

Pediatric Pandemic Network: A National Model for Pediatric Infectious Diseases Preparedness

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Session 2-303

2023 ALL-GRANTEE MEETING

CULTIVATING COMMUNITY GROWING COLLABORATION



Speaker Disclosure

- Merck- prior research funding (epidemiology of healthcare-associated RSV)



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Funding Acknowledgement

Title: Pediatric Pandemic Network

Sponsor: Health Resources and Services Administration (Simpson, PI)

Fund No.: 6 U1IMC45814-01-01



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Objectives

- Understand domain priorities, the main goals, and objectives of the Infectious Disease Domain.
- Receive access to information created by the Infectious Disease Domain.
- Understand method of data collection, analysis, and the development of educational tools.



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Public Health and Hospital Partnership

Epidemiology of Emerging and Reemerging Infections

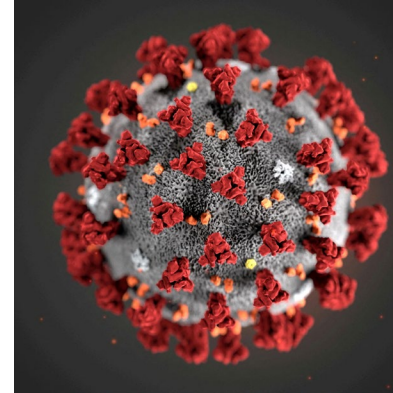


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Novel Pathogens

- Newly identified pathogens and/or clinical phenotypes
- Human-animal interface is perturbed
 - Agricultural practices
 - Increased access to previously remote areas
- Local migration and international travel propagate human-to-human transmission
 - Potential for widespread community transmission



**Novel
coronaviruses**



**Avian (and other
novel) influenza
viruses**



**Acute
flaccid
myelitis**



High-Consequence Infectious Diseases and International Threats

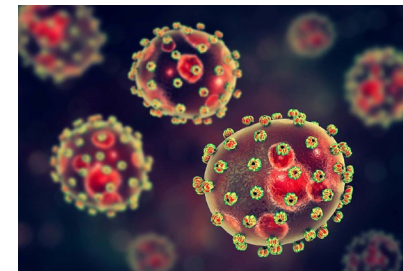
- Often zoonotic in relatively remote areas of the world
- Highly transmissible diseases
 - High morbidity/mortality
 - Few medical countermeasures (diagnostics, therapeutics, vaccines/preventative measures)
- Most with low likelihood and high impact
 - Require high level of hospital preparedness
 - Require local, regional, national, and international public health coordination



Ebola virus



Marburg virus



Lassa virus



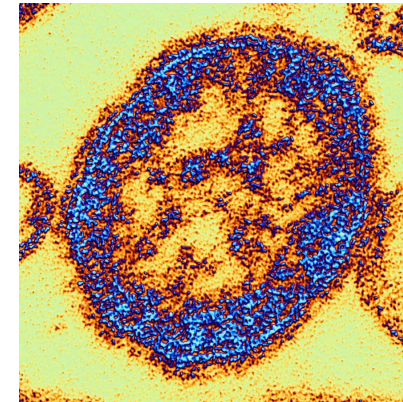
XDR tuberculosis



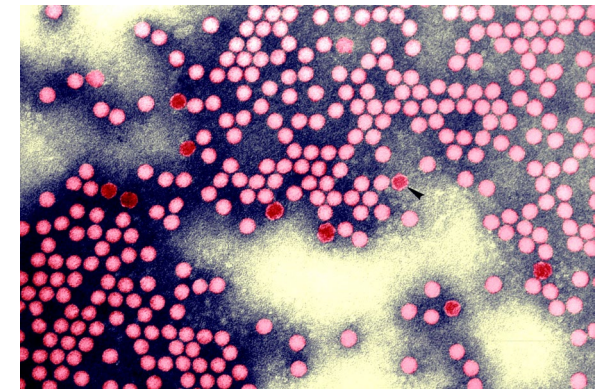
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Vaccine-Preventable Infections

- Re-emergence of infections that had been dramatically reduced in the US and/or worldwide
- Vaccine coverage gaps
 - Healthcare/vaccine access pre- and post-pandemic
 - Vaccine hesitancy
 - International travel/immigration



Measles



Poliovirus

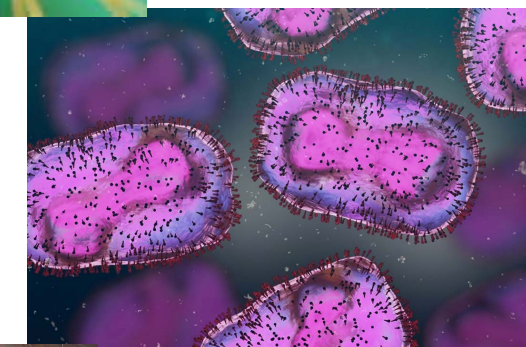


Infections Spread by Close Contact

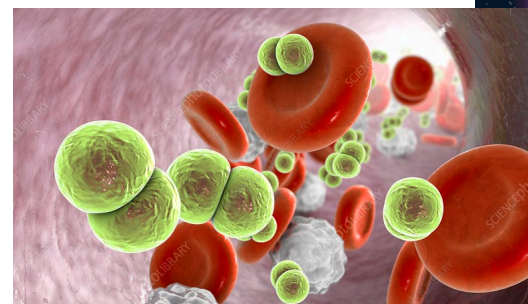
- Transmitted by close and/or intimate contact
 - Congregate living
 - STIs
 - Direct contact, including sexual activity but not an STI per se
- High risk for stigmatization based on race/ethnicity, gender, and/or sexual orientation
- Public health messaging and equity-focused, community-based education/mitigation is important



Antibiotic-resistant gonorrhea



MPox



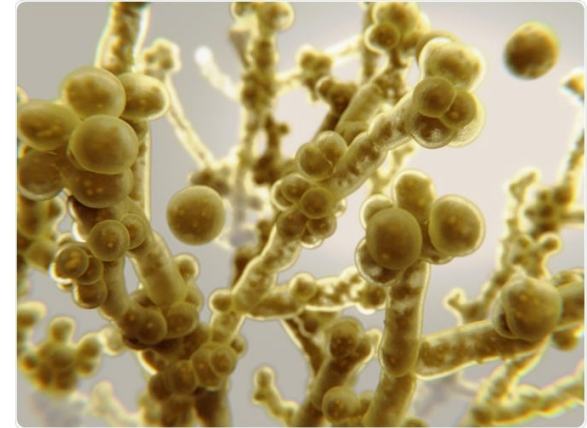
Meningococemia



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Healthcare-Associated Infections

- Associated with medical co-morbidities and antibiotic overuse
- Require hospital surveillance, infection prevention and control, antimicrobial stewardship, and public health coordination



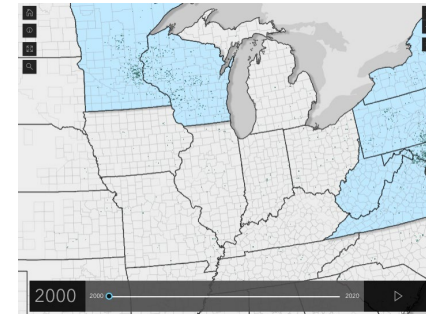
***Candida
auris***

**Carbapenem-
resistant
enterobacterales**

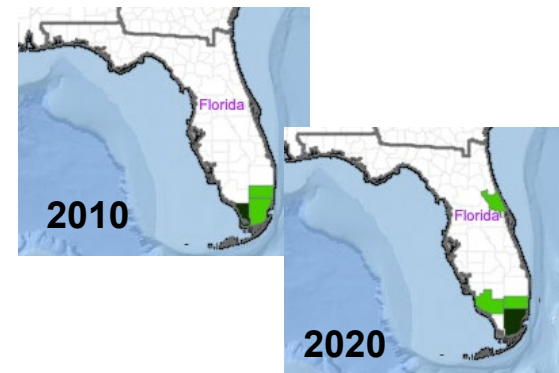
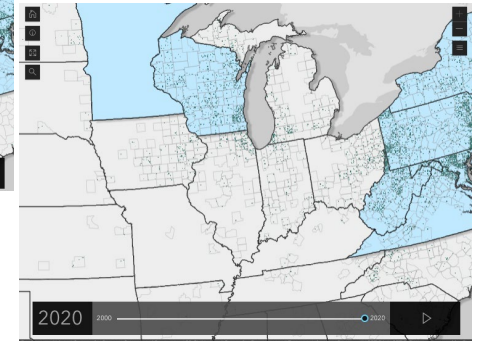


Vector-Borne (Arthropod) Diseases

- Shifting of vector habitats related to climate change
- Travel to or immigration from areas endemic with specific arthropod vectors
- Minimal person-to-person transmission risk



Lyme Disease




Dengue virus

New malaria case in Florida brings national total to 8, the first U.S. acquired cases in 20 years

All seven of Florida's cases have been found in Sarasota County. A CDC official said the agency does not expect a nationwide outbreak.

Maryland reports first locally acquired malaria infection in 40 years

 By Katie Shepherd
August 18, 2023 at 5:13 p.m. EDT



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Unmet Needs and Opportunities

- Emerging and re-emerging infections, some with substantial clinical consequences, present ongoing threats to human health
- Pediatric-specific preparedness, prevention, and response guidance is often lacking
- A national network of pediatric ID SMEs could serve a role in providing time-sensitive pediatric-specific guidance to hospitals, healthcare personnel, parents, and communities





**KEEP
CALM
WE HAVE
A SOLUTION
FOR YOU**



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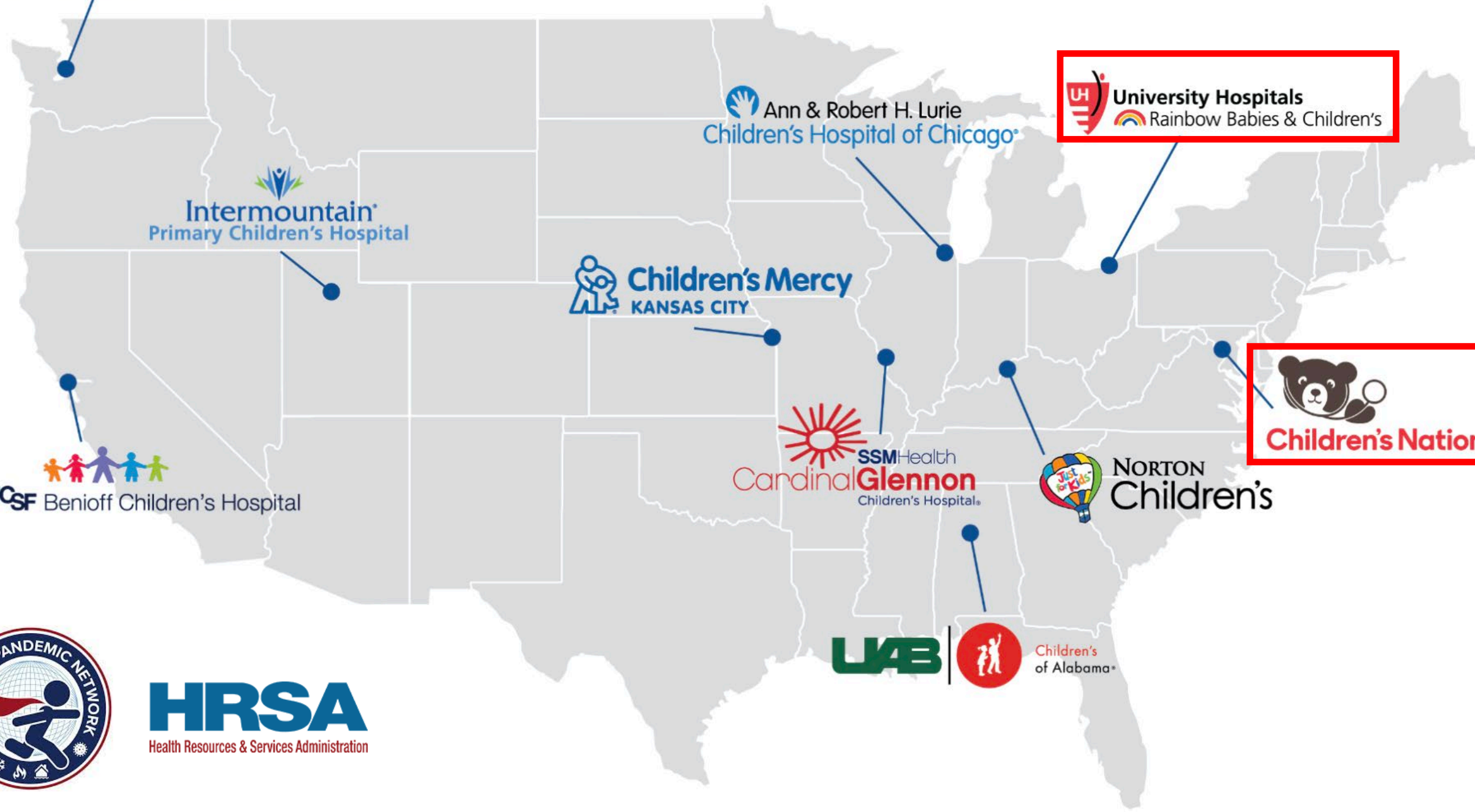


Mission: In collaboration with the nation's children's hospitals and their communities, the network will coordinate, prepare, and enable high-quality, equitable, research-based pediatric care in emergencies, disasters and pandemics.

Vision: Improving health outcomes of children and the resiliency of children, families and communities impacted by emergencies, disasters and pandemics.



Seattle Children's
HOSPITAL • RESEARCH • FOUNDATION




University Hospitals
Rainbow Babies & Children's

Ann & Robert H. Lurie
Children's Hospital of Chicago

Intermountain
Primary Children's Hospital

Children's Mercy
KANSAS CITY



Children's National

UCSF Benioff Children's Hospital

SSM-Health
Cardinal Glennon
Children's Hospital

Just for Kids
NORTON
Children's

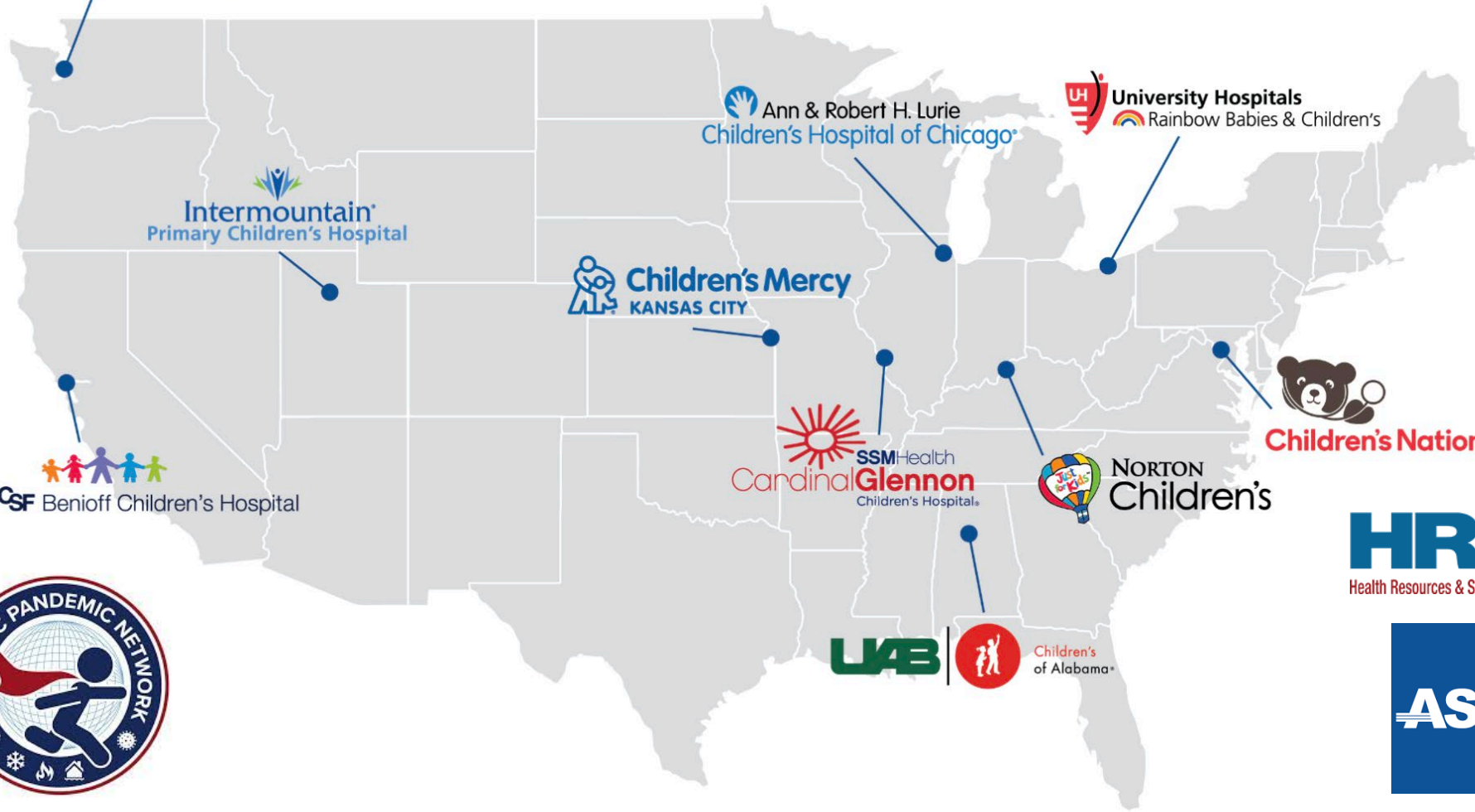
UAB
Children's
of Alabama



HRSA
Health Resources & Services Administration



EIIC
EMSC Innovation and Improvement Center



HRSA
Health Resources & Services Administration



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CULTIVATING COMMUNITY GROWING COLLABORATION



Goals

1. Increase children's hospitals partnerships with local, state, regional, and national emergency preparedness systems.
2. Collaborate with community partners to address disparities and ensure health equity.
3. Improve the pediatric emergency readiness of health care systems, including hospital and prehospital systems.
4. Increase the capability of telehealth systems to address the unique needs of children and families.
5. Accelerate the real-time dissemination of research-informed pediatric care.

HRSA Maternal and Child Health Bureau

ADVISORY COMMITTEES

EXECUTIVE CORE:
PPN PI TEAM

NETWORK OPERATIONS TEAM

SERVICE DOMAINS

- ★ Analytics
- Community Engagement
- ★ Education/Communication
- Evaluation
- ★ Health Equity
- Legal
- Quality Improvement
- ★ Research

Support Structure

CORE/EVERYDAY DOMAINS

- ★ Infectious Disease
- Medical Home
- Mental/Behavioral Health
- Pediatric Readiness
- Prehospital
- Telehealth
- Trauma/Burns

DISASTER MANAGEMENT DOMAINS

- Capacity/Capability (Surge)
- CBRN
- Deployable Assets
- Drills/Exercises
- Health Information Portability
- Patient Movement
- Reunification
- Supply Chain



OPERATIONS LEADERSHIP HUB SITE TEAM

- Rainbow Babies & Children's - *lead site*
- Children's National Hospital - *lead site*
- Benioff Children's Hospitals
- Cardinal Glennon Children's Hospital
- Children's of Alabama
- Children's Mercy Kansas City
- Lurie Children's Hospital
- Norton Children's Hospital
- Primary Children's Hospital
- Seattle Children's Hospital





Focus Areas

For the network's second year, four project areas are identified as priority efforts.

Health Equity & Community Engagement

Mental Health & Behavioral Health

Disaster Management

Infectious Diseases

PPN: Infectious Diseases Domain



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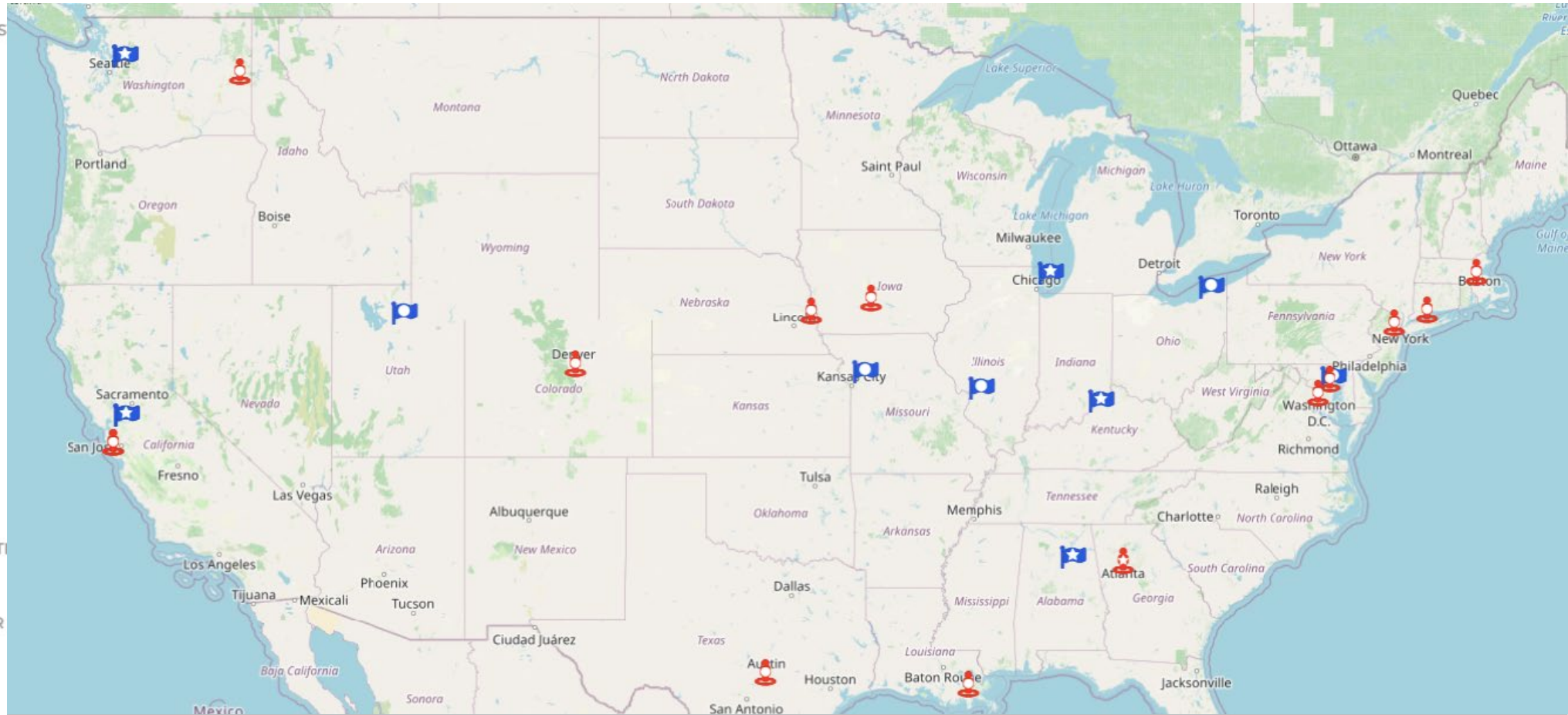
ID Domain Team

- Administrative Leadership and Governance
 - Domain PIs: Larry Kociolek (LCH), Danielle Zerr (SCH), and Nicolaus Glomb (UCSF)
 - Program Manager: Doneen West (UCSF)
 - Grant PIs: Mark Batshaw (CNMC), Chris Newton (UCSF)
- Member background
 - Subject matter experts
 - 24 PID
 - 5 PEM
 - 7 additional clinical staff
 - Project managers/ hub site managers: 12



National Representation

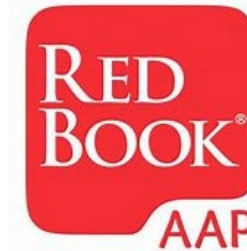
- UNIVERSITY HOSPITAL RAINBOW BABIES & CHILDREN'S
- SEATTLE CHILDREN'S
- HEALTH RESOURCES AND SERVICES ADMINISTRATION
- SSM CARDINAL GLENNON CHILDREN'S
- JOHN HOPKINS CHILDREN'S
- UNIVERSITY OF YALE, CHILDREN'S
- CHILDREN'S HOSPITAL, LA
- ST. JOSEPH'S HOSPITAL, NJ
- CHILDREN'S NATIONAL
- UNIVERSITY OF TEXAS, DELL MEDICAL
- LURIE CHILDREN'S
- PRIMARY CHILDREN'S, UT
- UNITY POINT/ UNIV OF IOWA
- CHILDREN'S HOSPITAL COLORADO
- CHILDREN'S MERCY KANSAS CITY
- UAB CHILDREN'S OF ALABAMA
- PROVIDENCE SACRED HEART MEDICAL CENTER
- CHILDREN'S HEALTHCARE OF ATLANTA
- UNIVERSITY OF NEBRASKA MEDICAL CENTER
- UCSF BENIOFF CHILDREN'S
- BOSTON CHILDREN'S
- NORTON CHILDREN'S
- LUCILE PACKARD CHILDREN'S STANFORD



External Partners/Liaisons

- HRSA
- EIIC
- WRAP-EM
- Gulf 7
- Region V
- Redbook/ AAP

- CDC
- NETEC
- NIH
- IDSA
- SHEA
- PIDS



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ID Domain Mission Statement:

Support a national framework for enhanced pediatric Infectious Diseases preparedness and response capabilities by identifying knowledge and communication gaps; collecting, creating, and curating resources; and elevating research-informed preparedness and response activities.

ID Domain Scope

Primary scope (Lead):

- Establish domain priorities
- Best-practice resource curation and dissemination
- Stakeholder consultation, communication, and advocacy
- Collaborating with internal and external stakeholders

Secondary scope (Support):

- Data collection and analysis
- Developing educational tools
- Creating of new clinical or public health guidance (only when necessary)



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ID Domain Priorities

- Infectious diseases alert response and resource dissemination
- Respiratory virus surveillance, preparedness, and response
- Closing the gap in vaccine uptake
- Special pathogens



Infectious Diseases Alert Response

- Public health officials (CDC and local DPHs) often send Health Alert Advisories to those registered to receive them
- Often with little-to-no pediatric-specific content or context
- Unmet need to contextualize to pediatric care, curate additional resources, and disseminate

March 3rd, 2023

Measles Exposure at a Large Gathering in Kentucky, February 2023 and Global Measles Outbreaks

[Print](#)



Distributed via the CDC Health Alert Network
March 3, 2023, 11:15 AM ET
CDCHAN-00488



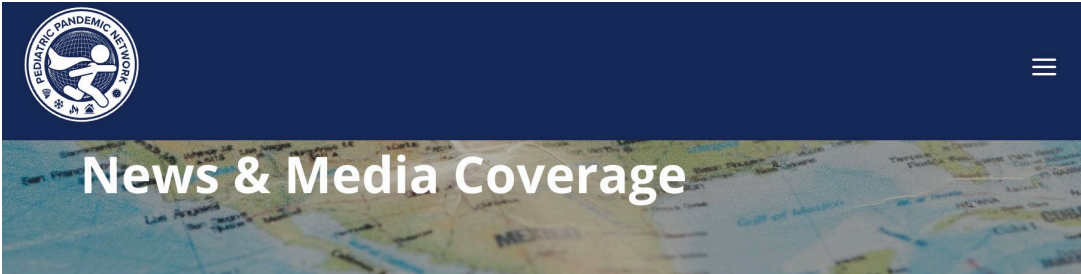
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March 6th, 2023



FAQs: Measles Exposure in Kentucky

Date updated: Mar. 6, 2023



Recent News

FAQs: Measles Exposure in Kentucky

MARCH 8, 2023

Pediatric Surge Recommendations and Resources

JANUARY 24, 2023

FAQs: Pediatric Measles Outbreak in Ohio

JANUARY 5, 2023

Prehospital Surge Resources

DECEMBER 22, 2022



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Measles Exposure in Kentucky

The Centers for Disease Control and Prevention (CDC) issued a Health Alert Network (HAN) advisory on March 3, 2023, notifying the public of a confirmed measles case at a very large gathering. Public health officials recently confirmed a case of measles in an unvaccinated individual with a history of international travel. While infectious, the individual attended a large religious gathering on February 17–18, 2023, at Asbury University in Wilmore, Kentucky. An estimated 20,000 people attended the gathering from Kentucky, other U.S. states, and other countries during February 17–18, and an undetermined number of these people may have been exposed to measles. Secondary cases resulting from this event would be expected to occur during February 24–March 11, 2023. As of March 3, 2023, no secondary cases have been identified.

For more details: <https://emergency.cdc.gov/han/2023/han00488.asp>

Which patients should I be concerned about having measles?

Patients with compatible symptoms/signs of illness AND known exposure, relevant travel, or unvaccinated status should be evaluated carefully. Washington State developed a useful screening tool [348-490-MeaslesAssessmentQuicksheetProviders.docx \(live.com\)](#) for this purpose.

What are the best ways to minimize measles exposure in your organization?

Persons with signs or symptoms of measles should be identified, provided a facemask to wear, and separated from other patients prior to or as soon as possible after entry into a facility. Place the patient in an airborne isolation room if available. If not available, use a private room and close the door. [Interim Measles Infection Prevention Recommendations in Healthcare Settings | CDC](#)

How is measles diagnosed?

For more on the clinical presentation of measles, diagnosis, and treatment: [For Healthcare Professionals - Diagnosing and Treating Measles | CDC](#)

I had an exposure event in my hospital; now what?

Per the CDC ([For Healthcare Professionals - Diagnosing and Treating Measles | CDC](#)), people exposed to measles who cannot readily show that they have evidence of immunity against measles should be offered post-exposure prophylaxis (PEP). To potentially provide protection or modify the clinical course of disease among susceptible persons, either administer MMR vaccine within 72 hours of initial measles exposure or immunoglobulin (IG) within six days of exposure. Do not simultaneously administer the MMR vaccine and IG, as this practice invalidates the vaccine.

The following references have additional information on post-exposure prophylaxis:

- [Red Book Online Outbreaks: Measles | Red Book Online | American Academy of Pediatrics \(aap.org\)](#). January 4, 2023
- [Prevention of Measles, Rubella, Congenital Rubella Syndrome, and Mumps. 2013: Summary Recommendations of the Advisory Committee on Immunization Practices \(ACIP\)](#). June 14, 2013.
- [General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices \(ACIP\)](#). January 28, 2011

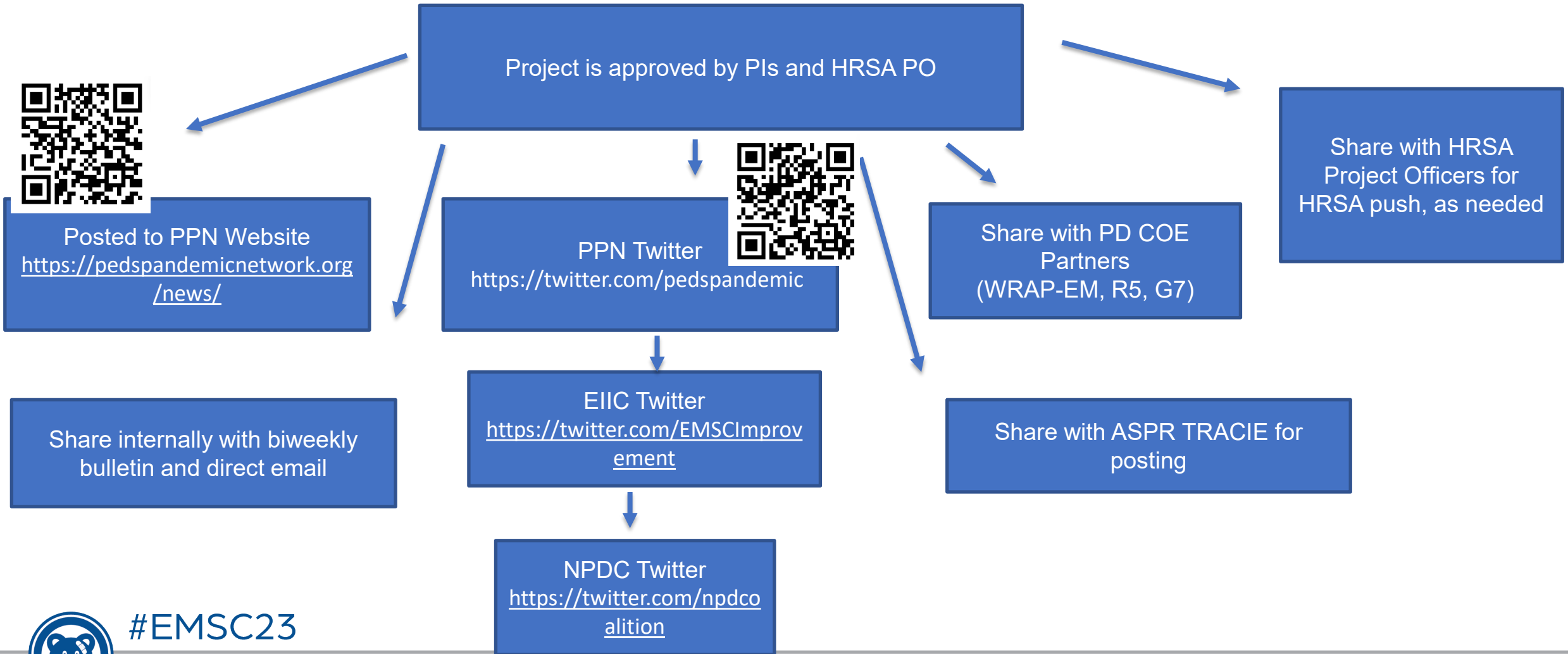
Infectious Diseases Alert Responses

- Pediatric Measles Outbreak in Ohio
- Measles Exposure in Kentucky
- Facts about *Candida auris* in Children
- Locally Acquired Malaria Cases Identified in the US
- Malaria Facts for Parents and Families
- Parechovirus (PeV) FAQs for Health Care Professionals
- Oseltamivir (Tamiflu) Shortage
- Mpox: FAQs for Health Care Professionals

- *In process*
 - Nirsevimab
 - Hospital respiratory viral surge responses (support role)



Current Dissemination Plan: Communications Team



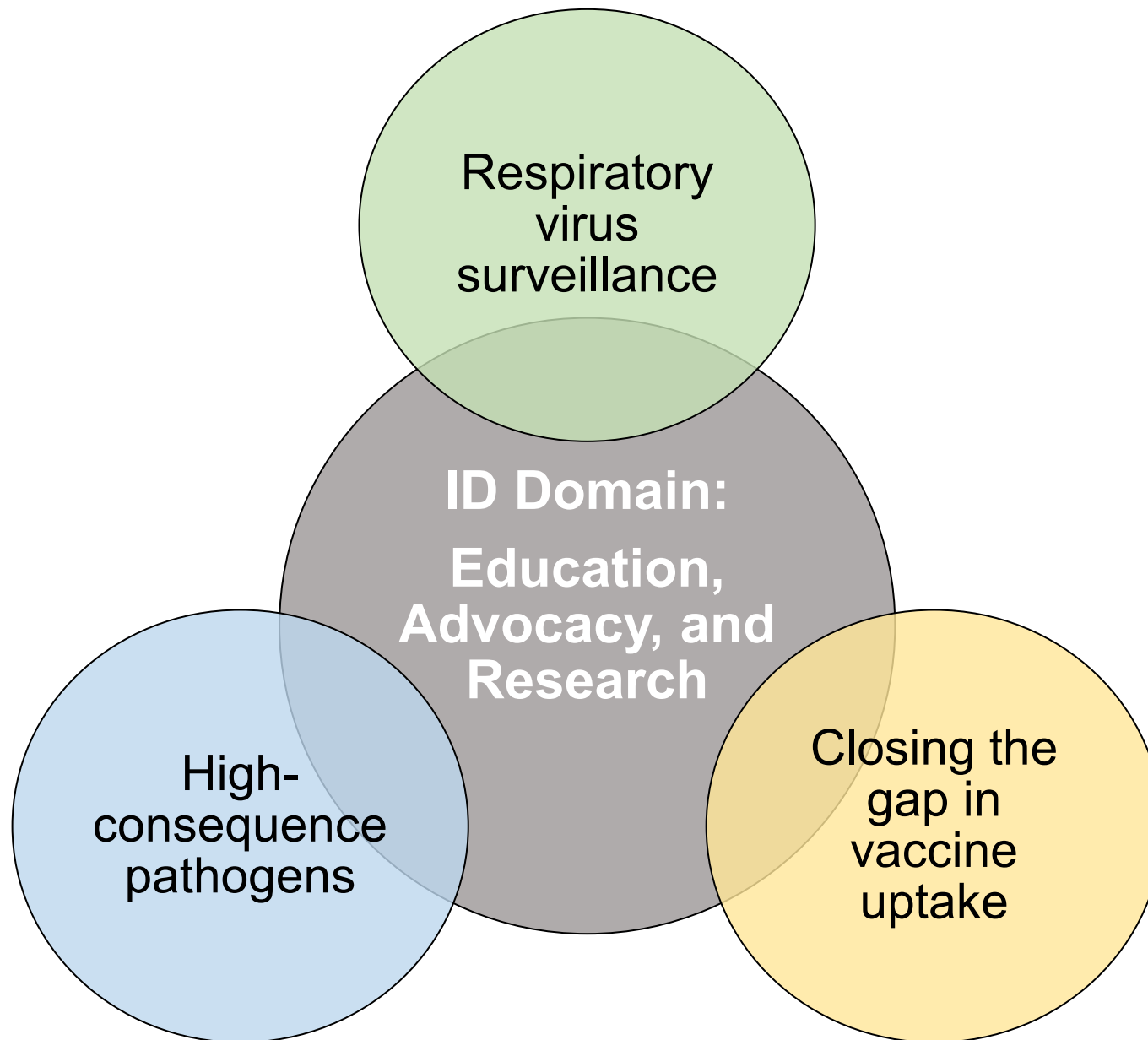
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Dissemination Plan: Unmet Needs

- Updated website design for ID-specific landing page
- Indirect push via social media and online repositories vs. *direct push to providers*
- Community-focused/directed communication
- Leveraging hub and PPN support sites, hub spokes, and Disaster Networking Collaborative (DNC)



ID Domain Priorities and Workgroups



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Respiratory virus surveillance

- Co-leads: Roberta DeBiasi (CNMC) and Jennifer Schuster (CMKC)
- Goals of workgroup
 - Develop educational resources that can be deployed in advance of or at start of a respiratory viral season
 - Understand impact of respiratory viral surges and children's hospital capacity
 - Partnership with analytics domain
 - Objectives
 - To describe pediatric licensed bed utilization over time between January 2019 and June 2023
 - To describe inpatient surge practices during the fall of 2022
 - To describe pediatric licensed ED bed utilization over time between January 2019 and June 2023
 - To describe ED surge practices during the fall of 2022



Closing the gap in vaccine uptake

- Co-leads: Vishal Naik (LCH), Annika Hofstetter (SCH), and Doug Opal (SCH)
- Subgroup goals
 - Understand key drivers of vaccine uptake gaps related to:
 - Routine childhood vaccines under normal conditions
 - Routine childhood vaccines during pandemic conditions
 - Administration of new vaccines during and after a pandemic
- Focus not only on vaccine hesitancy, but also inequities in vaccine availability, delivery, and access
- Developing a survey to identify barriers and ultimately develop solutions



High-consequence pathogens

- Co-leads: Erika Cheung (CHLA) and Kari Simonsen (UNMC)
- HCID care largely influenced by the National Emerging Special Pathogens Training and Education Center (NETEC)
 - NETEC training and guidance largely centered on adult care in adult centers
 - Many practices may lack generalizability to pediatric care
 - A pediatric special populations group exists and has lacked extensive pediatric SME involvement
- Goals
 - Partner with NETEC Pediatric Special Populations group
 - Identify priorities for pediatric-specific guidance for care of children with special pathogens
 - Initial focus on child- and family-centered care
 - Identify research partnerships (e.g., SARI-PREP, NETEC Special Pathogens Research Network)



Summary

- The PPN ID Domain can facilitate public health – hospital partnership by:
 - Advocating for pediatric-specific considerations in public health guidance
 - Identifying pediatric infectious diseases education, advocacy, and research priorities in hospital and community preparedness and response
 - Broadly disseminating educational content regarding pediatric-specific aspects of emerging and re-emerging infections

PPN News



PPN Twitter



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