Risk-Based Decision Support Tools

June 17, 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

#### SouthCentral

<table>
<thead>
<tr>
<th>County</th>
<th>Risk Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mifflin</td>
<td>14-Day COVID-19 Cases Risk</td>
</tr>
<tr>
<td>Blair</td>
<td>Commute Risk</td>
</tr>
<tr>
<td>Fulton</td>
<td>ICU Capacity Risk</td>
</tr>
<tr>
<td>Huntingdon</td>
<td>Population Density Risk</td>
</tr>
<tr>
<td>Perry</td>
<td>Population Age Risk</td>
</tr>
<tr>
<td>York</td>
<td>Re-Opening Contact Risk</td>
</tr>
<tr>
<td>Adams</td>
<td>14-Day COVID-19 Cases Risk</td>
</tr>
<tr>
<td>Bedford</td>
<td>Commute Risk</td>
</tr>
<tr>
<td>Cumberland</td>
<td>ICU Capacity Risk</td>
</tr>
<tr>
<td>Franklin</td>
<td>Population Density Risk</td>
</tr>
<tr>
<td>Juniata</td>
<td>Population Age Risk</td>
</tr>
<tr>
<td>Dauphin</td>
<td>Re-Opening Contact Risk</td>
</tr>
<tr>
<td>Lebanon</td>
<td>14-Day COVID-19 Cases Risk</td>
</tr>
</tbody>
</table>

#### Risk Index Colors
- Orange: 14-Day COVID-19 Cases Risk
- Red: Commute Risk
- Dark Blue: ICU Capacity Risk
- Green: Population Density Risk
- Purple: Population Age Risk
- Brown: Re-Opening Contact Risk
County Risk Indices

SouthEast

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

Risk Index:
- 14-Day COVID-19 Cases Risk
- Commute Risk
- ICU Capacity Risk
- Population Density Risk
- Population Age Risk
- Re-Opening Contact Risk
County Risk Indices

14-Day COVID-19 Cases Risk
Commute Risk
ICU Capacity Risk
Population Density Risk
Population Age Risk
Re-Opening Contact Risk
## County Risk Indices

### NorthEast

<table>
<thead>
<tr>
<th>County</th>
<th>Wayne</th>
<th>Wyoming</th>
<th>Pike</th>
<th>Monroe</th>
<th>Luzerne</th>
<th>Lackawanna</th>
<th>Northampton</th>
<th>Carbon</th>
<th>Lehigh</th>
<th>Susquehanna</th>
</tr>
</thead>
</table>

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

### Diagram

- 14-Day COVID-19 Cases Risk: Red
- Commute Risk: Blue
- ICU Capacity Risk: Green
- Population Density Risk: Purple
- Population Age Risk: Pink
- Population Contact Risk: Brown
- Re-Opening Contact Risk: Orange
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”