CovidReduce – Providing tools giving you agency to reduce infections

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- We lead a growing team of over 30 people from five countries to provide you infection reduction tools during the COVID Pandemic.

- We provide tools to our campus, community, nation, and the world at no cost for software and low cost for hardware.

Web Site
CovidReduce.org

Videos
4 Tool short briefs
Tool presentations
How to do it tutorials
Technical detail of methods
After 11 months of COVID news we have heard thousands of stories, conflicting recommendation and changing science.

- COVID is airborne it spreads predominantly by virus particles that can be in the air for over an hour in indoor settings. (letter 239 scientists Morawska 2020).

- You can reduce infection over **100x** by masking, ventilation, distancing and hand hygiene.

Infection reduction is **not easy**, that is why we provide you four tools to help.
We all want to keep family safe and have a good social and economic life.

The COVID pandemic is projected to kill more people in the US than World War II (Covid 511k¹ Feb 2021 versus 419k WWII) [Nature Medicine IHME COVID-19 Forecasting Team]

We do not want your family members or ours in to be in a flags to be in this set of lost lives.

The CovidReduce tools will quantify your risk and guide you to reduce it.

You can gain knowledge and agency to reduce your risk this week.
Life involves risk we take actions to reduce risk

- You can reduce family risk if you know the relative risk of actions and make smart choices.
- Driving is a risk most of us take. Wearing a seat belt can reduce risk 45% [CDC seat belt benefit]

**Wearing high quality masks can reduce infection risk 99%.**

- Intuition and actual risks can mismatch. Picking grandma up in your car if you are a asymptomatic spreader is a greater risk than having her sky dive.
- If you find it surprising that driving grandma to your home during COVID is more dangerous than sky diving, reflect that it is worth learning where the risks really are and reducing the big risks.

**We can not reduce risk to zero, but in most cases you can dramatically reduce risk and both economic and social harm.**

- Seatbelt Wearing Reduces Driving fatality risk 45%
- High Quality Mask Wearing Reduces infection risk 99%
- Fatality rate for 75-84 year old if infected person present for an hour car ride 0.4% no masks.
- Sky dive\(^5\) fatality rate 0.0006% per dive

\(^2\) Rate infection AIRC 8% x fatality rate if infected (4.3%)\(^4\) = 0.4%

\(^3\) Sky diving fatality rate per jump.

\(^4\) Fatality rate COVID infected age 75-84 4.3% Statista report

\(^5\) Skydiving statistics
We provide four tools to reduce COVID Infections

1. Scenario infection reduction spreadsheets & planners

2. HealthMonitor App Android/iPhone tool

3. MaskTester Efficiency & User Fit Training

4. Educator school and home learning activities

Classroom Experiments

Mask Tester measure Protection Factor with emailed report of quality and data base of mask PF.

Android & IPhone Health App to track and reduce your risk
**Goal** – Quantify typical activity infection risk and plan to reduce the risk 100x applying affordable actions.

- Tools include quantitative infection modeling, AI empowered advice, and automatic presentation and report writing tools.
- You can look at and adapt scenarios including:
  - Holiday with family
  - Elementary and high school day
  - College student day
  - Day Care
  - Medical visit (oncology) patient day and staff day

These concepts and tools can be learned and used quickly by people with basic web or spreadsheet skills.

**Tool 1: Scenario infection reduction spreadsheets & planners**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Infection Risk</th>
<th>Improvement over Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Car trips cloth</td>
<td>49%</td>
<td>99.2%</td>
</tr>
<tr>
<td>Hangout &amp; Meal Prep</td>
<td>0.2%</td>
<td>124x better</td>
</tr>
<tr>
<td>Shower Daily Prep non</td>
<td>0.2%</td>
<td>124x better</td>
</tr>
<tr>
<td>Sleep Shared low Vent</td>
<td>0.2%</td>
<td>124x better</td>
</tr>
<tr>
<td>Cumulative</td>
<td>0.46%</td>
<td></td>
</tr>
<tr>
<td>Base Day</td>
<td>0.56</td>
<td>52%</td>
</tr>
<tr>
<td>Improved</td>
<td>0.00</td>
<td>0.46%</td>
</tr>
</tbody>
</table>

*Graph showing infection risk improvement over base day.*
Goal – to allow individuals to track and reduce their infection risk on a daily basis.

- **Give daily and event infection quanta scores** based on room/store/office coding with both user entry and data base look up
- **Code data by GPS, beacons, CO2 monitoring and people flow counters**
- **Education of infection pragmatic risk reduction** based on your history
- **Community user studies**
- **Privacy of all data**

Your can check and manage you quanta risk. Your data never leaves your phone unless you allow it.

Application screens:
- Daily Quanta Risk
- Entering coding building/room
- Campus building density data
- Entrance passage

- Educational videos
- Support groups to motivate risk reduction
- Data for organization on flow, high load areas

Tool 2: HealthMonitor App Android/iPhone tool
Goal – to increase mask protection 100x

- Make available low cost mask tester for schools, universities and businesses
- Provide testing of mask virus protection factor and breathability
- Provide 5 minute test of masks for droplet blockage for 0.3 -10 micron sizes
- Do fit training and quantification of quality of mask worn by users.
- Provide instruction and testing for wait and reuse of masks
- Provide lists of well performing masks

Find out how well does the mask you wear protect you. Use masks that can be trusted and verified on every batch.
Goal – Provide a evidence based undertaking of how a virus can spread in the air and infect people to school children in science classes and general public with videos and hands on sinktop and classroom activates for in person and virtual instruction.

- Five 45 minute classes with students collecting data and evaluation of safety for eight grade through high school
  1. Basics of Airborne infection control overview, concepts and key past results
  2. Airborne spread desk top/sinktop simulator match computational fluid dynamics
  3. Airborne spread in classroom and outside, experiments CO2, aerosol, odor, and smoke experiments in masking and ventilation
  4. Mask protection factors, fitting and reuse and Day infection reduction, planning how to reduce infection risk (quanta)

  5. School/home assessment, monitoring quanta risk, and cost benefit tradeoffs and protection of vulnerable

Provide lesson plans, videos, software, educational kits for schools and home.
More Videos and Scenarios

- **Web based scenario analysis tutorial** so you can generate and change scenarios (10 minutes)

- **View Planned Scenario releases of interest:**
  - Holiday
  - Elementary and high school

- **Spreadsheet scenario generation for your organization** with output Power Point report and technical report for your school, daycare, medical center, office, etc. (20 minutes)

- **Technical talk** about the methods involved (50 minutes)

- **More Scenarios**
  - College student day
  - Day Care
  - Office Day
  - Shopping
  - Medical visit (oncology)
  - Restaurant eating
  - Air Travel
  - Bus Travel
  - Car Travel

(These releases mid December)

#2. HealthMonitor App Android/iPhone tool: Overview Detail Features

#3. MaskTester Efficiency & User Fit Training: Overview FitTraining

#4. Educator school and home learning activities: Overview Lesson Videos

Free software & Low cost hardware Local and worldwide
You can stop here or continue

CovidReduce Holiday Scenario (15 minutes)  
(starts in 10 seconds)

For Details go to CovidReduce.org

If you are interested in helping in our effort please send email to CovidReduce@gmail.com with subject line “Want to Help”