T1D, Coronavirus, and School Readiness

Tariq Ahmad, MD
Associate Professor of Pediatrics
Pediatric Endocrinology
UCSF Benioff Children’s Hospital
Oakland
Disclosures

• I have no current or potential conflict of interest in relation to this presentation.

• Sincerest gratitude to Dr. Prachi Singh and Dr. Anne Petru in the Pediatric Infectious Disease Department of UCSF Benioff Children’s Hospital Oakland

• Dr. Fauci, I am not
Goals for today...

• Review the facts about COVID-19
• Understand the relationship between COVID-19 and T1D
• Review the guidelines recommended for safe school re-entry in the age of COVID-19
Why is there so much confusion on school re-openings?

• Federal institutions and national organizations have left it up to state/local districts

• State/local districts look to federal institutions for guidance and criteria to make decisions

• Mixed messaging
  • On morbidity in children – Missouri governor 7/20/2020, “they’re going to get over it”
  • On transmission – President of the US 7/22/2020, “Now, they don’t catch it easily; they don’t bring it home easily. And if they do catch it, they get better fast. We’re looking at that fact.”
What (little) we know...

- There are many types of coronavirus
- This is a new virus (hence the name COVID-19)
- SARS-COV-2 is the name of the virus, COVID-19 is the disease
- Incubation seems to be approximately 14 days
  - In China, children were noted to be 2-10 days
- We don’t know the true prevalence
- As of April 2, 2020, among pediatrics, high risk was considered < 1 yr old, immunocompromised, heart problems, or chronic lung disease (e.g. asthma)
- Testing is not 100% 😊
COVID Testing
Not all diabetes are created equal

- Type 2 diabetes
  - Approximately 90% of all diabetes in the US
  - Mostly found in adults
  - Often associated with other health conditions
    - Overweight
    - Hypertension
    - Hyperlipidemia
    - Obstructive sleep apnea

- Hyperglycemia and obesity can be associated with increased circulation of inflammatory markers
Signs and Symptoms in Kids

- Cough: 36 - 65%
- Fever: 6 - 65%
- Sore throat: 4 - 46%
- Tachypnea/SOB: 4 - 46%
- Headache: 4 - 46%
- Fatigue/Myalgia: 20%
- Diarrhea: 6%
- Rhinorrhea: 2%
- Vomiting: 2%

Qiu et al. Lancet Infectious Diseases; Lu et al. NEJM; Xia et al. Pediatric Pulmonology; Wang et al. Zhonghua Er Ke Za Zhi
Does presentation in children differ from adults?

<table>
<thead>
<tr>
<th>Sign/Symptom</th>
<th>No. (%) with sign/symptom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pediatric</td>
</tr>
<tr>
<td>Fever, cough, or shortness of breath†</td>
<td>213 (73)</td>
</tr>
<tr>
<td>Fever†</td>
<td>163 (56)</td>
</tr>
<tr>
<td>Cough</td>
<td>158 (54)</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>39 (13)</td>
</tr>
<tr>
<td>Myalgia</td>
<td>66 (23)</td>
</tr>
<tr>
<td>Runny nose†</td>
<td>21 (7.2)</td>
</tr>
<tr>
<td>Sore throat</td>
<td>71 (24)</td>
</tr>
<tr>
<td>Headache</td>
<td>81 (28)</td>
</tr>
<tr>
<td>Nausea/Vomiting</td>
<td>31 (11)</td>
</tr>
<tr>
<td>Abdominal pain†</td>
<td>17 (5.8)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>37 (13)</td>
</tr>
</tbody>
</table>

* Cases were included in the denominator if they had a known symptom status for fever, cough, shortness of breath, nausea/vomiting, and diarrhea. Total number of patients by age group: <18 years (N = 2,572), 18–64 years (N = 113,985).
† Includes all cases with one or more of these symptoms.
§ Patients were included if they had information for either measured or subjective fever variables and were considered to have a fever if “yes” was indicated for either variable.
†† Runny nose and abdominal pain were less frequently completed than other symptoms; therefore, percentages with these symptoms are likely underestimates.
Severity of Disease

- Asymptomatic (4-28%)
- Mild (19-51%)
- Moderate (39-65%)
- Severe (0-5%)
- Critical (0-2%)

**Majority of symptomatic children have mild disease**

In U.S.: 0.6 – 2% ICU admission

- Asymptomatic (4-28%)
- Mild (19-51%)
- Moderate (39-65%)
  - Mild pneumonia + Fever, Fatigue, Cough
  - URI symptoms/asymptomatic infection; No abnormal x-ray
  - Severe (0-5%)
  - Critical (0-2%)

Qiu et al. *Lancet Infectious Diseases*; Dong et al. *Pediatrics*; Lu et al. *NEJM*
Why do children have milder disease?

- **Healthier lungs** fewer co-morbidities?

- Different **viral pathogenic pathways**?
  - Other coronaviruses SARS/MERS were also mild in children

- Age-related **differences in ACE2 receptor expression**?
  - Particularly < 10 yo

- Does **prior exposure** to other coronaviruses alter disease course?

- Age-related differences in the immune and inflammatory responses?
Fewer* COVID-19 cases in children worldwide

- In the United States, 2% of confirmed cases of COVID-19 were among persons aged <18 years.
- In China, 2.2% of confirmed cases of COVID-19 were among persons aged <19 years old.
- In Italy, 1.2% of COVID-19 cases were among children aged ≤18 years.
- In Spain, 0.8% of confirmed cases of COVID-19 were among persons aged <18 years.

* Fewer because of shelter in place? Missing asymptomatic?
Still have to be cautious with kids

- Long term sequelae
  - Chronic respiratory problems?
  - Chronic fatigue syndrome?
  - Neurologic sequelae?
  - Blood clots?
  - Heart damage?
- As more kids are released from shelter in place, the numbers may change

T1D and COVID
T1D and COVID

• Current evidence suggests that individuals with well-managed T1D are NOT at higher risk of contracting COVID-19.

• Experts further say that if someone with well-managed T1D does contract COVID-19, they are not necessarily at higher risk of developing serious complications from the disease.

• Those at greatest risk are people with consistently elevated blood sugar levels and those with a second chronic disease (such as heart disease or lung disease).

• Consider use of technologies now more than ever
  • CGM/hybrid closed loops
  • telehealth
COVID-19 is a new disease. Currently there are limited data and information about the impact of underlying medical conditions and whether they increase the risk for severe illness from COVID-19. Based on what we know at this time, people with the following conditions **might be at an increased risk** for severe illness from COVID-19:

- **Asthma (moderate-to-severe)**
- **Cerebrovascular disease (affects blood vessels and blood supply to the brain)**
- **Cystic fibrosis**
- **Hypertension or high blood pressure**
- **Immunocompromised state (weakened immune system) from blood or bone marrow transplant, immune deficiencies, HIV, use of corticosteroids, or use of other immune weakening medicines**
- **Neurologic conditions, such as dementia**
- **Liver disease**
- **Pregnancy**
- **Pulmonary fibrosis (having damaged or scarred lung tissues)**
- **Smoking**
- **Thalassemia (a type of blood disorder)**
- **Type 1 diabetes mellitus**
- **Obesity (body mass index [BMI] of 30 or higher)**
- **Serious heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies**
- **Sickle cell disease**
- **Type 2 diabetes mellitus**
Need more data...

- Among 64 US endo clinics with data up to 5/5/2020 (Ebekozien, OA, et al., Diabetes Care, 2020)
  - 64 patients were described
    - Only 33 were COVID positive and the average age was 25 yo
    - Hyperglycemia was the most frequent finding (45%)
Things to still be aware with T1D in the age of COVID

- T1D ≠ immunocompromised
- Shelter at home can mean changes to your usual BG’s/insulin needs
  - Less active
  - More snacking from boredom
- Delays in supplies from mail
- Any viral illness can still lead to DKA
  - More frequent testing/more insulin needs
- Diabetes medical mgmt. plans and IEP’s should still be filled
- There is still a lot we don’t know
At the end of the day, we are all in this together...
In-Person school is obviously important

- Socialization
- Identification of learning issues
- Food insecurity
- Child care
- AAP has the “goal” of in-person schooling at the start of the school year
The Principles from AAP (no pun intended) on School re-openings – 6/25/2020

- Work with state/local authorities
- ”Flexible and nimble”
- “Practical and appropriate” for child’s age
- “Accommodations” for the ”vulnerable”
  - No one to be excluded unless mandated
  - And avoid marginalization, policies should be offered in multiple languages
- Policies should ”support the overall health and well being of children, adolescents, their families, and their communities”
Issues that School Policies have to keep in mind

- Acknowledging that while children may not have disease severity, there is the potential for spread to the house and community
  - Have to be vigilant of the elderly who might share the same household, or others in the house who may be vulnerable
- It will be *impossible* to eliminate exposure, it is about *minimizing* risk
Governor Newsom’s recent mandate (7/17/2020)

- Safety - Schools in counties on the watchlist will do distance learning
  - If 5% of school is positive, or if 25% of schools in a county are closed, revert to distance learning
  - Positive cases will have all contacts quarantined for 14 days
  - Local health officers can apply for waivers
- Masking - 3rd graders and older have to wear masks
  - Younger students are encouraged but not required
- Distancing - Physical distancing of 6 ft and health screens
- Testing - School staff will be periodically tested
- Learning - Rigorous distance learning (connectivity, daily interaction, same curriculum, support for the marginalized)

California Department of Education Checklist – June 2020

- Local conditions to guide reopening
- Positive COVID Plans or Community surges
- Campus Access
- Protective Equipment

- Physical Distancing
- Cleaning/Disinfecting
- Communication with students, parents, employees, public health officials and the community
- Injury and illness prevention plan
- Employee issues
Local Conditions

- Off the watchlist
- Testing availability and contact tracing ability
- Equipment availability and ongoing supply
  - PPE
  - thermometers
- Cleaning supply availability
Positive Cases

• Schools will have a plan
  • Isolation at home for the child or school faculty
  • Isolation of close contacts from school
  • Temporary closure and disinfecting of the areas the positive case was in
  • Continuity of education, medical services, and meal programs for the positive case
Campus Access

- Minimize access
- Limit visitors
- Passive screening
  - Parents
    - 100.4 degrees F
    - Symptoms
- Active screening
- Plan for symptomatic individuals
  - In school and on buses
Hygiene

- Handwashing
  - Proper technique (ie 20 sec)
  - Before, after, playgrounds, meals, hands on activities
- Avoiding touching mask
- Proper coughing and sneezing
PPE/Mask wearing

- Some individuals have an inability to wear cloth masks (face shields alternative)
- For all 3rd graders and above.
- Some classes won’t permit (eg chemistry)
- Teachers may also have to avoid masks
  - Students are hearing impaired
  - Young students who are still learning language enunciation etc.
Physical Distancing

- 6 ft for children and staff
- Cohort classes, meals
- Minimize movement
- Outside as much as possible
- Staggered drop-offs and pick-ups with limitations of adults entering the school
- Plexiglass in the office/reception areas, cafeterias, desks
Cleaning and Disinfecting

- Limit toys/stuffed animals
- Avoid sharing of computers/books/learning aids.
- Disinfect frequently used surfaces
- Maximize central air filtration
- UV light is not recommended
- Kids should not partake in this activity
Communication

- Create notification plans
  - For policy changes
  - Positive cases or potentially positive
  - Constant reminders of guidelines
Some last thoughts from AAP

- Avoid nebulizers, use personal MDI’s and spacers
  - After nebulizers, room should be cleaned and disinfected
- Schools should have mental health professionals available
- Plans are to be made by the school for those who have meal programs
- *Flu vaccines this fall will be highly encouraged*
Benefits vs. Risks

- **Benefits (age dependent)**
  - Socialization
  - Education
    - Identify learning issues easier
  - Food/meals
  - Child care

- **Risks**
  - **COVID-19**
    - Short-term and long-term issues
    - Diabetes and sick day management
  - **Asymptomatic carrier**
    - Vulnerable people at home
      - Siblings with health issues
      - Parents and grandparents
To Sum Up…

- **Mask**
  - Mask as long as you are not exempted and consider eyewear
  - Beware of masks with valves

- **Wash**
  - Remind your kids about handwashing correctly (ie 20 sec)
  - Provide personal hand sanitizer
  - Wash hands before going to school and when returning

- **Distance**
  - Maintain 6 ft distance as frequent as possible
  - Beware of time of exposures as well

- **Empower**
  - Be active on parent/school/district meetings to make sure guidelines are being followed

- **Weigh**
  - Weigh the personal benefit of attending school with the risk of potential exposure to those who may be vulnerable at home
"The coronavirus has shown the entire world that there are things that humans can't control, but that does not mean we have no control."

- Cynthia Katsingris, T1D x 30 years, Diatribe Dialogue, 4/27/2020
“He who has health has hope, and he who has hope...has everything.”

- Arab Proverb
Resources

• CDC:

• AAP:

• CDE:
  • https://www.cde.ca.gov/ls/he/hn/documents/strongertogether.pdf

• Governor Newsom’s mandate July 17, 2020
Let's Stay in Touch!

Lisa Shenson
Diabetes Parent & Advocate

EMAIL: lshenson@hotmail.com
Taking Diabetes to School: COVID-19 Special Edition

Lisa Shenson / Diabetes Parent & Advocate
Tariq Ahmad, M.D. / UCSF Benioff Children's Hospital Oakland

July 23, 2020
Overview

1) What is school advocacy? Stakeholders' roles?

2) What are the legal protections afforded children with T1D and relevant policies?

3) How do you use law and policy for your child?

4) What resources are available to support you?
What is T1D School Advocacy?

- access to medically safe environment...
  achieve medical and academic goals
- equal access to educational opportunities and activities (field trips, extracurriculars, etc.
- seamless transition home to school
- partnership with the school
- providing education & support
- documenting agreements / grievances
- accountability
The Stakeholders

"Do we hear Emma's voice?"

Medical Team

School Personnel

Parents & Child
Know BEST PRACTICES:
Integrate diabetes care into the school day

- in-class BG monitoring and care
- self-care anytime, anywhere
- immediate access to supplies
- 2-3 trained adults (RN + staff); 1 trained adult always on site
- Training before school starts
- Written Plans (504/IEP, DMMP/Health Plan)
- Back-up Plan
- Emergency Plan
- Full participation in all school activities
Know BEST PRACTICES:
3 Levels of Training

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>Description</th>
<th>T1D &quot;Basics&quot;</th>
<th>Treating Lows and/or Glucagon</th>
<th>ALL Care Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEVEL I</td>
<td>All personnel directly supervising child (teachers, yard duty, bus driver, front office, health aide, RN)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>LEVEL II</td>
<td>Smaller group of designated personnel</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>LEVEL III</td>
<td>2-3 designated personnel</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**T1D Basics** = What is T1D?; signs/symptoms of Highs/Lows & Treatment Need; Food/Activity/Illness; Who to Contact On Site for treatment

**ALL Care Needs** = Above plus Carb Counting; Ketone Checks; Insulin Administration by preferred method; Use of Pump/CGM/Meter/PDM (as applicable)
FEDERAL LAWS

Legal definition of "disability"

- a physical or mental condition that impairs a person's ability to perform a major life activity.

  Examples:
  Eating, walking, talking, thinking, learning, self-care, etc.

- "impairment of ...endocrine system"
  "other health impairment"

* Out of range BGs may impair ability to perform a major life activity.
FEDERAL LAWS

Disability laws "level the playing field"

- Americans with Disabilities Act ("ADA")
- Section 504 of the Rehabilitation Act ("Section 504")
- Individuals with Disabilities Education Act ("IDEA")
FEDERAL LAWS

Americans with Disabilities Act

- Prohibits discrimination on basis of disability.
- Entity to make **reasonable modifications to facilitate equal access unless** doing so would cause an "undue burden" resulting in a **fundamental alteration** to program/service.

Examples:

- Daycare / Childcare
- Preschool
- Public Schools
- Private Schools (non-religious)
- Colleges / Universities
- Afterschool Programs (3rd party)
- Enrichment/Sports Programs
- Summer Camps
- Employment
FEDERAL LAWS
Section 504 of the Rehabilitation Act

Prohibits discrimination on the basis of disability.
Schools that receive government funds must provide:

...a free, appropriate public education (FAPE)
... equal to non-disabled peers
... with reasonable accommodations
... including related aids and healthcare services
... all to be delivered in the least restrictive manner
FEDERAL LAWS

Section 504 of the Rehabilitation Act

- school to "seek and identify"
- written notice to inform parents of rights, meeting
- convene "504 Team"
- mutually acceptable meeting date/time
- afford parents a meaningful role
- take all facts into consideration
- INDIVIDUALIZED needs = INDIVIDUALIZED plan
- create a written plan of accommodations
  - how the SCHOOL will accommodate student
- academic and non-academic needs
- Due Process
- School to seek compliance
FEDERAL LAWS

Section 504: Did you know...?

- written physician's orders help define "appropriate" care
- parents may NOT be required to provide care
- students may not be required to go to a non-neighborhood school because of disability-related needs
- accommodations apply to ALL school activities
- schools are prohibited aiding/perpetuating/having a relationship with an entity that is discriminating on the basis of disability (e.g. afterschool/childcare programs)
- there is NO limit to the length of 504 Plan
- every school must have an on site 504 Coordinator
- blanket policy is prohibited ("all kids with diabetes must do 'x' ")
- financial burden is not a valid defense
- school may implement plan without your consent
FEDERAL LAWS

Individuals with Disabilities Education Act

- NOT anti-discrimination law.
- ensures student's ability to access education
- disability has profound impact on learning
- Individualized Education Plan (IEP)
  - specific milestones; strategies; reporting; timeframes

Examples:
- diagnosed learning differences (e.g., ADD/ADHD, Autism Spectrum Disorder, dyslexia, auditory impairment, speech disorder, processing disorder, etc.)

- may include T1D if having profound impact on learning
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>49407.0</td>
<td>No school personnel shall be held liable for delivering care in an emergency.</td>
</tr>
<tr>
<td>49414.5</td>
<td>Permits training of volunteer school personnel to administer glucagon <strong>AND</strong> permits student to do BG checks and self-care in any location at any time.</td>
</tr>
<tr>
<td>49423.0</td>
<td>Authorizes school nurse or other designated personnel to administer medication.</td>
</tr>
<tr>
<td>49423.5</td>
<td>For students with IEPs, allows school nurse to delegate “specialized healthcare services”.</td>
</tr>
<tr>
<td></td>
<td>- Does NOT apply to T1D -</td>
</tr>
<tr>
<td>49480.0</td>
<td>Parents must inform school of doctors, meds, dosing</td>
</tr>
</tbody>
</table>
ANSWER:
Existing law DOES allow non-licensed school personnel to be trained to administer insulin for those times when no nurse is available.

- school personnel must consent
- parent must consent
- treating physician must consent
CALIFORNIA SUPREME COURT
2013 ANA v Torlakson:

Joint Statement, CSNO - ANA - C/ANA - ADA (2014)

"School nurse" = RN or greater licensure
CA Code of Regulations Title 5, Section 601

"Other designated school personnel" = LVN, Health Aide, Teachers, Staff
CA Code of Regulations Title 5, Section 601

NOTE: A school district may choose to have a 'nurse only' policy. Policy/practice may not impede the child's access to appropriate care, as per doctor's orders. Federal law (Section 504) prevails.
WRITTEN PLANS

Doctor
Parents

- Treating Physician's Orders
- Diabetes Medical Management Plan

Doctor
Parents
School RN

- Individual Health Care Plan
- One Page Quick Reference Sheet

Parents
School RN
504 Coord.
Teachers
Administrators

- 504 Plan of Accommodations / (or IEP Plan)
504 Plan: Words Matter.

Use the ADA-DREDF Sample 504 Plan

- Develop a **proposed plan of accommodations**
- Tailor to *your* child's INDIVIDUALIZED needs.

**Vague Language**

"School to help Emma with care."

"Emma checks BG at snack/lunch/PE."

**Clear Language**

"At least 2-3 people will be identified as TDPs who are trained in ALL aspects of care, and at least 1 of those people will be on site at all times."

"TDP will assist and/or supervise Emma in classroom with both scheduled (snack/lunch/PE) and unscheduled BG checks, per written physician's orders"
Why have a 504 Plan?

- Defines responsibilities / expectations
- Builds a positive partnership
- Protects child's rights
- Builds confidence / enduring positivity
- Supports school compliance
- Pre-empt issues
- Builds SUCCESS!!
RULE #1: All communications in writing.

- Be well prepared.
- Never assume. *Ask questions!!*
- Be respectful.
- Listen carefully.
- Educate the educators.
- Work up the chain of command.
- Read all documents *carefully*. Keep copies.
- Language matters.
- Prepare to negotiate.
- Keep trying!!
- Know when to seek help.
- Only sign a document you fully support.
# 504 Plan Process: How to...

<table>
<thead>
<tr>
<th>WHEN</th>
<th>WHAT</th>
<th>WHO</th>
</tr>
</thead>
</table>
| Min. 6wks before school starts | • Current dr's orders  
   • Create proposed 504 Plan, DMMP, One Page Quick Ref              | Doctor, Parents          |
| Min. 4-6 weeks before school starts | • Send letter requesting 504 Team Meeting, TDP training  
   • Confirm meeting                                                 | Parents, Principal, School RN |
| Days before school starts   | • Meet w/School RN; review orders  
   • Train TDPs  
   • Meet w/teacher, staff  
   • Supplies to school                                              | Parents, Principal, School RN, Teacher(s), Staff |
| Within 2 weeks of school start | • On-going TDP training/support  
   • 504 Team Meeting  
   • Finalize written plans                                         | Parents, Principal, School RN, Teacher(s), Staff |
COVID-related Plans

INDIVIDUALIZED / CHILD & FAMILY SPECIFIC

- Talk with your medical team. Determine health / safety issues/barriers.
- Build flexibility, adaptability into written plans. (In person-home-hybrid)
- If at home, include those services/supplies child would have received at school.
- Include:
  - additional sick days
  - staff to receive coronavirus training before school starts
  - educate students / staff parents about masks, washing hands, 6' social distancing, keeping "pods" separate
  - protocols for notifying you immediately if someone COVID+
  - small in-person group learning, preferably outdoors
  - elimination of shared tactile objects...musical instruments
  - frequency/details of school sanitizing practices / deep-cleaning (class, lavs)
  - distancing of desks ...staggered arrival/play times...hygiene supplies...masks
  - "Wellness spaces" away from sick children
  - Location for eating snacks/meal
  - PPE for staff...students in need
Q&A: Problem-Solving

#WeAreInThisTogether
YOU are your child's best advocate.
Give your child a voice.