



# Current Gaps and Opportunities in Pediatric Disaster Science

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This work is part of the Research Domain of the PPA



# PPN Research Domain

## Objective:

We will describe trends in number, funding sources and quality of Pub Med indexed pediatric disaster literature and highlight gaps, with the goal of creating a future pediatric disaster science research agenda.





# Literature Review



# Literature Review Objectives

- We will examine numerical trends and categorize publications into which phase of the disaster cycle they most address (preparation, response, recovery, mitigation, and prevention, with the added category of education)
- We will examine changes in the number and types of publications, and funding trends, after major, publicized disasters
- We will assess the scientific quality of pediatric disaster literature using methodology based on NHLBI criteria



# Criteria

## Inclusion

- Related to stages of the disaster cycle
- Related to education (both medical and non-medical personnel)
- Inclusion of pediatric population including family units and neonates
- Papers published in peer-reviewed journals
- Articles in English
- Articles addressing disasters affecting the US
- Articles on hospital and pre-hospital operations that affect or may affect pediatrics

## Exclusion

- Non peer-reviewed literature
- Policy documents from government agencies
- Letters to the editor, commentary, or opinion pieces not based on specific disaster
- Individual patient case reports
- Articles that exclusively address adult (>18 years of age) patients/populations
- Articles on obstetrics ("birth preparedness") during a disaster that do not specifically address neonatal considerations



# Literature Search 2000-2022

Initial Search:  
967 articles  
(2000-2022)



933 articles  
screened for  
relevance



767 relevant  
articles for  
categorization



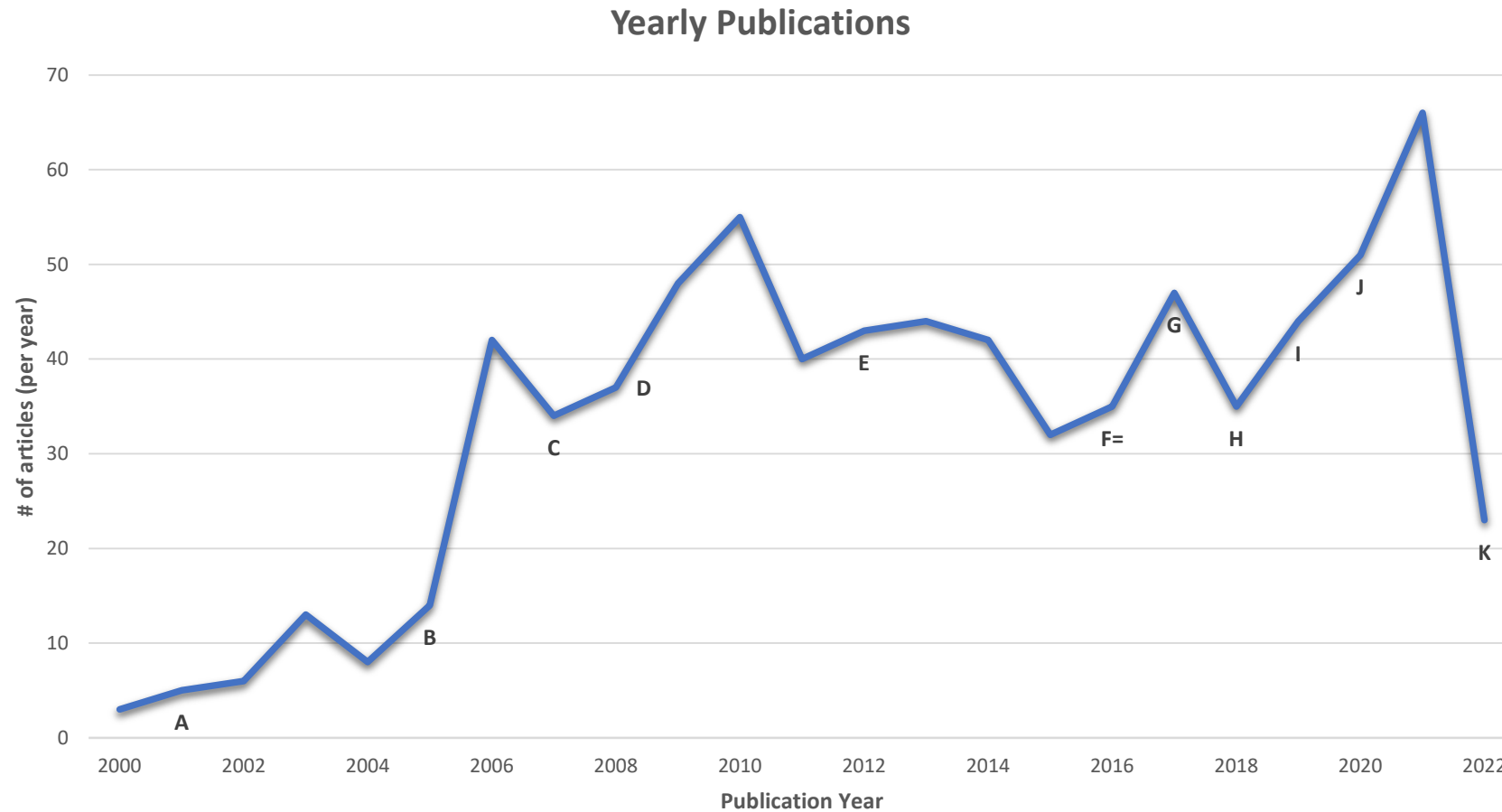
34 duplicates  
removed



166 deemed  
not relevant



# Preliminary Results



- A= 9/11
- B= Hurricane Katrina
- C= Virginia Tech shooting
- D= Hurricane Ike
- Hurricane Sandy; Sandy
- E= Hook school shooting
- Orlando Night Club
- F= shooting
- Hurricane Irma, Maria, Harvey; Las Vegas shooting;
- G CA wildfires; Sutherland = Springs Church shooting
- Stoneman Douglas high
- H=school shooting
- I= El Paso Walmart shooting
- J= COVID-19 pandemic
- K= Uvalde school shooting



# Preliminary Results

- Total number of scientific publications has increased annually since 2000
  - 3 studies in 2000
  - Peak of 66 studies in 2021
- Some reactive spikes after major natural disasters
- Approximately 10% of publications involve international disasters
- Majority of studies are focused on preparedness and response
- Paucity of studies on recovery, mitigation, and prevention



# Preliminary Results

- Emphasis on surveys, focus groups, and qualitative methodology
- Predominantly retrospective data, very few prospective studies
- <10 meta-analyses, use of studies based on retrospective data



# Summary

This work will highlight the gaps and quality of current disaster science literature and will contribute to the development of a national pediatric disaster science research agenda



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Questions?





Back-up Slides

# Methodology

- Search Strategy
  - Comprehensive Medline Search
  - MeSH (Medical Subject Headings) + key words/phrases
  - 2000-2022 *ePubs ahead of print included*
  - Exclusion criteria:
    - Single case reports
    - Adult/Geriatric focus
    - Editorials/Letters/Comments
    - Non-English articles



# MeSH Term Overview & limiters

- **Subject Heading search:**
  - Disaster Planning
  - Disaster Medicine
  - ~~Disasters~~ *focus on very specific natural disasters, ecology, weather*
- **Pediatric Limiters**
  - Medline "All Child (0-18)" limiter
  - `pediatr*`, `paediatr*`, `child*`, `adolesc*`, `neonat*`, `infan*`, `newborn*`, `teen*`





# Key words & Phrases

- National Library of Medicine indexing delay, compounded by COVID-19
- MeSH term search alone not sufficient
  - backlog of articles not yet indexed &
  - nuances of MeSH terms/indexing of this topic (*not an exact science*)
- Key words (title & abstract) also searched:
  - disaster\*, mass casualty\*, preparedness, surge plan\*, surge capacity\*, reunification, decontamination\*



# Reference Librarian - Scanning & Exclusion

- Single case reports (unless thorough literature review included)
- Comments, editorials, letters, news
- "*Birth preparedness*"
- "*Family reunification*" or non-disaster related foster/child protective services *reunification*
- Adult studies scanned for pediatric inclusion (all ages)
- Sets scanned: 698, 217, 1457, 1268
- Narrowed down to 933 for group to screen

