Why does COVID-19 testing in K-12 schools still matter?

The world leader in serving science
Welcome to Today’s Session

Why does COVID-19 testing in schools still matter?

Today’s speakers:

Mara Aspinall
Professor of Practice, Biomedical Diagnostics
Arizona State University
Managing Director, Health Catalysts Group

Karen Cormier
Senior Marketing Manager, Genetic Testing
Solutions Group, Thermo Fisher
Introducing…

Mara Aspinall

*Professor of Practice, Biomedical Diagnostics Arizona State University*

*Managing Director, Health Catalysts Group*
Agenda

- The Good, Bad and the Hopeful
- School COVID Safety
  1. Vaccination
  2. Mitigation
  3. Testing
- School Funding Options for Testing
- Introducing the ReadyCheckGo Testing Program
The Good, the Bad and the Hopeful

- **The Good**
  - New cases, hospitalizations and deaths continue to decrease from Delta variant highs
  - ~87% of US teachers are vaccinated
  - ~60% of 12–17-year-olds are vaccinated

- **The Bad**
  - Only 20% of K-12 schools are testing for COVID-19
  - 30%+ of US adults are still not vaccinated
  - COVID-19 has now surpassed the 1918 pandemic in total deaths in the US

- **The Hopeful**
  - Vaccines for 5–11-year-olds to be reviewed on October 26th
  - Two COVID treatments are being reviewed for EUA
The Tide has turned...again...now for the better


| Cases          | 97,933 | -20% | 44,269,659 |
| Tests          | 1,619,960 | -9%  | —           |
| Hospitalized   | 69,610  | -21% | —           |
| Deaths         | 1,770   | -14% | 712,822     |

Reported-Case Fatality Rate (Deaths/cases 1 week prior)

7.1%  1.8%  1.3%  1.3%
Agenda

- The Good, Bad and the Hopeful
- School COVID Safety
  1. Vaccination
  2. Mitigation
  3. Testing
- School Funding Options for Testing
- Introducing the ReadyCheckGo Testing Program
Delta (δ) is now 99.9% US COVID-19 Cases

Spreads 3x faster than the original virus
Powering the surge among unvaccinated

Time to Dominance

α (B.1.1.7) 3 months

δ (B.1.617) 1 month

Source: [https://covid.cdc.gov/covid-data-tracker/#variant-proportions](https://covid.cdc.gov/covid-data-tracker/#variant-proportions), as of 10/9/2021
Younger Age Groups are Less Vaccinated, and Begin to Catch up

Source: CDC COVID data tracker, data October 9th, 2021
Vaccination Remain Highly Effective as Delta Dominates

At current incidence, 35,000 symptomatic infections per week among 162 million vaccinated Americans

Source: McMorrow Presentation, CDC, 7/29/21
Agenda

- The Good, Bad and the Hopeful
- School COVID Safety
  1. Vaccination
  2. Mitigation
  3. Testing
- School Funding Options for Testing
- Introducing the ReadyCheckGo Testing Program
Mitigation Strategies

**All schools**
- Health checks / respiratory etiquette
- Handwashing
- Classroom / school building hygiene

**Some schools**
- Physical distancing 6 / 3 feet
- Surveillance / monitoring through testing
- Masking
Current School Mask Policy Around the Country

- **42.3% Masks required** (school-wide state mandate)
- **2.7% Mask mandates banned** (local districts do NOT have flexibility to mandate masks)
- **30.7% No mask mandate but allows local flexibility** (state lifted mask mandate; local districts have flexibility to mandate masks)
- **24.3% Mask mandate ban overturned** (legal challenges to state-level mandate ban; some districts requiring masks)

Source: Burbio – Oct 8, 2021
CDC Mask Guidance

UPDATE

Given new evidence on the B.1.617.2 (Delta) variant, CDC has updated the guidance for fully vaccinated people. CDC recommends universal indoor masking for all teachers, staff, students, and visitors to K-12 schools, regardless of vaccination status. Children should return to full-time in-person learning in the fall with layered prevention strategies in place.

CDC – August 4, 2021

Schools and Child Care Programs
Plan, Prepare, and Respond

Updated July 9, 2021   Languages   Print
2021/2022 School Disruptions

2,238 school closures across 561 districts in 45 states

Source: Burbio – Oct 8, 2021
School Closures Due to COVID Outbreaks

Closure Start Week

- 8/1/2021
- 8/8/2021
- 8/15/2021
- 8/22/2021
- 8/29/2021
- 9/5/2021
- 9/12/2021
- 9/19/2021
- 9/26/2021
- 10/3/2021
Agenda

- The Good, Bad and the Hopeful
- School COVID Safety
  1. Vaccination
  2. Mitigation
  3. Testing
- School Funding Options for Testing
- Introducing the ReadyCheckGo Testing Program
Test to Stay – Testing Can Help Keep Kids in School

162 UK High Schools
13,500 Staff
186,500 Students
11,800 contacts

Control Group
76 UK High Schools
10 days Quarantine
• 338 index cases
• 5097 contacts
• 22,466 lost school days
• 1.8% days lost

Intervention Group
86 UK High Schools
5 days daily antigen tests
• 450 index cases
• 6721 contacts
• 22,378 lost school days
• 1.47% days lost

Source: adapted from data in Young et al, A cluster randomized trial of the impact of a policy of daily testing for contacts of COVID-19 cases on attendance & transmission in UK secondary schools
Test to Stay – In Action

- California
- Illinois
- Massachusetts
- Utah
- Vermont
- Georgia – Marietta
- Ohio – Lebanon City
- Michigan – Bay County
Mitigation Strategies

All schools

- Health checks / respiratory etiquette
- Handwashing
- Classroom / school building hygiene

Some schools

- Physical distancing 6 / 3 feet
- Surveillance / monitoring through testing
- Masking

Regular testing is critical to supplement other mitigation strategies
Regular Testing in School Can Reduce Infection

Evidence from Mathematica, supported by The Rockefeller Foundation, found that weekly testing of all students, teachers and staff can reduce in-school infections by an estimated 50%.

Cumulative COVID-19 infections among students and staff in high schools

% of students and staff infected compared to base case (no screening)

No screening

Screening for teachers and staff

Universal screening

Weekly screening reduced in-school infections by ~50%
School Prevalence Rates are 10x Lower Than Community Rates

Aggregate data across multiple schools and their contiguous communities shows average school positivity is 0.25% to 0.5% while surrounding community positivity is ~ 7.23%*

CDC and others support a return to in-person schooling, citing low prevalence rate in schools as a key part of the justification

0.53% positivity rate in K-12 schools
5.60% positivity rate in community
0.5% positivity rate among teachers
4% positivity rate across the state

Disclaimer: It is important to note that community testing is an opt-in process, and the actual community positivity may be different
*Calculated by aggregating data collected by Ginkgo, CIIC Health and JCM Analytics

Sources: New York State Dashboard, NYC Dept. of Education Testing Report, USA Today, CDC
mara.aspinall@healthcatalysts.com Do Not Reproduce Without Permission
Coronavirus Testing Program Considerations

When implementing a coronavirus testing program, you should consider four key requirements for successful screening testing:

**Confidence in Results**
- What accuracy is acceptable?
- What is the school’s risk tolerance?

**Daily Testing Volume**
- How many students and staff are you testing? And how often?
- How will you align with guidance while minimizing costs?

**Time to Results**
- How soon are test results needed?
- How will reporting and monitoring be handled and managed?

**Resources and Expertise**
- What resources and expertise are available to guide strategy, decisions and manage a testing program?
Early Detection of Coronavirus using PCR tests

PCR acts as an early warning to remove infected individuals while the amount of virus is low.

- **PCR Test Detection**: PCR can detect the virus **BEFORE** the virus is transmissible and able to infect others.

- **Antigen Test Detection**: Antigen can detect the virus when **symptomatic** and at or near peak infection.

### Virus Incubates (No Symptoms) → Virus Transmissible (Symptomatic or Asymptomatic)

#### Course of Infection Over Time

- **Amount of Virus** → **Amount of Virus**

**Seattle WA community screening**

- **ASYMPTOMATIC**: With similar levels of virus
- **CHILDREN**: 38%

Identifying positives early helps reduce the risk of virus being brought into the school.

*Source: [1] Chung et al. Comparison of Symptoms and RNA Levels in Children and Adults With SARS-CoV-2 Infection in the Community Setting, JAMA Pediatrics 6/2021*
Agenda

- The Good, Bad and the Hopeful
- School COVID Safety
  1. Vaccination
  2. Mitigation
  3. Testing
- **School Funding Options for Testing**
- Introducing the ReadyCheckGo Testing Program
## School Federal Funding Options

<table>
<thead>
<tr>
<th>K-12 Schools Covered</th>
<th>ELC National Testing Action Program (NTAP)</th>
<th>Coordination Hubs Operation: Expanded Testing (ET)</th>
<th>ESSER</th>
</tr>
</thead>
</table>

**Focus: Settings Covered?**

- All K-12 Schools and Summer Programs
- Underserved Populations including Schools and Congregant Settings
- Broad education related issues

**Funding**

- $10 billion (CDC to State, large local & territories' Depts of Health)
- $650 million (HHS / DOD to 4 regional Coordination Hubs)
- Majority of funds directly to school districts

**Timing**

- April 2021 – July 2022
- May – June 2022
- Funds allocated

**Test Technology Choice**

- Technology agnostic: Up to schools / districts / States
- Input from HHS / DoD and schools / districts – may differ between hubs
- School / district decision

*Updated October 11, 2021*

Source(s): Rockefeller Foundation, HHS, Open & Safe Schools.org, OESE
Over $10B is available to expand COVID-19 testing in schools

<table>
<thead>
<tr>
<th>State</th>
<th>Funds available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>$147,681,528</td>
</tr>
<tr>
<td>Alaska</td>
<td>$22,033,777</td>
</tr>
<tr>
<td>American Samoa</td>
<td>$1,487,904</td>
</tr>
<tr>
<td>Arizona</td>
<td>$219,231,387</td>
</tr>
<tr>
<td>Arkansas</td>
<td>$90,894,777</td>
</tr>
<tr>
<td>California</td>
<td>$887,715,802</td>
</tr>
<tr>
<td>Colorado</td>
<td>$173,450,305</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$107,384,696</td>
</tr>
<tr>
<td>Delaware</td>
<td>$29,329,294</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>$21,256,814</td>
</tr>
<tr>
<td>Florida</td>
<td>$646,898,907</td>
</tr>
<tr>
<td>Georgia</td>
<td>$319,791,575</td>
</tr>
<tr>
<td>Guam</td>
<td>$5,075,137</td>
</tr>
<tr>
<td>Hawaii</td>
<td>$42,645,370</td>
</tr>
<tr>
<td>Idaho</td>
<td>$53,825,522</td>
</tr>
<tr>
<td>Illinois</td>
<td>$300,527,799</td>
</tr>
<tr>
<td>Indiana</td>
<td>$202,771,135</td>
</tr>
<tr>
<td>Iowa</td>
<td>$95,029,161</td>
</tr>
<tr>
<td>Kansas</td>
<td>$87,747,589</td>
</tr>
<tr>
<td>Kentucky</td>
<td>$134,564,120</td>
</tr>
<tr>
<td>Louisiana</td>
<td>$140,019,396</td>
</tr>
<tr>
<td>Maine</td>
<td>$40,487,06</td>
</tr>
<tr>
<td>Marshall Islands</td>
<td>$2,346,310</td>
</tr>
<tr>
<td>Maryland</td>
<td>$182,092,917</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>$207,598,811</td>
</tr>
<tr>
<td>Michigan</td>
<td>$330,799,236</td>
</tr>
<tr>
<td>Micronesia</td>
<td>$3,084,238</td>
</tr>
<tr>
<td>Minnesota</td>
<td>$169,862,951</td>
</tr>
<tr>
<td>Mississippi</td>
<td>$89,640,149</td>
</tr>
<tr>
<td>Missouri</td>
<td>$184,856,322</td>
</tr>
<tr>
<td>Montana</td>
<td>$32,191,069</td>
</tr>
<tr>
<td>Nebraska</td>
<td>$58,263,420</td>
</tr>
<tr>
<td>Nevada</td>
<td>$92,772,788</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>$40,953,829</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$267,527,208</td>
</tr>
<tr>
<td>New Mexico</td>
<td>$63,155,461</td>
</tr>
<tr>
<td>New York</td>
<td>$334,830,878</td>
</tr>
<tr>
<td>North Carolina</td>
<td>$315,895,947</td>
</tr>
<tr>
<td>North Dakota</td>
<td>$22,952,934</td>
</tr>
<tr>
<td>Northern Marianas</td>
<td>$1,548,143</td>
</tr>
<tr>
<td>Ohio</td>
<td>$352,069,960</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>$119,182,026</td>
</tr>
<tr>
<td>Oregon</td>
<td>$127,036,170</td>
</tr>
<tr>
<td>Palau</td>
<td>$653,593</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>$337,878,400</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>$96,192,497</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>$31,907,434</td>
</tr>
<tr>
<td>South Carolina</td>
<td>$155,076,741</td>
</tr>
<tr>
<td>South Dakota</td>
<td>$26,645,495</td>
</tr>
<tr>
<td>Tennessee</td>
<td>$205,691,372</td>
</tr>
<tr>
<td>Texas</td>
<td>$803,456,353</td>
</tr>
<tr>
<td>Utah</td>
<td>$96,561,883</td>
</tr>
<tr>
<td>Vermont</td>
<td>$18,794,243</td>
</tr>
<tr>
<td>Virgin Islands</td>
<td>$3,198,692</td>
</tr>
<tr>
<td>Virginia</td>
<td>$257,085,647</td>
</tr>
<tr>
<td>Washington</td>
<td>$229,356,843</td>
</tr>
<tr>
<td>West Virginia</td>
<td>$53,978,589</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>$175,368,857</td>
</tr>
<tr>
<td>Wyoming</td>
<td>$17,431,937</td>
</tr>
<tr>
<td>New York City</td>
<td>$251,100,840</td>
</tr>
<tr>
<td>Los Angeles County</td>
<td>$302,372,980</td>
</tr>
<tr>
<td>Chicago</td>
<td>$81,141,236</td>
</tr>
<tr>
<td>Houston</td>
<td>$69,885,356</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>$47,711,231</td>
</tr>
</tbody>
</table>

Source: HHS.org
Distribution of $10B Government Funding for School Testing

To fund or provide materials (e.g., test kits, PPE, staffing, etc.) and services (e.g., sample collection, laboratory testing, etc.) to increase screening testing in all K-12 schools (public or private) within the recipient’s jurisdiction.

85%

For coordination, management, technical assistance, monitoring, and data collection and reporting activities to support K-12 screening testing programs.

NEW August 10, 2021
Monies can be also used for family & community testing as well as diagnostic & screening and classroom air filtration systems

Source: CDC COVID-19 Funding
mara.aspinall@healthcatalysts.com Do Not Reproduce Without Permission
Vaccines do not eliminate the need for sustained vigilance

Vaccine efficacy
No vaccination is 100% effective
Identify, quarantine and treat those with COVID-19

Duration of protection
Duration of protection unknown beyond 6 months
No long-term data have yet been reported

Non-vaccinated
Not everyone will be vaccinated
Adult hesitancy and (currently) no vax for children < 12 years

Mutations
Can impact vaccine efficacy

Testing is essential to help avoid outbreaks

Agenda

- The Good, Bad and the Hopeful
- School COVID Safety
  1. Vaccination
  2. Mitigation
  3. Testing
- School Funding Options for Testing
- Introducing the ReadyCheckGo Testing Program
Introducing...

Karen Cormier
Senior Marketing Manager, Genetic Testing Solutions Group, Thermo Fisher
Important Considerations for Testing in K-12 Schools

An effective testing program should....

Empower teachers to focus on education
Help provide a healthy learning environment for students, teachers and staff with minimal disruption to the day

Help maximize in person learning
Avoid unnecessary quarantines to maximize student attendance

ReadyCheckGo provides....

Easy implementation
Simple software to manage registration, consent and reporting results
Less time processing tests in school

PCR based, high sensitivity results
Proactive, PCR-based screening (99% accuracy) identifies infections early and helps prevent exposure
Integrating Experienced Teams to Facilitate In-person Learning

Schools focus on learning...

...let us focus on the rest.

Samples analyzed by certified clinical labs

Powered by ThermoFisher Scientific

ONSITE TESTING

Highly sensitive, PCR testing solutions

Powered by ThermoFisher Scientific

LAB-BASED TESTING

Schools trained and registered to collect and ship samples

TEACHING / CHILD DEVELOPMENT

USER EXPERIENCE / DATA MANAGEMENT

Easy registration, program management & reporting through Color software

Powered by Color

Color
ReadyCheckGo: K-12 Coronavirus Testing Made Easy

From sign up to results, we take care of the logistics

**Simple, seamless process**
- Bilingual consent & registration
- Comfortable self-swab kits
- Real-time result dashboards

**Robust training & support**
- 24/7 support
- Live & video trainings
- Support and collateral for staff & families

**Light-touch logistics**
- Requires minimal staff
- Simplified kit ordering
- Free ship-back boxes & shipping
Proven Success of ReadyCheckGo Program

17,281 students and staff tested through the ReadyCheckGo Program across 495 schools

Successfully expanded our reach into 516 Chicago Public Schools

10 Texas school districts committed with >95 districts being engaged, representing ~11M students and staff

“I think as we look to the school year and with ever-changing guidelines from the CDC, testing provides has comfort and peace of mind that our students and staff are safe.”

– ReadyCheckGo customer
NEW Literature Available to Affiliates:

Infographic: Why Still Test?

FAQs for Families
Branded and unbranded versions available

Letter Template for Parent Advocacy

Parent-Specific Slides
→ What to know about Delta Variant
→ Confidence in Testing
Reminder: Additional Literature Available to Affiliates

Letter Template: Importance of Testing

3 Educational Articles: Importance of Testing

Flyer: NTAP Summary

FAQs for School Administrators
Social Assets & Web links available to Affiliates

How affiliates can help amplify the message on digital channels

ReadyCheckGo Webpage
To learn more about testing options and the importance of testing

Parent Resource Web Page
Educational resources for parents to learn more about testing

Use to drive to web pages

Social Images + Corresponding Copy
Thank you