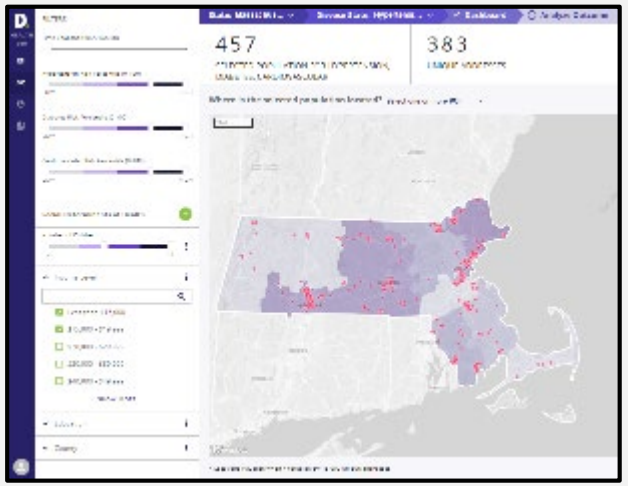
Understanding comorbidities are key to identifying at-risk populations. Health360 uses 20+ diseases and 50+ social determinants of health variables to identify and target interventions for vulnerable populations.

20+ Disease Models



Understanding comorbidities are key to identifying at-risk populations. Health360 allows analysis on 20+ disease states, including cardiovascular disease, diabetes, and hypertension.

50+ Social Determinants of Health



= at-risk household

Example analysis: Food insecurity

- *Multiple comorbidities*
- *4 children in household*
- *Income of <$20,000*
- *Education level of "some college" or below*
- *Overlay distance to grocery stores*

Take action in geographic areas with populations at higher risk for food insecurity

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Map shows census tracts with the most vulnerable populations in this area, represented by blue dots. The vulnerable populations have health risk and low income.

Where are the most vulnerable populations?

- Elevated health risk for complications from COVID-19 (hypertension, cardiovascular disease, diabetes, asthma, COPD)
- Low Income <$30K

40,000 PPE available to distribute initially

#	Census Tract	Total Population	% Income <$30K	Area density (people per sq mile)	% Spanish preferred
1	202	5000	60%	12,000/sq mile	5%
2	201	2200	40%	6800/sq mile	3%
3	604	6300	58%	6200/sq mile	1%
4	301	2700	77%	10,100/sq. mile	0.5%
5	204	5000	48%	7,300/sq. mile	0%
6	608	3700	45%	1,400/sq. mile	5%

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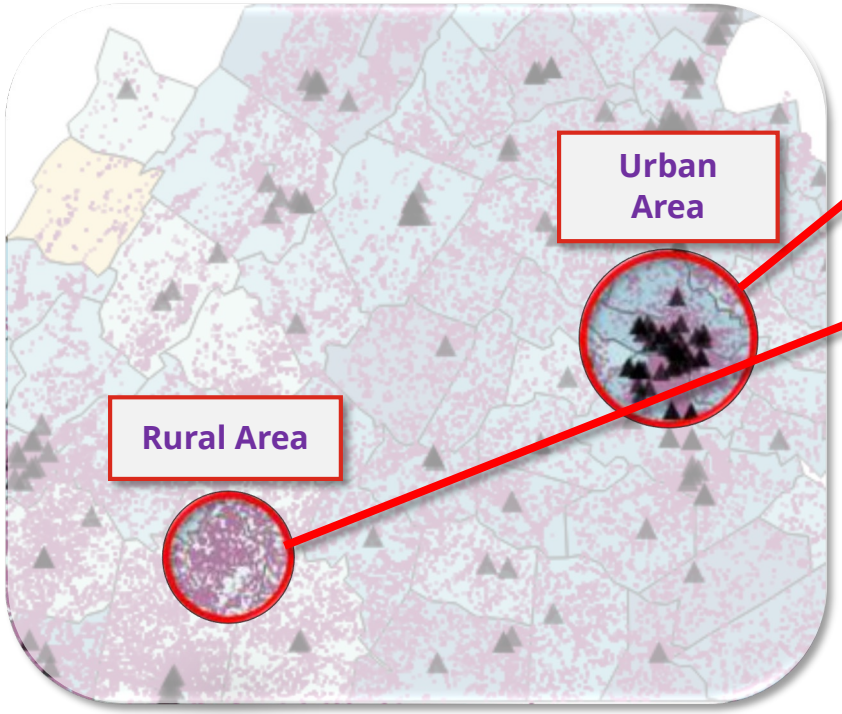
A holistic look at this state helped to identify individuals with **elevated health risks** for complications from COVID-19, **income less than $20K**, current COVID-19 **positive cases**, and their **distances from testing** facilities.



Strong testing site coverage around the capital

Virtually no testing locations in the western rural communities

Key

- At-Risk Population (6.8% across 702 Census Tracts)
- Testing Sites

Blue-Green Color gradient: COVID-19 positive cases (as of 6/2/20)

Gain visibility into geographic areas with vulnerable populations, high COVID-19 positive cases, and insufficient testing facilities

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Collaborating with government agencies, healthcare providers, and other enterprises in **supporting their COVID-19 response** by enabling the identification of vulnerable populations at-risk of hospitalization, geographies lacking enough food and medical resources, and adapting to socioeconomic disparity concerns.

COVID-19 Response Sample Case Studies

Mid-Atlantic State

Project Overview: Provide targeted intervention for those with socioeconomic and health risks for COVID-19 complications. Example interventions include personal protective equipment (PPE) distribution, outreach, and set-up of new testing sites in vulnerable communities.

Driving Questions

1. Who has elevated social and health risk factors for complications from COVID-19?
2. How do we tailor interventions for most vulnerable populations?
3. Which communities have highest need for distribution of face masks and other PPE?

Midwest State

Project Overview: Understand who across the state falls within the most vulnerable populations to target COVID-19 interventions (i.e. where to allocate testing and medical resources), and recovery (i.e. how to enhance treatment and quarantine protocols).

Driving Questions

1. What new quarantine and clinical care protocols are needed?
2. Which high-risk communities need COVID-19 Risk Mitigation Kits, and how do we support self-quarantine?
3. How do we create community-based telehealth programs for technologically marginalized groups?

Metropolitan City Food Insecurity

Project Overview: Focus on food insecurities and food deserts for communities recently affected by COVID-19 and those who are likely to be impacted by the secondary wave of disparities related to COVID-19, such as unemployment.

Driving Questions

1. Which vulnerable populations have limited access to healthy food?
2. Which high-risk communities have limited access to public transportation at the Census Tract level?
3. Who is likely going to be impacted by unemployment due to COVID-19?

Project Outcomes:

- Identification of individuals unable to sustain home-quarantine or at-risk of hospitalization
- Optimal allocation of medical resources (e.g. personal protective equipment)
- Visibility into the intersection of vulnerable populations with economic and social disparities
- On-going surveillance and proactive response to new phases of the pandemic

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1. **Stand-up in 24-48 hours, any State**
2. **Leverage a Flexible Platform/Integrate with Other Datasets**
3. **Eligible for Federal Reimbursements (up to 100%)**

For further information or to see a demonstration of Health360 on *your state's population*, please contact:

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