Risk-Based Decision Support Tools

October 22, 2020
Recap: Project Goals

Create **data-driven decision support tools to provide an additional input** into the decisions being made to safely reopen the PA economy and achieve the following policy goals:

- **Minimize the diffusion** of COVID-19
- **Maximize return to work** and revitalize the economy
- **Limit long-term economic impact** of COVID-19 & the shut down
- **Achieve equitable outcomes** for vulnerable residents
Our Vision: Suite of Data-driven Decision Support Tools

Inputs: Data & Priorities

- Current version primarily relies on Public Data from Census, BLS, BEA, and DOH
  (Future Versions will hopefully use data from State Agencies: UI Claims, Wage Records, Revenue, SNAP, TANF, Medicaid, Revenue, DCED, Health
  Health and Human Services Forecasts/Models from Partners (Pitt, Penn, and other partners)
  State Priorities & Policy Goals

Decisions we plan to inform

- Which industries can safely open, in which counties, and under what conditions?
- What will be the health risks and economic impact associated with opening an industry?
- Which industries can re-engineer workflows?
- What impact will this have on vulnerable workers & businesses?

Outputs we seek

- Health and Economic Monitoring Dashboard
- Health Risks
- Economic Impact
- Impact on Equity
- Evaluating the Impact of policy interventions
Risk-Based Approach

We take a wide variety of risks associated with re-opening a set of industries in a county or region. In addition to what we show in this presentation using public data, we are exploring and developing additional ones including:

- Face-to-Face Contact Risk (in workplaces)
- Nursing Home Spread Risk
- Customer Contact risk
- Supply Chain Risk
- Business Resilience risk
- Unemployment Risk
- Social Service Benefits Risk
- Equity Risk
How we intend the current risk indices to be used

- The current version primarily relies on public data sources to generate risk indices along a variety of dimensions.

- The scores and risk indices do not correspond to “open” or “not open” recommendations.

- These indices are provided to the State as one of many inputs they consider in making decisions affecting the “Process to Reopen Pennsylvania”.
Risk Indices

**COVID Case Risk**: # of reported COVID-19 cases / population of area

**Commute Risk**: Additional # of infected workers commuting from neighboring counties / Total # of workers in the county

**ICU Capacity Risk**: # of 60+ year olds in area / # of unoccupied ICU Beds

**Population Density Risk**: Population of Region / Area of Region

**Population Age Risk**: % of population in area > 60 yr old

**Re-Opening Contact Risk**: % of workers in an area employed in currently “physically closed” industry sectors
### County Risk Indices

#### SouthEast

<table>
<thead>
<tr>
<th></th>
<th>Montgomery</th>
<th>Bucks</th>
<th>Chester</th>
<th>Lancaster</th>
<th>Delaware</th>
<th>Philadelphia</th>
<th>Berks</th>
<th>Schuylkill</th>
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</thead>
<tbody>
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<td>Risk</td>
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</tbody>
</table>

**Legend:**
- Orange: 14-Day COVID-19 Cases Risk
- Deep Red: Commute Risk
- Dark Blue: ICU Capacity Risk
- Green: Population Density Risk
- Purple: Population Age Risk
# County Risk Indices

## SouthCentral

<table>
<thead>
<tr>
<th>Fulton</th>
<th>Franklin</th>
<th>Adams</th>
<th>Cumberland</th>
<th>York</th>
<th>Dauphin</th>
<th>Bedford</th>
<th>Mifflin</th>
<th>Blair</th>
<th>Lebanon</th>
<th>Huntingdon</th>
</tr>
</thead>
</table>

### Risk Index
- Orange: 14-Day COVID-19 Cases Risk
- Red: Commute Risk
- Blue: ICU Capacity Risk
- Green: Population Density Risk
- Purple: Population Age Risk
County Risk Indices

NorthEast

Wayne  Monroe  Wyoming  Carbon  Lehigh  Northampton  Susquehanna  Luzerne  Lackawanna

Risk Index
- 14-Day COVID-19 Cases Risk
- Commute Risk
- ICU Capacity Risk
- Population Density Risk
- Population Age Risk

Legend:
- Orange: 14-Day COVID-19 Cases Risk
- Red: Commute Risk
- Blue: ICU Capacity Risk
- Green: Population Density Risk
- Purple: Population Age Risk

Risk levels are represented by different colors for each county and risk category.
County Risk Indices

Risk Index
- 14-Day COVID-19 Cases Risk
- Commute Risk
- ICU Capacity Risk
- Population Density Risk
- Population Age Risk

Risk

<table>
<thead>
<tr>
<th>Warren</th>
<th>Jefferson</th>
<th>Erie</th>
<th>Clearfield</th>
<th>McKean</th>
<th>Crawford</th>
<th>Clarion</th>
<th>Mercer</th>
<th>Venango</th>
<th>Elk</th>
<th>Lawrence</th>
</tr>
</thead>
</table>

[Graph showing various risk indices for different counties]
## County Scorecard

<table>
<thead>
<tr>
<th>Measure Values</th>
<th>NorthEast</th>
<th>NorthCentral</th>
<th>NorthWest</th>
<th>SouthEast</th>
<th>SouthCentral</th>
<th>SouthWest</th>
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<td>14-Day COVID-19 Cases Risk</td>
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<tr>
<td>Population Density Risk</td>
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<td>Population Age Risk</td>
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</tbody>
</table>

### How we intend these risk indices to be used

- The risk indices and colors are relative risks and do not correspond to “open” or “not open” recommendations.
- These indices are provided to the State as one of many inputs they consider in making decisions affecting the “Process to Reopen Pennsylvania”