# Camps & Infectious Disease

Laura Blaisdell MD/MPH November 19, 2019

### Overview

- Maine CDC Infectious Disease Program
- Camp Notifiable Diseases Reporting
- Vaccine Refusal and Hesitancy

## Why Summer Camps Should Pay Attention

- Outbreaks make kids/staff sick.
- Outbreaks create stress & confusion.
- Outbreaks disrupt camp programs.
- Outbreaks can be difficult to control.
- Outbreaks are tricky to explain to parents.
- Camps are responsible for keeping up-to-date vaccine records (preferably electronic).
- Outbreaks, especially now, create news.

## Why Summer Camps are at Increased Risk

- Density: a lot of people living, socializing, and interacting
- Diversity: a wide variety of individuals from different backgrounds with different social habits
  - Lack of familiarity with our regional diseases and risks
  - Carrying diseases uncommon here
- Traveling population
- Experimental behaviors, age-related attitudes
- Difficult tracking because home address for patient is often out-of-state, which means...
  - Maine CDC often doesn't receive timely disease reports from diagnostic labs or health care providers

## Diseases of Concern to Camps

- Gastrointestinal (GI) illness
- Vaccine-preventable diseases (VPDs)
  - Influenza
- Rabies
- Vector-borne diseases (VBDs)
- Others
  - Common childhood illnesses (HFM, strep, staph);
     sexually transmitted infections; tuberculosis

## Real Life Examples

- Pertussis outbreaks in cabins
- Norovirus outbreaks
- Salmonella typhi in cook staff
- Cryptosporidosis and Ecoli at a farm camp
- Bats, bats, bats!
- Measles: we got lucky

# Disease Reporting & Investigation

### **Notifiable Diseases**

- Reportable to ME CDC
  - Recognition or strong suspicion
- Category 1
  - Immediately by phone
  - Includes cluster/unusual/critical/unexplained death of any suspected infectious disease
- Category 2
  - No later than 48 hours by phone, fax, or mail

Maine Center for Disease Control and Prevention

### NOTIFIABLE DISEASES AND CONDITIONS LIST

24 Hours A Day, 7 Days A Week Disease Reporting:

Telephone: 1-800-821-5821 Fax: 1-800-293-7534

Conditions are reportable immediately by telephone on recognition or strong suspicion of disease All others are reportable by telephone, fax, electronic lab report, or mail within 48 hours of recognition or strong suspicion of disease

→ Directors of laboratories are to submit isolates or clinical specimens, as well as any isolates or clinical specimens as requested by Maine CDC, to the Maine Health and Environmental Testing Laboratory for confirmation, typing, and/or antibiotic sensitivity

Acid-Fast Bacillus → 🖂

Acquired Immunodeficiency Syndrome (AIDS)

Anaplasmosis

Anthrax → □ (Bacillus anthracis)

Babesiosis

■ Botulism → □ (Clostridium botulinum)

■ Brucellosis → 

□ (Brucella species)

California Serogroup Viruses

Campylobacteriosis

Carbapenem-resistant Enterobacteriaceae (CRE) 1

Carbon Monoxide Poisoning 2

Chancroid

Chlamydia

Chickenpox (Varicella)

Chikungunya

Creutzfeldt-Jakob disease, <55 years of age

Cryptosporidiosis Cyclosporiasis

Dengue

■ Diphtheria → □ (Corynebacterium diphtheriae) E. coli, Shiga toxin-producing (STEC) -> III

Eastern Equine Encephalitis

Ehrlichiosis

Giardiasis

Conorrhea

Haemophilus influenzae, invasive → 🖂

Hantavirus, pulmonary and non-pulmonary syndromes Hemolytic-uremic syndrome (post-diarrheal)

Hepatitis A, B, C, D, E (acute)

Hepatitis B, C, D (chronic)

Human Immunodeficiency Virus (HIV) 3

Influenza-associated pediatric death

Influenza A. Novel → III

Influenza-associated hospitalizations, laboratory-confirmed Legionellosis

Leptospirosis

Listeriosis -> III (Listeria monocytogenes)

Lyme Disease

Malaria

■ Meningococcal Disease, invasive → 

 (Neisseria meningitidis)

Mumps → 
 □

Pertussis

Poliomyelitis → III (Polio virus)

Powassan Virus Psittacosis

Q Fever

Rabies (human and animal) → 
 (Rabies virus)

Rabies Post-Exposure Prophylaxis

■ Rubella (including congenital) → 

□ (Rubella virus)

Salmonellosis -> (Salmonella species)

Shellfish Poisoning

Shigellosis → 

(Shigella species)

Smallpox → 

(Variola virus)

Spotted Fever Rickettsiosis

St. Louis Encephalitis

Staphylococcus aureus, Methicillin-Resistant (MRSA), invasive

Streptococcus Group A, invasive

Streptococcus pneumoniae, invasive

Syphilis

Trichinosis

■ Tularemia → 

 (Francisella tularensis)

Vibrio species, including Cholera → 

(Vibrio species)

Viral Hemorrhagic Fever

West Nile Virus

Western Equine Encephalitis

Yellow Fever

Any Case of Unusual Illness of Infectious Cause

Any Cluster/Outbreak of Illness with Potential Public Health Significance

Who must report: Health Care Providers, Medical Laboratories. Health Care Facilities, Administrators, Health Officers, Veterinarians

### What to report: Disease reports must include as much of the following as is known:

- Disease or condition diagnosed or suspected
- Patient's name, date of birth, address, phone number, occupation, race, and ethnicity
- Diagnostic laboratory findings and dates of test relevant to the notifiable condition
- Health care provider name, address and phone number
- Name and phone number of person making the report

- 1. Carbapenem-resistant Enterobacteriaceae (CRE): See current definition as adopted by the United States Centers for Disease Control and Prevention
- 2. Carbon Monoxide, including clinical signs, symptoms or known exposure consistent with diagnosis of carbon monoxide poisoning and/or: a carboxyhemoglobin (COHb) level >5%
- Human Immunodeficiency Virus (HIV), including:
  - Confirmed, positive antibody tests
  - Viral load tests, all results
  - CD4 lymphocyte counts, all results



Maine Center for Disease Control and Prevention

An Office of the Department of Health and Human Services

http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/disease-reporting/index.shtml

Complete Rules for the Control of Notifiable Diseases and Conditions:

## Required Reporters

- Health Care Providers
- Medical Laboratories
- Health Care Facilities
- Day Care Facilities
- Correctional Facilities
- Educational Institutions
- Local Health Officers
- Veterinarians
- Veterinary Medical Laboratories

## Why Report

- Required by law
- Evaluate risks of transmission
- Intervene when appropriate to prevent the spread of disease
  - E.g. avian influenza, chickenpox
- Determine disease incidence/prevalence
- Increase understanding of the distribution and determinants of the condition in Maine
- Maine required to report to U.S. CDC

## How to Report

- http://maine.gov/idepi ("disease reporting" tab)
  - Notifiable Conditions List
  - Rules for the Control of Notifiable Conditions
  - Notifiable Conditions Reporting Form
    - Fax: 1-800-293-7534
- Phone: 1-800-821-5821
  - Available 24/7 for disease reporting and consultation
    - After-hours calls are redirected to NE Poison Control
- E-mail disease.reporting@maine.gov
  - For non-confidential reports or requests for consultation

## What Happens Next?

- Reports & consultation requests are assigned to Field Epidemiologists (usually by region)
- Field Epidemiologist will call you to:
  - establish communication (identify one point of contact)
  - assess current situation
  - collect data (if suspected outbreak start a line list)
  - plan for continued monitoring of ill children
  - arrange for specimen collection/testing, if needed
  - provide guidance on prevention and control, including template letters, disease fact sheets, and exclusions

## A Special Word on Rabies

- Domestic animal (cat/dog/ferret/etc.):
  - Contact Animal Control Officer and Maine CDC for notification and guidance prior to recommending Post-Exposure Prophylaxis (PEP)
    - Usually, animals undergo 10-day observation regardless of vaccination status
    - Severe attacks may require expedient response and treatment

## General Approach to Rabies Exposures

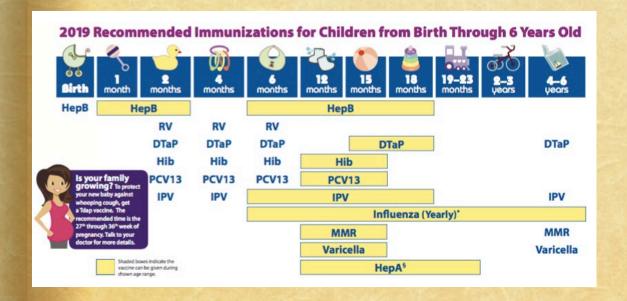
- Wild animal, including bats:
  - If available: Trap and submit animal for testing to state lab
    - Contact Game Warden service (if needed) and Maine CDC
    - PEP only recommended for rabies-positive animals
  - If not available: Consult Maine CDC
  - Multiple bat exposures
    - List potentially exposed (name, home address and contact info, etc.)
    - Bat-proof buildings to avoid future exposures

## Review

- Know WHAT to report, WHEN to report, HOW to report, and TO WHOM to report
- Know your local and state health website
- Know who to call
- Establish a working relationship with local health care providers and clinics for medical referrals and follow-up
- Make it simple
  - Make sure simple preventive measures are easily available
  - Hold vaccination clinics
- Ensure that your Health Department has a single point of contact for your clinic

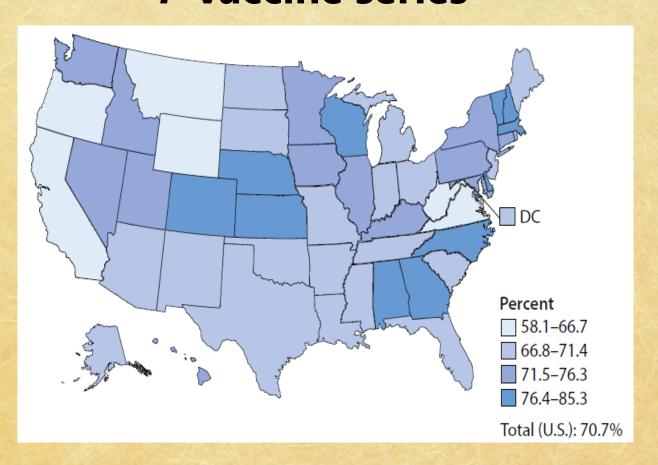
# Vaccine Preventable Diseases & Camps

## Vaccine Preventable Disease (VPD)



- Tetanus
- Diptheria
- Pertussis
- Meningococcal A&B
  - Pneumococcus
    - Measles
    - Mumps
    - Varicella
    - Influenza
  - Hepatitis A & B
    - + Hib
    - Polio
    - Rubella
      - HPV

## Vaccination coverage for combined 7-vaccine series



NOTES: Data for the map are displayed by a modified Jenks classification for the 50 U.S. states and D.C., which creates categories that minimize within-group variation and maximize between-group variation.

SOURCE: NCHS, *Health*, *United States*, *2017*, Figure 12. Data from the National Center for Immunization and Respiratory Diseases (NCIRD) and National Immunization Survey-Child (NIS-Child).

## **ME Vaccine Exemptions**

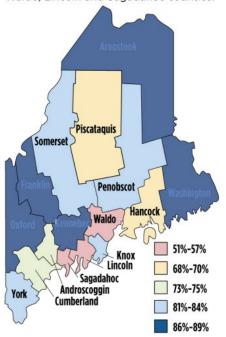
- Parents can opt out of vaccines for personal belief reasons or, with their doctor for medical reasons.
- Maine was one of 18 states with 3 exemptions from school-required immunizations based on medical, religious, and philosophical beliefs.
- Maine is susceptible to outbreaks of infectious disease because it has one of the nation's worst vaccination rates.
   6.1% of Maine kindergartners are not immunized.
- Only 0.3% of Maine kindergarten parents requested medical exemptions in the 2017-18 school-year.

## Maine's Rates

| County       | Diphtheria,<br>Tetanus and<br>Pertussis | Polio | Measles,<br>Mumps and<br>Rubella | Tetanus<br>Diphtheria<br>Pertussis ( |
|--------------|---|-------|----------------------------------|--------------------------------------|
| Androscoggin | 95.3                                    | 95.6  | 95.3                             | 94.9                                 |
| Aroostook    | 96.7                                    | 97.3  | 93.7                             | 96.4                                 |
| Cumberland   | 95.0                                    | 94.9  | 94.4                             | 95.0                                 |
| Franklin     | 96.2                                    | 95.8  | 95.4                             | 96.6                                 |
| Hancock      | 93.5                                    | 93.3  | 92.4                             | 92.3                                 |
| Kennebec     | 95.5                                    | 95.8  | 94.1                             | 93.7                                 |
| Knox         | 93.4                                    | 93.1  | 91.2                             | 92.5                                 |
| Lincoln      | 94.9                                    | 94.4  | 92.1                             | 96.6                                 |
| Oxford       | 95.3                                    | 95.1  | 94.4                             | 92.4                                 |
| Penobscot    | 96.4                                    | 96.4  | 95.8                             | 95.8                                 |
| Piscataquis  | 93.3                                    | 93.9  | 95.1                             | 88.4                                 |
| Sagadahoc    | 93.1                                    | 92.2  | 91.6                             | 96.6                                 |
| Somerset     | 92.8                                    | 93.7  | 91.3                             | 91.2                                 |
| Waldo        | 94.4                                    | 93.8  | 93.5                             | 92.3                                 |
| Washington   | 98.6                                    | 98.6  | 96.1                             | 94.2                                 |
| York         | 96.1                                    | 95.8  | 95.4                             | 91.7                                 |

### Immunization rates by county

The following shows the rate by county in 2012 that children aged 19-35 months received all the vaccinations that were due by the time they were 18 months old. The rates at which parents are not immunizing their children with all recommended vaccines vary by county, with more than 80 percent receiving all vaccinations in several counties, compared to just over 50 percent in Waldo, Lincoln and Sagadahoc counties.



SOURCE: Maine Center for Disease Control

STAFF GRAPHIC | MICHAEL FISHER

## Outbreaks

- January November 2018 the following diseases outbreaks occurred:
  - Pertussis: 13 schools in Cumberland, Hancock, Waldo, Penobscot, and York counties. This included Sanford and Cumberland schools, among others, and 3 daycare centers in York county.
  - Chicken pox: 1 daycare in Westbrook and a case in a Waterboro middle school.
  - Mumps: Outbreaks occurred among college students in 2016 at University of Southern Maine, Bates, and Bowdoin. Other than one reported case in 2013, Maine has not had a mumps outbreak since 2007.
  - Measles: The first case since 1997 occurred in Farmington in 2017.

## LD 798

An Act To Protect Maine Children and Students from Preventable Diseases by Repealing Certain Exemptions from the Laws Governing Immunization Requirements

## The Law: Who & What Vaccines?

- To whom does LD 798 apply?
  - All private and public elementary and secondary school as well as special education programs.
  - Also daycares, universities, and colleges will become protected.
  - Certain health care facilities will also be included.
  - Not summer camps.
- What limited number of vaccines are included in LD 798?
  - Students:
    - DTaP
    - Measles, mumps, rubella
    - Polio
    - Chicken pox
    - Meningococcal meningitis.
  - Healthcare workers and daycares may require additional immunizations.
- NOT mandatory vaccination.
- With no major religion against immunization relgious beliefs=personal beliefs.

## **New York Camps**

- June 2019 NY Passed a bill to end religious exemptions in the setting of a measles outbreak.
- Health Commissioners required all summer camps to send proof of immunity for campers and staff.
- Horrible timing.
- It takes 30 days to get up-to-date on measles alone, it can take 14 months to get up-to-date on all vaccines.

## Maine

- Requires record keeping of vaccinations.
- LD798 does not require mandatory vaccines for summer camps yet.
  - But arguably camps could/should follow schools.
  - In an outbreak, health leaders could mandate vaccination for camp attendance.
- Maine camps should consider policy changes now to minimize disruption during the summer season.

## **ACA/AAP Policy Statement**

- Before starting camp, all campers should be in compliance with the recommended childhood immunization schedule published annually by the American Academy of Pediatrics (AAP), the Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention, and the American Academy of Family Physicians.
- Camp administrators should be aware that individual states might require other immunizations in addition to those recommended by the AAP.
- Nonmedical exemptions to required immunizations are inappropriate and should be eliminated by camps.
- Polices must also be in place regarding participation in the camp program by campers who are incompletely immunized or unimmunized.
- People who travel internationally as part of a camp program should consult the Centers for Disease Control and Prevention traveler's health Web site or visit a traveler's clinic for information regarding particular immunization requirements or health concerns that may be associated with their destination.

American Academy of Pediatrics



Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

### Policy Statement—Creating Healthy Camp Experiences

### abstract



### COUNCIL ON SCHOOL HEALTH

### KEY WORDS camping, recreation, child, adolescen

this publication.

The American Academy of Pediatrics has created recommendations ARREVIATION for health appraisal and preparation of young people before participa-AAP-American Academy of Pediatrics

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Association. Pediatrics 2011;127:794-799

For 150 years, children have been attending camp.1 Today, approxi mately 11 million children attend day or resident camp, supported by 1.2 million staff members.2 Currently, camp programs exist in myriad forms and cater to any interest or population imaginable. The camp experience has been proven to have a lasting effect on psychosocial development, including significant effects on self-esteem, peer relationships, independence, leadership, values, and willingness to try new things. 3 Camps also offer an opportunity to overcome a lack of connection with the natural environment, which has been associated with depression, attention disorders, and obesity. Safety research has revealed that camps have a safety profile equivalent to, or better than, many other activities that parents choose for their children.

tion in day or resident camps and to guide health and safety practices

for children at camp. These recommendations are intended for par-

ents, primary health care providers, and camp administration and

health center staff. Although camps have diverse environments, there

are general guidelines that apply to all situations and specific recom-

mendations that are appropriate under special conditions. This policy

statement has been reviewed and is supported by the American Camp

Camp health care providers can expect to care for campers with any of the medical and psychological issues seen daily by primary pediatric providers. As a result, the precamp health evaluation takes on increased importance. Parents, the primary health care provider, camp administrators, and camp health care providers should openly share information to ensure that a camper is appropriate for his or her new environment. In addition, parents should medically and psychosocially prepare their child for camp. Camp administration must create appro priate policies and procedures and work in cooperation with local health care providers and facilities to ensure that off-site support is in

### PREPARING CAMPERS

1. Before choosing a camp, parents or guardians should be encour aged to assess their child's interests, skills, and overall physical mental, and emotional well-being and evaluate his or her ability www.pediatrics.org/pgi/dpi/10.1542/peds.2011-0267

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## Preparations: What Should Camps Do?

- Consider investment into electronic health record.
- Create a vaccination policy and make parents aware during recruitment season.
- Create a under/unimmunized policy.
- Consider screenings and camp policies on attending while sick.

## **VPD & Immunization Policy**

Camp Himmedago Yacume-Preventable Disease and Netusal policy

There has been an increase in the number of cases of vaccine-preventable diseases (VPDs) in the United States over the last several years, including those which have been linked to foreign travel, spread on school and college campuses, or spread at children's summer camps. The best protection against vaccine-preventable diseases is bread vaccination downward. Therefore, age-appropriate vaccination of at individuals who will be working at or attending Camp Winnebago summer camps is required.

We recommend that all children and staff are up-to-date according to the Center for Disease Control commendation for immunization. All staff and campers must have an accurate immunization record on file prior to arriving at camp and all unvaccinated individuals at camp must have an immunization exemption form on file prior to their arrival at camp. Additionally, the rise in VPDs and our utmost goal of a safe and healthy community for Wassatapace we want staff and families to understand our policies for managing potential and actual VPDs at camp.

Unvectinated children and staff who demonstrate signs or symptoms consistent with VPDs will be quarantined until diagnosis of disease can be confirmed. Please be aware that symptoms include fever, cough and malaise, which are common in many illnesses. In the event that the child or staff is diagnosed with a VPD, the following will occur:

- 1. Parents will be notified and child/staff will be removed from camp immediately.
- Parenta/staff will be responsible for amonging and the cost of travel or other accommodations within 24 hours of notification. Please be aware that Maine Center for Disease Control guidelines may require no public travel depending the infectiousness of the disease.
- Should our community be exposed to a VPO such as measies, children/staff in the community who
  are unvaccinated but without symptoms will require immunization to remain in camp or will have to
  be excluded from camp. Immunization and related costs will be the responsibility of the
  perent/staff.

Thank for your attention to this serious and important matter.

| and Refusal policy. I understand that up<br>Winnebago. I understand that if I decid<br>Center for Disease Control recommende | e read the above Cemp Winnebago Vaccine-Preventable Disease<br>tod-date vaccines are required for attendence or work at Camp<br>or I decide for my child to attend camp without age-appropriate<br>d immunization that I must complete the below form prior to my/my<br>what will happen if Ilmy child develops signs or is diagnosed with a |
|--|--|
| Name   | Date   |
| Please have yourlyour child's physician  | Il out the below:  |
| to c   | urrently not up to date on the following immunizations.  |

- Consider following schools
   & mandate immunization
   for attendance.
- Outline to parents and staff what will happen if a unprotected camper/staff has fever, cough or rash.
- Outline to parents and staff what will happen to other unvaccinated children/staff in camp.

### **Mandates & Attrition**

- Camps may worry that enrollment will decrease with a strong vaccination policy.
- NY state reported that in only 1 or 2 instances, did a family withdraw their camper.
- Similar data out of CA schools, where vaccination as a condition of school entry demonstrated increased vaccination rates.

## **Surveillance & Prevention**

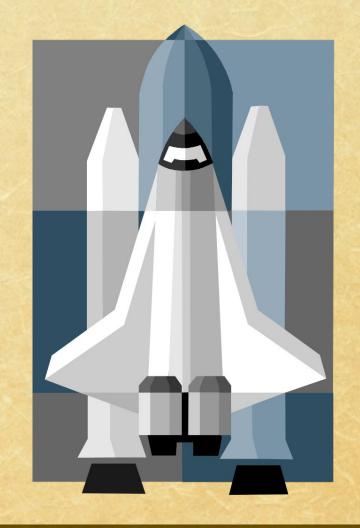
- Educate parents and caregivers on role in illness prevention before camp begins
- Establish "opening day" screening process, including right to refuse admission if needed
- Establish, implement, and promote policies that prevent spread of disease
  - Educate staff on when to reach out to Maine CDC
  - Have an plan for responding to outbreaks, especially if campers may need to be isolated to prevent exposure
- Establish policies to keep staff healthy
- Regularly evaluate and update your health care practices and procedures
  - Seek out up-to-date information and recommendations from health department

### **Outbreak Themes**

- Detect a sudden increase in similar symptoms?
- Can the majority of illness be attributed to one or two symptoms?
  - Gastrointestinal
  - Rash
  - Respiratory
  - Fever
- Is there a potential source?
  - Linked by person, place, time

## Surveillance & Prevention SSSHHHIP

Surveillance **S**neezing Etiquette Sunblock Hand washing **H**ydrate Hygiene Insects&Animals Poop



## **Surveillance & Prevention**

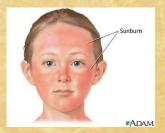
- Frontline staff are central!
- Checking in with their campers and being curious about signs of illness or injury.
- Compliance on the boring aspects of prevention.
  - Handwashing
  - Hygiene
  - Cough/Sneeze Etiquette
  - Etc.











### Other Recommendations

- Promote hand washing before eating and after contact with animals, possible contaminated surfaces, or food
- Do not let campers drink unpasteurized (raw) milk or cider, or any other high-risk foods
- Promote healthy swimming (avoid ingestion of untreated water)
- Switch from self-serve buffets (especially if GI outbreak is suspected)

## Other Recommendations Continued

- Don't let campers handle wild animals
- Don't share towels or personal items
- Clean high-touch surfaces and bathrooms often
- Promote good respiratory etiquette
- Enhance surveillance if something is "off"

## **ACA/AAP Policy Statement**

- All camps should have written health policies and protocols reviewed by a physician with specialized children's health training.
  - Policies and protocols on both major and minor illnesses and injuries should include information on the camp's relationship and coordination with local emergency services.
- Camps should create disaster and emergency plans, as children are particularly vulnerable and limited in their ability to escape or protect themselves from harm in the event of a natural or manmade disaster.
- All campers, staff and volunteers should be up to date on vaccinations as recommended by the AAP, Centers for Disease Control and Prevention (CDC) and American Academy of Family Physicians.
  - Nonmedical exemptions to required immunizations are inappropriate and should be eliminated by camps.
- Camp activities should be designed to limit the risk of head injuries.
  - Camp personnel need a clear understanding of concussion symptoms and treatment, and should follow CDC and state-specific return-to-play guidelines.
- As camps see an increase in campers with food allergies, they should create and provide their food allergy policies to families before the start of camp.

## **ACA/AAP Policy Statement**

- Camps should review local regulations and requirements for stocking unassigned epinephrine and other emergency medications for seizures, diabetes mellitus or opioid overdose.
- Camp staff should be trained to respond effectively to mental, emotional and social health needs of campers.
  - Camps also should teach staff to support campers who need extra help and help facilitate communication with parents.
- Pediatricians should discuss homesickness with families and campers as part of the anticipatory guidance associated with the health evaluation before camp.
  - Parents should avoid making "pick-up" arrangements in the event of homesickness because these arrangements may undermine the child's confidence in his or her own independence.

Thank you!

### Resources

- Maine CDC Reporting and Consultation
  - https://maine.gov/idepi
  - Phone: 1-800-821-5821
    - Available 24/7 for disease reporting and consultation
  - E-mail disease.reporting@maine.gov
    - For non-confidential reports or requests for consultation
- Maine School Health Manual
  - https://www.maine.gov/doe/schools/safeschools/healt hed/nurseresources/manual
  - Aimed at educating school nurses, but helpful recommendations for school-aged population

### Resources

- Maine Rabies Management Guidelines
  - https://mainepublichealth.gov/rabies
- Maine CDC ID Epi Orderable Materials
  - https://www.maine.gov/dhhs/order
- CDC Travel Health
  - https://www.cdc.gov/travel/
  - Travel notices, recommended vaccinations
- AAP Camping Statement
  - https://pediatrics.aappublications.org/content/pediatrics/127/ 4/794.full.pdf