

# Research Priorities For Emergency Preparedness and Response for Children and their Families



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# Children and Families

- 73 million people less than 18 yrs of age
- 25% of the population
- Largest vulnerable population
  - Disabled children
  - Tech dependent children
  - 30% living at or near poverty level
- Environment and Response provided by adults

# Children and Families

- Children congregate during daytime
  - Daycare
  - School
  - Camp
  - En route
- School planning variable and not adequate
  - Often not coordinated with municipal plans
  - Notification and reunification plans rare
- Legal landscape not Clear

# Children and Families

## IOM FUTURE OF EMERGENCY CARE- Pediatric Report 2006

- Every day Pediatric Readiness inadequate
- Primary care inadequate
- Everyday mental health system in crisis
- Funds not appropriated for specific pediatric preparedness of hospitals and child health facilities
- few hospitals or communities have scalable plans for response (surge, isolation, etc.)
- Evidence base and data lacking

# Children always at Risk

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- **WTC:** 3000 lives lost
  - **Impact on children**
    - Thousands of children lost a parent, financial footing and security
- **Katrina:** 2000 lives lost
  - 2,000,000 evacuated
  - Hundreds of thousands still displaced
  - **Impact on Children**
    - 5000 separated, thousands for several months
    - Loss of home, financial footing, security
- **Tsunami/Katrina**
  - Children as victims out of proportion to population
  - Loss of parents and economic/mental health, economic stability

# Research Priorities for Children

## Guiding Principles

- Variables for children are often different than those for adults – raises issue of common definitions (utstein criteria).....
- Every public health study should address pediatric specific variables and be pediatric adequate
- All Hazards is a good thing-but not the only thing
  - Improving day to day health crises to improve preparedness is critical
- Lifetime Actuarial analysis- current investment is not adequate
- Large scale pediatric casualties-more than we can bear
- Our future and Society is on the line

# Research Priorities for Children Mental Health and Public Health Emergencies

- Mental Health and Resiliency
  - Transforming a vulnerability into a strength
- Design, implement and evaluate a process to track and distribute appropriately designed interventions to improve the resiliency of children and reduce psychological sequelae following a public health emergency.
- Expand or partner with current Model-NIMH funded
  - National Center for Disaster Mental Health
  - Dartmouth, Michigan, Yale, MUSC, Oklahoma

# Research Priorities for Children Mental Health and Disasters 2

- Model
  - Clinical Trial registry to ensure that all clinical trials are tracked whether the outcomes demonstrate a difference or not.  
(reduces report bias)
  - Required for federal funding and for publication in high impact journals

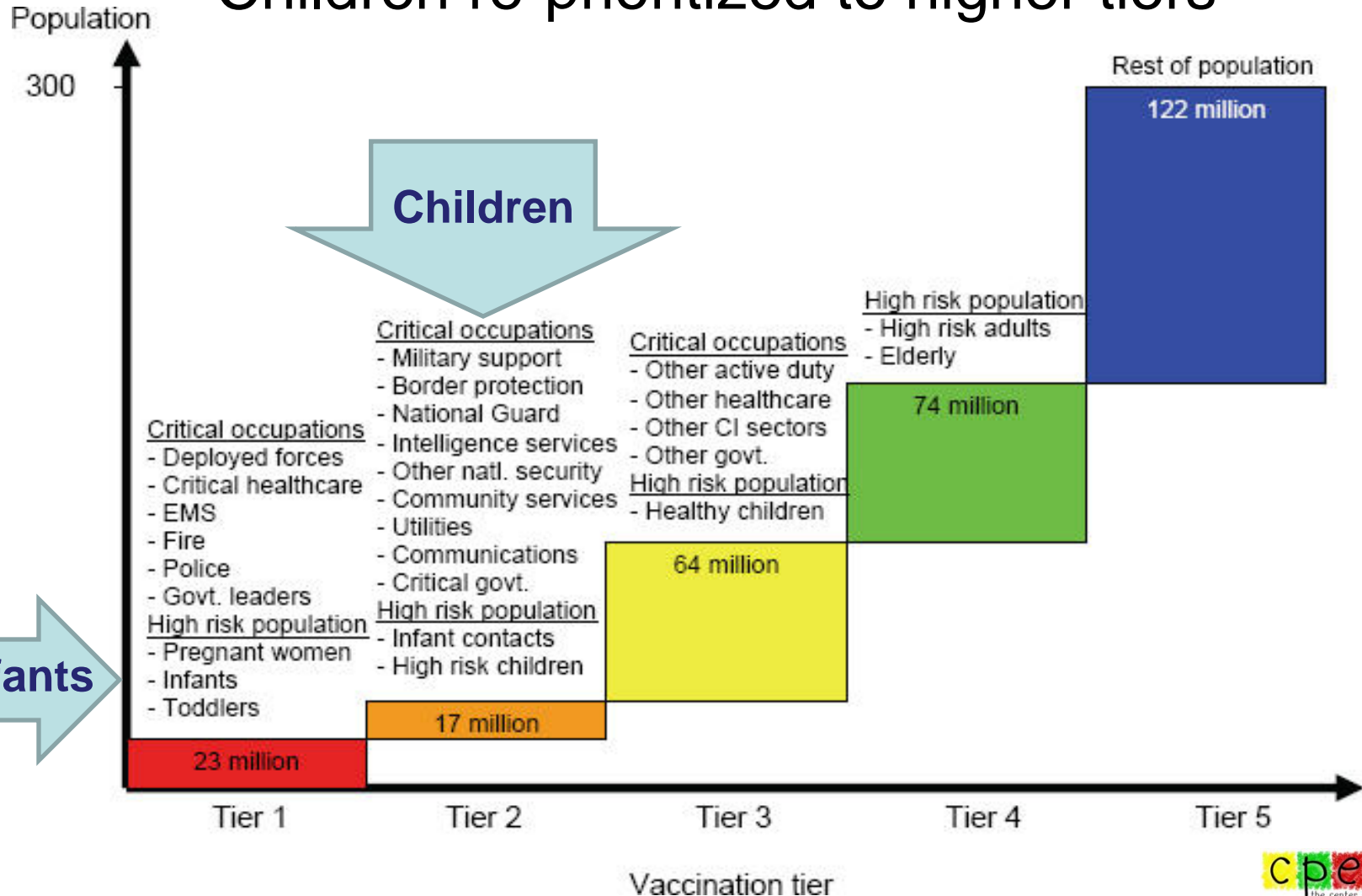
# Research Priorities for Children Mental Health and Public Health Emergencies

- Examples
  - School based interventions integrated into Health Curriculum to include evidence based strategies' to increase resilience
  - Parent focused programs to strengthen a parent's ability to psychologically support their children during times of crisis



# Avian Flu –Vaccination Priority Draft CDC Policy

- Children re-prioritized to higher tiers



# Children and Avian Flu

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- Unclear resource allocation
  - Ventilators
  - Home care
- Addressing unique pediatric problems
  - Toddlers won't wear masks, are not great at washing their hands, won't promise to not pick their noses
- Impact on Modern society of large numbers of pediatric mortalities
- Palliative care

The sudden appearance of an epidemic typically inspires rapid attention, panic and action. Once the crisis subsides, public attention wanes although the threat of contagious outbreaks, especially among the world's poor.

Compare our response to severe acute respiratory syndrome, or SARS, with the more familiar germs that plague us daily. Compare it to the dangers of smoking or getting in a car and heading out on the road. Very life is precious, and when you look at the numbers, SARS just isn't as formidable a threat as we've made it out to be. Its lethality rate is far lower than that for AIDS or malaria; noroviruses, like the one believed to cause SARS, tend to be most active in the winter and early spring.

In addition to taking the steps necessary to keep SARS at bay—watching out for new cases and isolating people who are contagious to others—we could do well to channel our energies into something more lasting: a permanent, integrated and accountable global public health system with the surveillance and prevention of the microbes that are certain to emerge in the future. Right now, worldwide accounting of disease is incomplete at best, hampered in large measure by sketchy reporting from developing countries. These gaps allowed our containment of SARS and allowed numerous to spread more rapidly than visible information. When the facts are few, it's easy for fear to fill the vacuum.

Howard Markel, professor of pediatrics and communicable diseases at the University of Michigan, is author of the forthcoming "When Germs Travel."

# THE EPIDEMIC SCORECARD

By Howard Markel and Stephen Boyle  
 Estimates of disease incidence and mortality are from the World Health Organization

**2 MILLION DEATHS A YEAR**  
**8 MILLION NEW CASES A YEAR, AND CLIMBING**

ONE THIRD OF THE WORLD'S POPULATION IS INFECTED WITH

# Tuberculosis

In the last hour, more than 200 people have died of tuberculosis.

**EACH YEAR 1 PERCENT OF THE WORLD BECOMES INFECTED WITH THE TB GERM**

INFECTIONS DROPLETS TRANSMITTED BY  
 BREATHING / COUGHING / SNEEZING / EVEN SPEAKING

TO BE EFFECTIVE, TB DRUGS MUST BE TAKEN FOR SIX TO EIGHT MONTHS

DRUG-RESISTANT STRAINS ARE INCURABLE (AND MULTIPLYING)

**MORE THAN 100 DEATHS AN HOUR**

BORNE BY MOSQUITOES

Medicines exist to fight many strains of the malaria parasite, but public health workers are concerned about drug-resistant forms of the disease. Preventive mosquito control is the most effective.

# MALARIA

**1 MILLION DEATHS A YEAR**  
**300-500 MILLION NEW CASES A YEAR**

**1 MILLION DEATHS A YEAR / 10-30 MILLION NEW CASES A YEAR**

# HEPATITIS B VIRUS

puts you at high risk for cirrhosis, liver cancer, liver failure and death

TRANSMITTED VIA

- Mother to child at birth
- Unsafe injections or transfusions
- Sexual contact

No effective treatment. Vaccine can block chronic infection, but its high cost prevents its widespread distribution in poor nations.

# DIARRHEAL DISEASES

(cholera, shigella, dysentery, typhoid, E. coli and others)

**1.9 MILLION DEATHS A YEAR**  
 mostly infants and young children

**2.7 BILLION NEW CASES A YEAR**

Within the last hour, 200 people have died of these diseases

Transmitted by contaminated food or water

**1.5 billion people do not have ready access to clean water**

# AIDS

**3.1 MILLION DEATHS A YEAR**  
**5.5 MILLION NEW CASES A YEAR**

**42 MILLION PEOPLE ARE H.I.V.-POSITIVE**

IN THE LAST HOUR, MORE THAN 300 PEOPLE HAVE DIED OF AIDS

And...

Cardiovascular disease (heart attack and stroke) deaths: 17 million a year

Tobacco-related deaths: 3.5 million a year

Motor vehicle fatalities: 1.26 million a year

# Measles

**NEARLY 900,000 DEATHS A YEAR**  
**30 MILLION NEW CASES A YEAR**

ENTIRELY PREVENTABLE WITH A VACCINE THAT COSTS 26 CENTS AND HAS BEEN AVAILABLE SINCE 1963

mosquito-borne

# Dengue Fever

**24,000 DEATHS A YEAR**  
**20 MILLION NEW CASES A YEAR**

# INFLUENZA

**250,000 DEATHS A YEAR**  
**3-5 million new cases a year**

Entire world affected

# YELLOW FEVER

**30,000 DEATHS A YEAR**  
**200,000 NEW CASES A YEAR**

# SARS

**353 DEATHS** out of 5,462 cases in 180 days

# Research Priorities for Children Emerging Infections

- Establish at least one Pediatric Pandemic Coordinating Center
  - Partner with multiple universities and industry with diverse expertise from basic research, therapeutics development, vaccination, translation, health planning, urban planning, mental health and computer simulation
  - Test and prove best practices for prevention, readiness and mitigation

# Research Priorities for Children Acts of Terrorism

- Trauma-number 1 pediatric mortality and morbidity
- All Hazards yes but...BLAST and BURNS
- Triage
  - Potentially salvageable
  - Utilizing the Trauma system in disasters
- Extending pediatric burn care capabilities beyond burn centers
  - NYS model

# Final Thought

- Public Health for Catastrophes
  - Preparing as if we were wartime England
  - Society must be Brave
  - As a nation we need to make the correct though difficult choices
  - Protection of assets and our way of life
- Need to over focus on children