School scenarios

• Normal school

• All students on-site with enhanced safety measures
  – Transmission at school is reduced by a factor of 2 due to enhanced safety measures

• Hybrid (with enhanced safety measures)
  – Students: 2 days per week, teachers: 4 days per week
  – Some outside of school congregation (~20%)
  – Transmission at school is reduced by a factor of 3 due enhanced safety measures and space to spread out

• On-line High School, all others on-site (with enhanced safety measures)
  – No outside of school congregation
  – Transmission at school is reduced by a factor of 2.7 due enhanced safety measures and space to spread out

• On-line only is presumed equivalent to present no-school situation
Specifics of Enhanced Safety Measures:

Assumptions of factors of 2-3 reduction in transmission are based on PPE use, ventilation, distancing, and good hygiene reducing transmission

• Face shields
  – block large particles (~10-1000 microns) emitted in sneezes and cough
  – some protection for nose, mouth and eyes

• Properly worn cloth masks
  – block large particles and some of the small particles (small is < a few microns) emitted when breathing and talking
  – protects nose and mouth

• Wrap-around eye protection
  – Exposure thru the eyes is not well quantified, but could be significant (published for SARS-1)

• Air handling, ventilation
  – critical to removing the smallest particles (< one micron)
  – https://city.umd.edu/covid-19 – an interesting animation of air flow and air-borne contamination (one example is a clean-room style design)
  – https://tinyurl.com/covid-esimator - Section on building ventilation describes school rooms

Pre-symptomatic people transmit; the small particles emitted while breathing and speaking need to be removed, or filtered.
Specifics of Enhanced Safety Measures (continued):

Assumptions of factors of 2-3 reduction in transmission are based on PPE used, ventilation, distancing, and good hygiene reducing the transmission

• **Hygiene/cleaning**
  – Coronavirus can survive for days on some surfaces (N.B. bathrooms!)

• **Distancing**
  – Distance should be maintained even when wearing masks
  – Distancing is particularly important when masks are off (eating)

• **Potentially sick children and teachers/staff must stay home**
  – Will student and teacher absences be handled differently?
  – Will districts have large available substitute pool?
  – Education of parents, teachers/staff

• **Rapid Contact Tracing of any sick children/staff/teachers**
Overview of results: Statewide