COVID-19, Vaccination & a Return to a New Normal

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Where We Are Today

- **World**
  - 172 Million cases
  - 3.6 Million deaths

- **USA**
  - 34 Million cases
  - >610,000 deaths

Data updated May 26, 2021
https://www.worldometers.info/coronavirus/
Prevention: Bottom Line

Multiple public health measures layered together are needed to slow this virus down
Why Get Vaccinated?

Protect yourself:

- Vaccines **reduce the risk of infection** (asymptomatic & symptomatic)
- Vaccines **prevent hospitalization & death** from COVID-19

Protect others:

- Vaccines **reduce transmission**
- Vaccinated people **clear infection** more quickly & shed less virus than unvaccinated people

Prevention

The Swiss Cheese Respiratory Virus Defense
Recognizing that No Single Intervention is Perfect

Each intervention (layer) has failings (holes)
Multiple layers reduce their impact

SARS-CoV-2

Vaccination is the single most important intervention we can apply!!

You or me

Figure drawn by Dr. Ian M. Mackay (2020)
https://twitter.com/MackayIM/status/1319901144836026368/photo/1
Evidence to Support the Swiss Cheese Model

Large study of >500,000 households examining relationships among in-person schooling, mitigation efforts & COVID-19 infections of adults at home

Do mitigation factors* reduce the risk of an adult at home getting COVID-19 if their kids attend in-person school?

*Things like mask wearing, spacing of desks, symptom screening, same/many teachers, outdoor instruction, reduced class size, closing cafeterias, etc.
Evidence to Support the Swiss Cheese Model

**Results**

- Living with a child doing in-person schooling increased the risk for an adult at home getting COVID-19 by about 30-40%.
- Each separate mitigation factor reduced this risk by 5-10%.
- Daily symptom screening, teacher mask mandate & cancelling extra-curricular activities assoc. with greatest risk reduction.
- **When 7 or more mitigation measures were in place the association between in-person schooling & COVID-19 disappeared.**

The Future

- **Global control** of COVID-19
- **Surveillance**: global, sequencing, data sharing
- **Testing**: cheap, available, frequent, self-administered
- **Treatment**: possibly closer to oral antivirals
- **Vaccines**: targeting variants; children; boosters
- “**Long COVID**”: better understanding/treatments/preventions
- Improve **public health** systems
- Improve **population health** to reduce inequities & disparities