



Outbreak Observatory

**Conducting operational research during outbreaks
to improve preparedness and response**

International Society for Disease Surveillance

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Project Team



Jennifer Nuzzo, DrPH, SM



Matthew Shearer, MPH



Diane Meyer, RN, MPH



Christopher Hurtado, MHS



Michael Snyder, MALD



Advisors



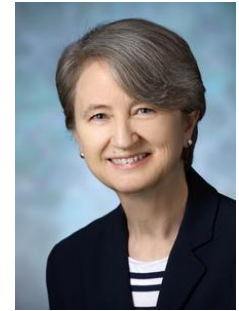
Lauren Sauer, MS



Carlos Castillo-Salgado,
MD, DrPH, JD, MPH



Athalia Christie, MIA



Noreen Hynes, MD, MPH



Tom Inglesby, MD



Anita Cicero, JD



Session Objectives

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 - Role of operational research during outbreak response in improving the evidence base for enhancing preparedness and response capabilities
 - Role of independent voice in making the case for resources and policies that support building and maintaining outbreak response capabilities
- Seeking your feedback on project rationale and approach





Origin

Outbreak Observatory emerged from the need to capture operational lessons from outbreak responses.

Rationale

- Knowledge gained from firsthand observations and analysis of outbreak response is critical for improving preparedness and response, but....
 - Valuable operational data are often lost, and key preparedness/response questions remain unanswered
 - Lack of resources/time during the outbreak preclude responders from conducting operational research
 - Information published after an outbreak response (eg, after action reports) is often insufficient and/or not shared publicly
 - After action reports are often sanitized or incident specific rather than addressing broadly applicable lessons about outbreak response

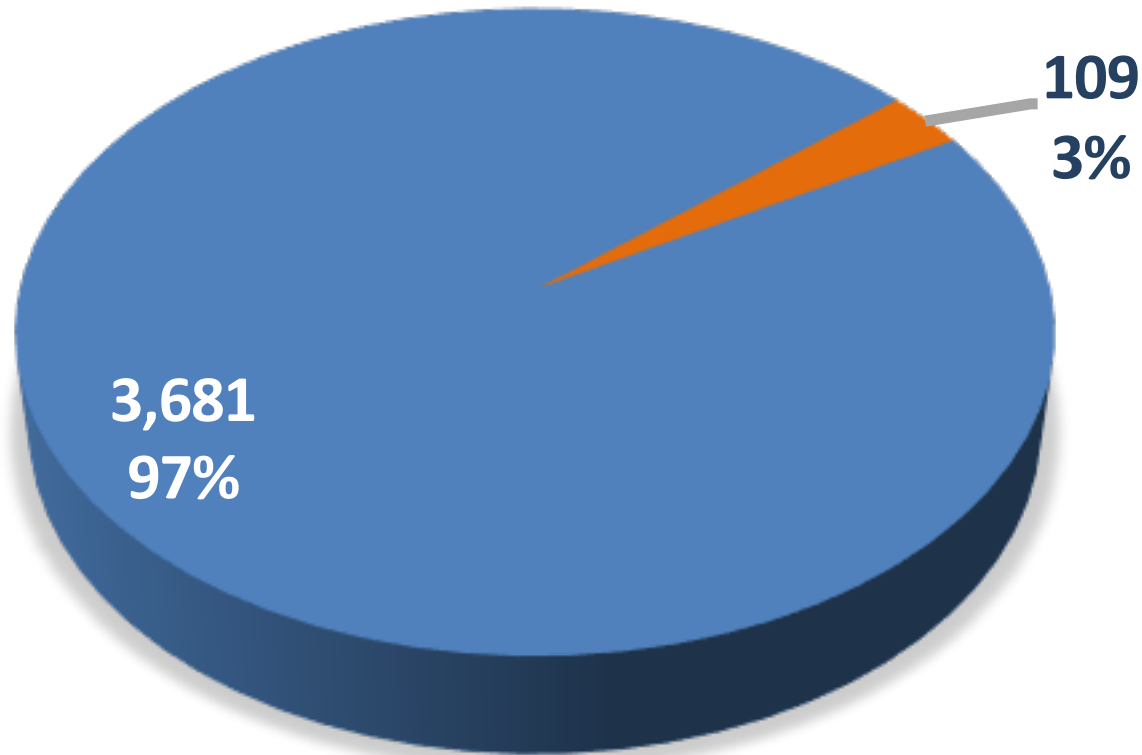


Important Unanswered Outbreak Response Questions

- H1N1
 - What were the challenges involved with allocating scarce vaccine resources among high-risk populations?
- Ebola
 - What were the most important risk communication challenges and best practices?
 - Was quarantine effective, and if so, what were notable challenges and best practices?
 - What were the resources required to implement screening and monitoring programs? What were the operational challenges and solutions?
- Zika
 - How to assess the impact and efficacy of community-based vector control efforts?
 - What are the challenges for conducting surveillance to identify local transmission, particularly for asymptomatic infections?
 - What were the biggest public health and healthcare communication challenges regarding Zika screening for high-risk populations (eg, pregnant women)?
 - How did delays in the allocation of emergency Zika funding affect laboratory capacity and testing algorithms?



Percentage of Operational Ebola Publications between 03/23/2014 - 12/31/2017



- Total Ebola Publications
- Operational Ebola Publications





Purpose

Improve outbreak preparedness by conducting analyses of outbreak responses in order to inform practitioners and policymakers about the strategic and operational challenges and requirements for responding to these types of events.

Project Focus

- Conduct **collaborative** operational research
 - What are the strategies, policies, systems, and resources needed to facilitate rapid and effective outbreak detection and response?
- Document and **disseminate** broader lessons learned
 - What challenges are inherent to outbreak responses or specific kinds of interventions?
 - We **will not** audit or critique specific local responses or agencies
- Serve as a credible, **independent voice** for the importance of preparedness and response programs and the resources necessary to implement and maintain them



Priority Areas of Inquiry

- Effective and feasible **non-pharmaceutical interventions** and other strategies to limit disease transmission
- **Medical countermeasures** distribution and dispensing
- Robust **surveillance systems** for rapid event detection and situational awareness
- Effective **public communication** strategies, during the response as well as pre- and post-event
- Meaningful efforts to **engage the clinical/healthcare community** in preparedness and response efforts
- **Public health resources and infrastructure** required to maintain and enhance preparedness and response programs



Outbreak Observatory's Contribution

- Improve the evidence base for strengthening preparedness and response activities for outbreaks and epidemics
 - Document and analyze challenges to identify strategies and systems needed to improve future responses
 - Identify generalizable best practices to share with the broader public health and preparedness communities
- Provide an independent assessment of the resources needed to prepare for and respond to outbreaks and epidemics
- Call for policies to promote effective response to public health emergencies
- Support local practitioners' efforts to publish their experiences



Methods

- Identify locations and agencies willing to partner with Outbreak Observatory
- When an outbreak occurs:
 - Develop preliminary questions that are relevant to both the local and broader public health/preparedness communities
 - Send 1-2 members of the project team to the outbreak location **OR** Work remotely with local responders
 - Engage with local officials to identify operational challenges and best practices to better understand their perspectives and experiences
- Draft findings in collaboration with local partners and submit them to a peer-reviewed journal for publication
 - Local practitioners will receive appropriate authorship credit





Outreach

Outbreak Observatory can serve as an independent voice to call for funding and other resources.

Congress Goes Home for Easter Break Without Paying for Zika Fight

by MAGGIE FOX

Congress took off from Washington Wednesday afternoon without voting to appropriate any of the \$1.9 billion the Obama administration has asked for to fight Zika and leaving top health officials feeling a little desperate.

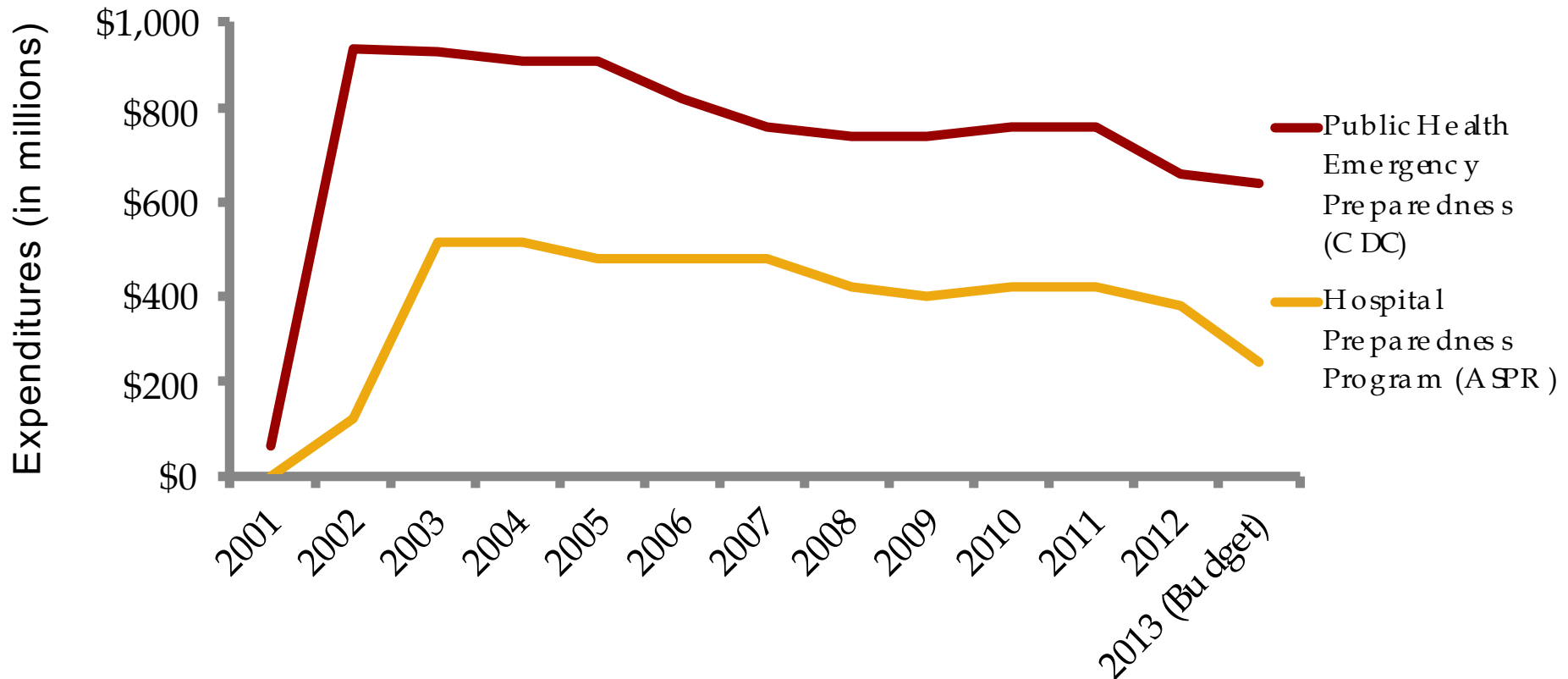
Zika continues its spread across Latin America and the Caribbean, racking up a growing number of birth defects. Cases are piling up in the U.S. territories of Puerto Rico and the U.S. Virgin Islands, and southern states from Texas to Florida are bracing for smaller outbreaks as mosquito season approaches.

But Republicans in Congress say they don't want to spend new money if they don't have to.

"There is plenty of money in the pipeline right now; money that is not going to Ebola, that was already in the pipeline, that can go immediately to Zika," House Speaker Paul Ryan, R-Wisc., told reporters this week.

**"THE LAST THING WE
NEED IS ATTENTION
DEFICIT DISORDER
ABOUT THE THREATS
THAT FACE AMERICANS."**

Funding for Public Health Preparedness



Franco C, Sell TK. Federal Agency biodefense funding, FY2011-FY2012. *Biosecur Bioterror*. 2011 Jun;9(2):117-37. Health and Human Services. Fiscal Year 2013 Budget in Brief. <http://www.hhs.gov/budget/budget-brief-fy2013.pdf>. Accessed February 21, 2012.





Recent Observations and Outreach

Observation #1– Seasonal Influenza Mass Vaccination Campaign in Taiwan



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Taiwan's Seasonal Influenza Mass Vaccination Program

- Implemented in 1998; now funded at \$40.6 million
 - 6 million doses; covers ~25% of the entire country
- Cost of vaccination is subsidized by the Taiwan CDC for a subset of priority groups, including:
 - Populations at high risk for severe disease or death
 - Populations that work in high-risk environments
 - Sources of community transmission
- Vaccinations are administered in a variety of settings
- Multi-sectoral effort includes:
 - 3,500 local clinics/hospitals
 - 370 district public health centers
 - 22 local health bureaus



Methodology

- Two members of the project team traveled to Taipei, Taiwan in October 2017 to observe the annual seasonal influenza vaccination program
 - Targeted interviews with Taiwan CDC officials and local health bureau staff
 - Site visit to a local hospital to observe vaccine storage and distribution
 - Site visits to mass vaccination events at a nursery/elementary school and junior/senior high school



Improving Preparedness for Seasonal Flu and Pandemics

- Mass vaccination program was incorporated into Taiwan's pandemic preparedness plan in 2007
- Serves as an annual functional exercise for distributing and dispensing vaccines during large-scale pandemics
 - Identifies vaccination sites and providers
 - Maintains relationships between health officials, government agencies, and the private sector
 - Raises public awareness of vaccination activities



Lessons Learned

- Forthcoming publication in *American Journal of Public Health*
- Ensure adequate personnel for vaccine distribution and administration
 - Annual mass vaccination events build relationships and infrastructure needed to respond to larger epidemics/pandemics
- Increase prevention of and surveillance for adverse events
 - Helps increase trust between public health practitioners, the public, and the media
- Targeting high-risk groups can improve overall vaccination coverage



Observation – Hepatitis A in the United States

- Outbreak Observatory is partnering with NACCHO and the Big Cities Health Coalition to study hepatitis A outbreaks occurring across the US
 - These outbreaks have occurred primarily in homeless individuals, IV and non-IV drug abusers, and their close contacts
 - Numerous hospitalizations and deaths in major cities across the country
 - California declared a state of emergency in October 2017 in response to the outbreak
- Extracting lessons to improve preparedness in unaffected communities as well as in other outbreaks in similar populations



Methodology

- Observation conducted remotely
- Interviewed public health practitioners from 8 local, county, and state health departments
 - Included states with active hepatitis A outbreaks and states anticipating outbreaks due to similar demographics
- Research questions focused on:
 - Outbreak response, including vaccination strategies
 - Risk communication and public outreach
 - Partnerships and resources
- Currently drafting findings and recommendations for publication



Outbreak Observatory Outreach

- Writeup on a local increase in pertussis cases for our #OutbreakThursday blog turned into published op-ed in *The Baltimore Sun*

There's danger in delay

Skipping vaccines, or waiting too long for them, can spread disease

BY DIANE MEYER, JENNIFER NUZZO,
AND MATTHEW SHEARER

Last week, the Maryland Department of Health reported a 15 percent increase in the number of confirmed or probable pertussis cases in the first half of this year, compared to 2016. Pertussis — also known as whooping cough — is a highly contagious respiratory disease that can

child's first birthday.

Despite this and other evidence, the percentage of parents who intentionally delayed their children's vaccinations is holding steady, according to a national survey. This should give public health officials and health care workers pause. Clearly, targeted communication strategies and additional education are needed nationwide to dispel myths about vaccines and to

that rising incidence of pertussis, which includes successive epidemics with an epidemiology similar to those in the pre-vaccine era. Yes, waning immunity in older vaccinated individuals is thought to be one contributor. But recent large outbreaks of pertussis — in Arizona in 1988, California in 2010 and 2014, Washington in 2012, and Oregon in 2012 — included a large number of children who were unvaccinated or

- Op-ed led to an inquiry from a State Legislator's office regarding state-level vaccination and exemption policies



Outbreak Observatory Outreach

- Op-ed in *The Hill* highlighted the need for continued support for core public health programs, particularly overseas



Rise in tuberculosis highlights broader global health security concerns

BY JENNIFER NUZZO AND DIANE MEYER, OPINION CONTRIBUTORS — 03/22/18 07:00 PM EDT
THE VIEWS EXPRESSED BY CONTRIBUTORS ARE THEIR OWN AND NOT THE VIEW OF THE HILL



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Upcoming Observations

- New York City Health+Hospitals
 - 2017-18 Seasonal Influenza
- Chester County, Pennsylvania
 - 2017 Mumps Outbreak



Conclusion

- We aim to work with practitioners to capture, analyze, and disseminate valuable operational information to improve the field of outbreak preparedness and response
- We continue to seek interested partners to work with during future infectious disease outbreaks
- Please contact our Outbreak Observatory team if you are interested in partnering with us!



Thank you!

jnuzzo1@jhu.edu

info@outbreakobservatory.org

www.outbreakobservatory.org



@outbreaks101



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