

# **Community Shielding: The Role of Community Mitigation Strategies in Pandemic Planning**

FNS Presentation  
December 8, 2006

# Flu Terms Defined

- ***Seasonal (or common) flu:***
  - Can be transmitted person to person
  - Most people have some immunity
  - Vaccine is available
- ***Avian (or bird) flu:***
  - Can be transmitted from birds to humans
  - No human immunity
  - No human vaccine is commercially available
- ***Pandemic flu:***
  - Can spread easily from person to person
  - Little or no natural immunity
  - No vaccine available

# A 1918-Like Pandemic Would Take a Significant Toll Today

Severe Pandemic (1918-like) in the U.S.	
Illness	90 million (30%)
Outpatient medical care	45 million (50%)
Hospitalization	9,900,000
ICU care	1,485,000
Mechanical ventilation	745,500
Deaths	1,903,000

# A Human Story: The 1918 Pandemic

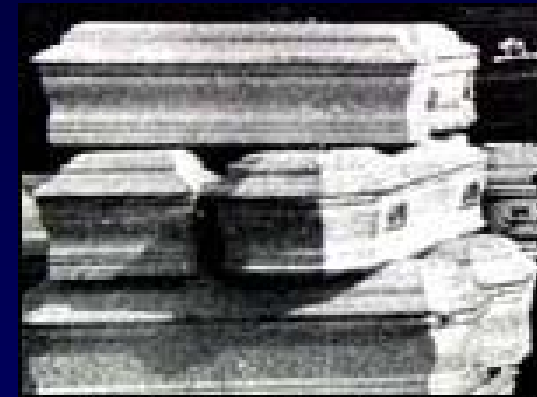


**INFLUENZA**  
FREQUENTLY COMPLICATED WITH  
**PNEUMONIA**  
IS PREVALENT AT THIS TIME THROUGHOUT AMERICA.  
THIS THEATRE IS CO-OPERATING WITH THE DEPARTMENT OF HEALTH.  
**YOU MUST DO THE SAME**  
IF YOU HAVE A COLD AND ARE COUGHING AND  
SNEEZING. DO NOT ENTER THIS THEATRE  
**GO HOME AND GO TO BED UNTIL YOU ARE WELL.**

Coughing, Sneezing or Spitting Will Not Be Permitted In The Theatre. In case you must cough or sneeze do so in your own handkerchief, and if the COMBING OF Sneezing Persists Leave The Theatre At Once.

THIS Theatre has agreed to cooperate with the Department Of Health in disseminating the truth about Influenza, and thus serve a great educational purpose.

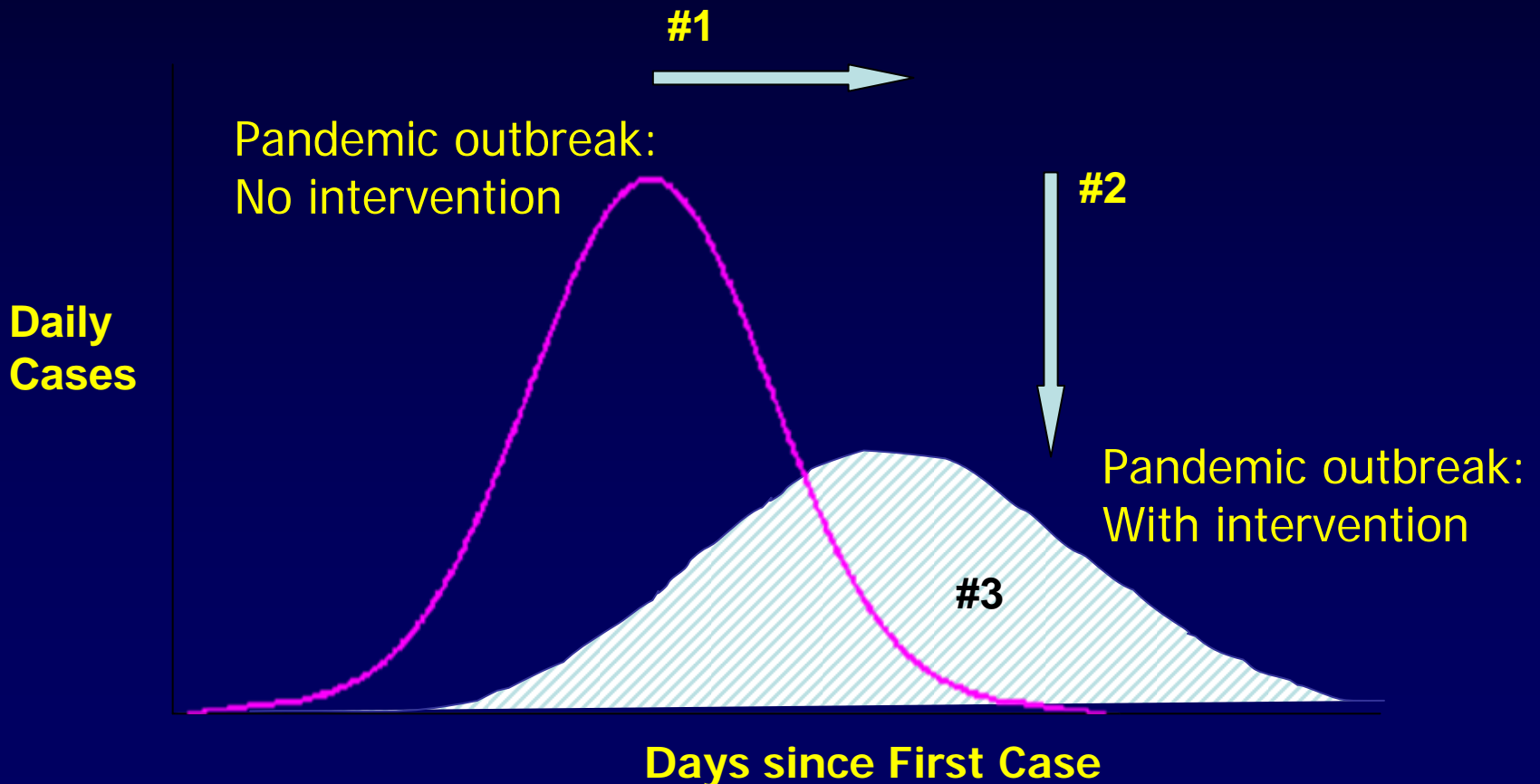
**HELP US TO KEEP CHICAGO THE  
HEALTHIEST CITY IN THE WORLD**  
**JOHN DILL ROBERTSON**  
COMMISSIONER OF HEALTH



A nationwide casket shortage was evidence of a mounting death toll.

# Community-Based Interventions

1. Delay outbreak peak
2. Decompress peak burden on hospitals / infrastructure
3. Diminish overall cases and health impacts



# Questions

During a severe pandemic, how can communities use the resources at their disposal to limit illness, hospitalization and death?

Based upon the available evidence, what planning should be done now?



# Potential Tools in Our Toolbox



- **Vaccine** – will probably be unavailable during the first wave of a pandemic
- The supply of **antiviral** medications is limited
- **Infection control and social distancing measures:**
  - Transmission Interventions (Infection Control)
  - Contact Interventions (Social Distancing)

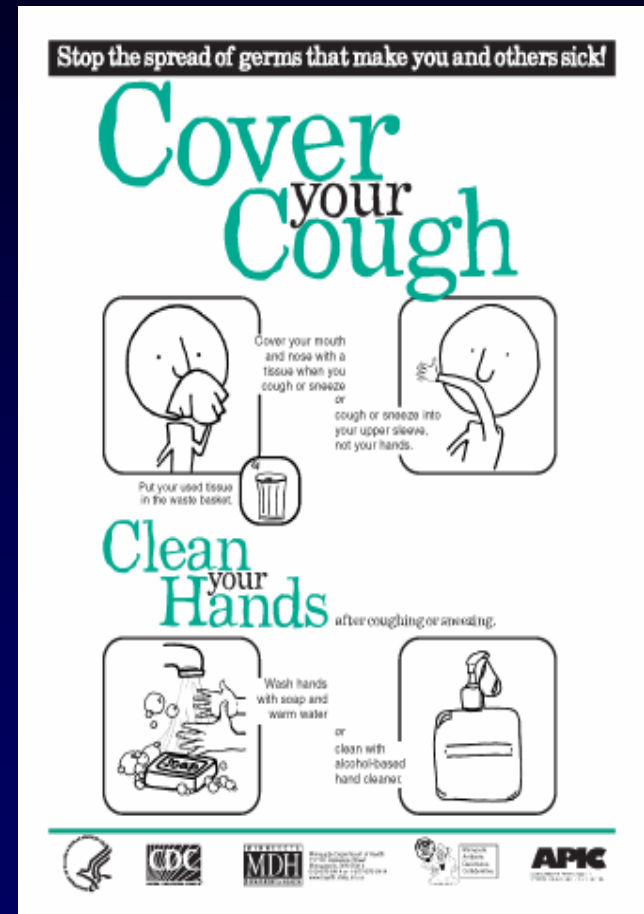




# Infection Control Measures

## Transmission Interventions (Infection Control)

- Hand hygiene
- Facemasks
- Cough etiquette
- Sick people stay home (isolation)
- Stay home if have an ill household member (voluntary home quarantine)
- Environmental cleaning



# Social Distancing Measures

## Contact Interventions (Social Distancing)

- Protect children and teens
  - School closure
  - Keeping children and teens at home
- Cancellation of mass gatherings
- Alternatives to face-to-face contact at work
- Increasing distance between people
- Decreasing number of contacts

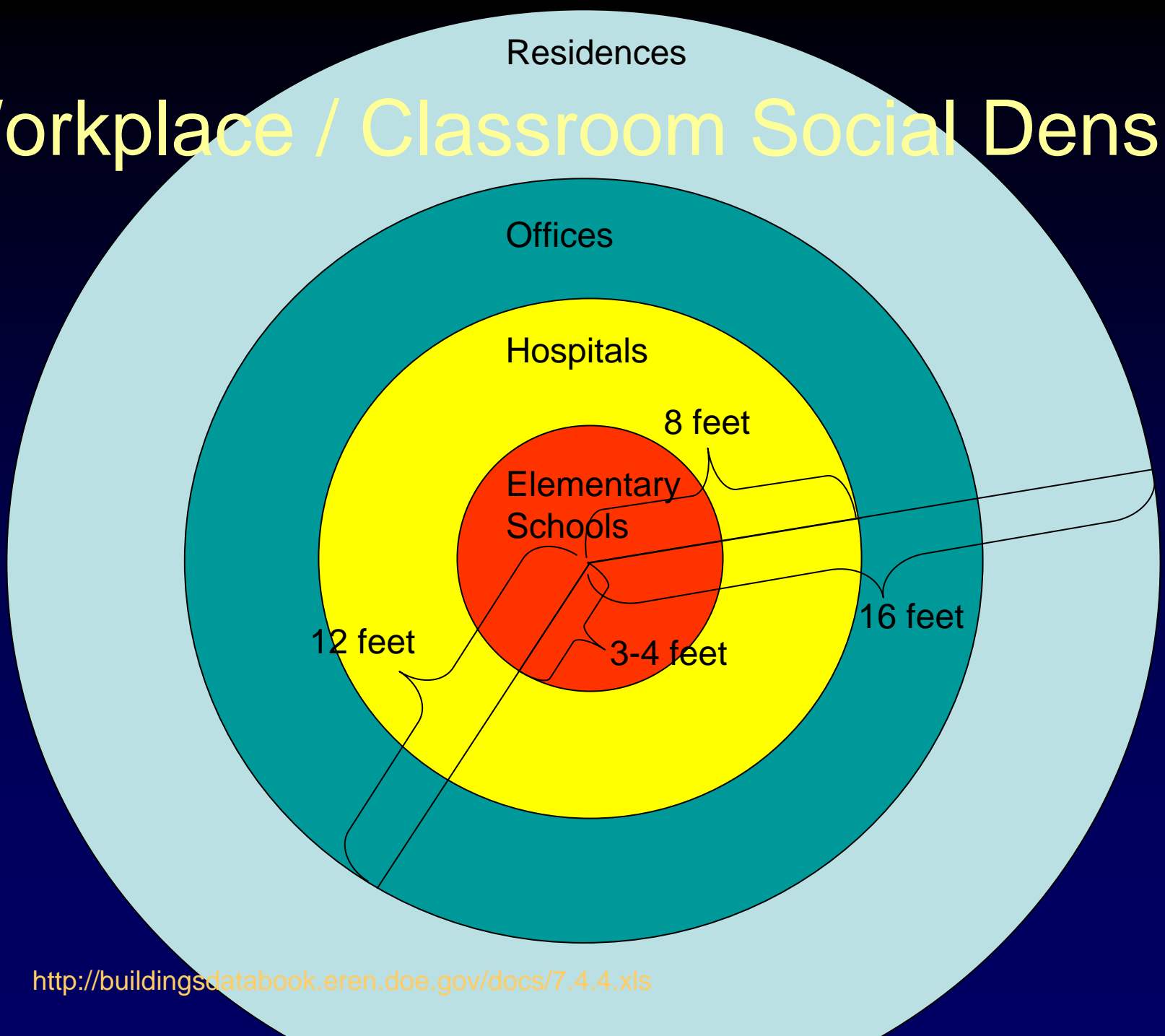
# Recent Analyses Suggest That Community Actions May Significantly Reduce Illness and Death Before Vaccine is Available

**Early and uniform implementation of:**

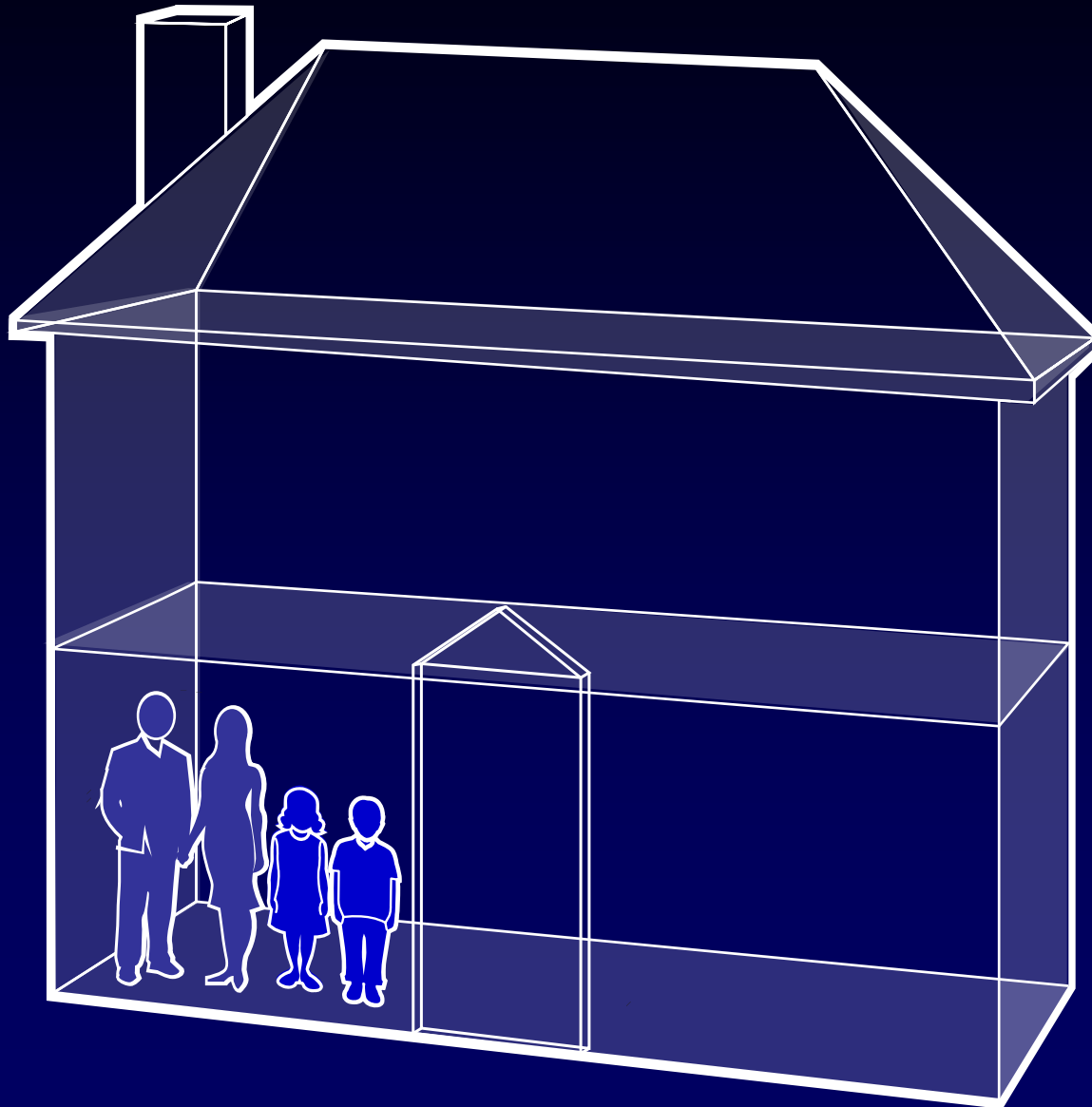
- School closure
- Keeping kids and teens at home
- Social distancing at work and in the community
- Encouraging voluntary home isolation by ill individuals and voluntary home quarantine by the household contacts
- Treating the ill and providing targeted antiviral prophylaxis to household contacts
- Implementing measures early and in a coordinated way



# Workplace / Classroom Social Density

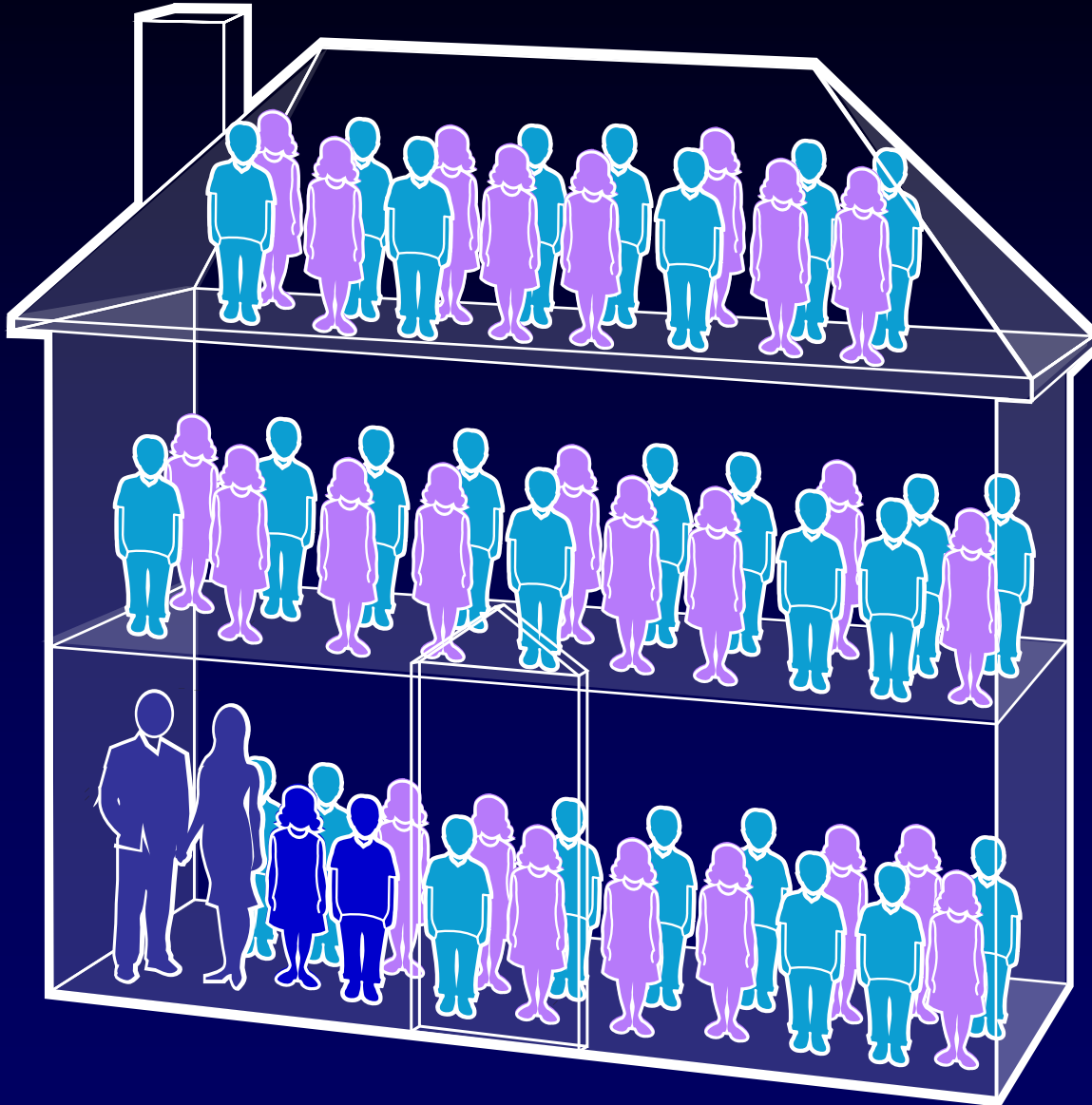


# Spacing of people: If homes were like schools



\*Based on avg. 2,600 sq. ft. per single family home

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A Tale of Many Cities:  
What Could History Teach Us?

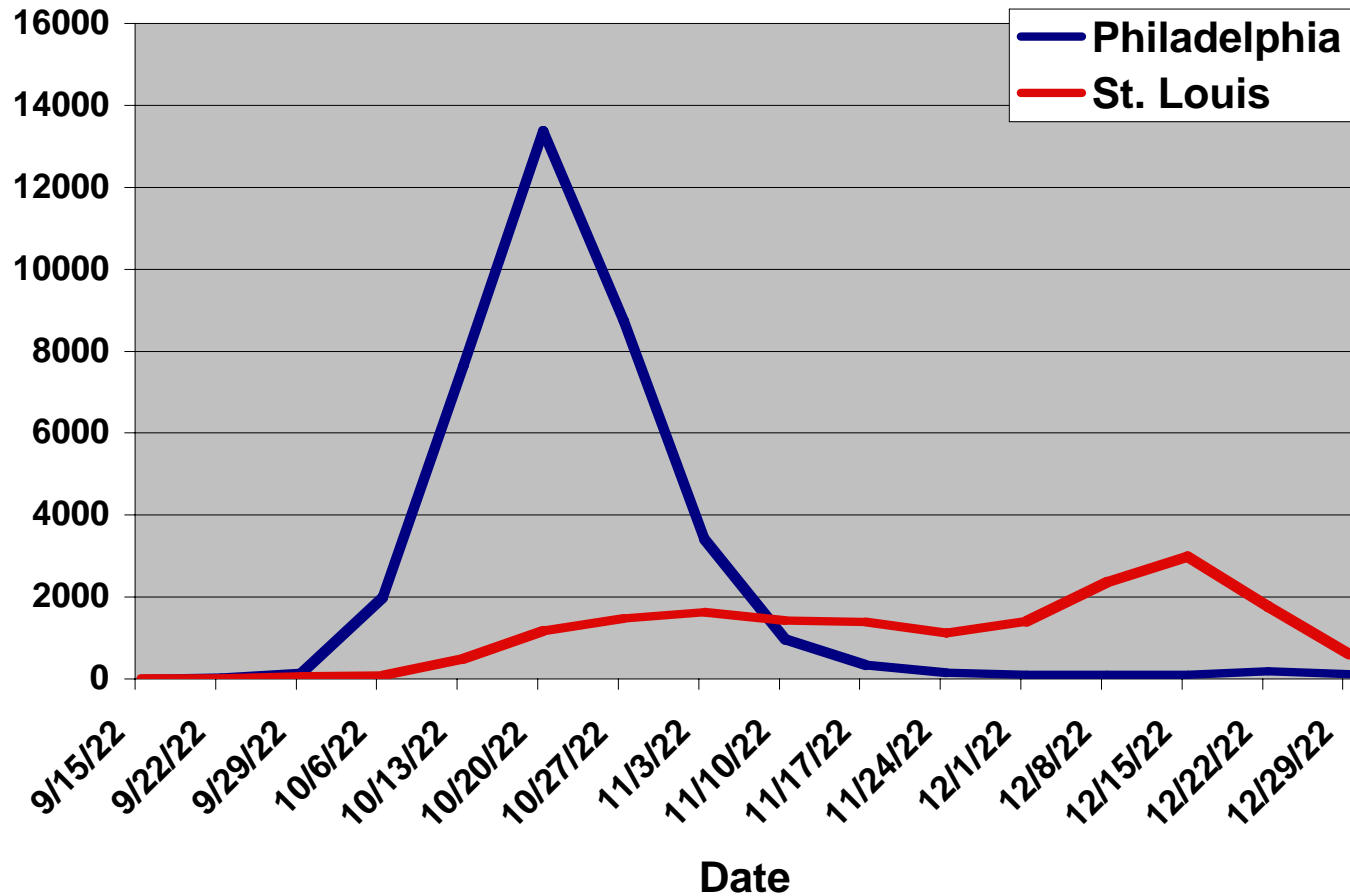


# 1918 Outcomes by City

City	First Cases	Death Rate
Boston	8/27/18	5.7
Philadelphia	By 9/11/18	7.4
New Haven	Week of 9/11/18	5.1
Chicago	9/11/18	3.5
New York	Before 9/15/18	4.1
Pittsburgh	Mid-9/18	6.3
Baltimore	9/17/18	6.4
San Francisco	9/24/18	4.7
Los Angeles	"Last days 9/18"	3.3
Milwaukee	9/26/18	1.8
Minneapolis	9/27/18	1.8
St. Louis	Before 10/3/18	2.2
Toledo	"First week 10/18"	2.0

Death rate from influenza and pneumonia / 1000 population: "Causes of Geographical Variation in the Influenza Epidemic of 1918 in the Cities of the United States," *Bulletin of the National Research Council*, July, 1923, p.29.

## 1918 Death Rates: Philadelphia v St. Louis



Weekly mortality data provided by Marc Lipsitch (personal communication)

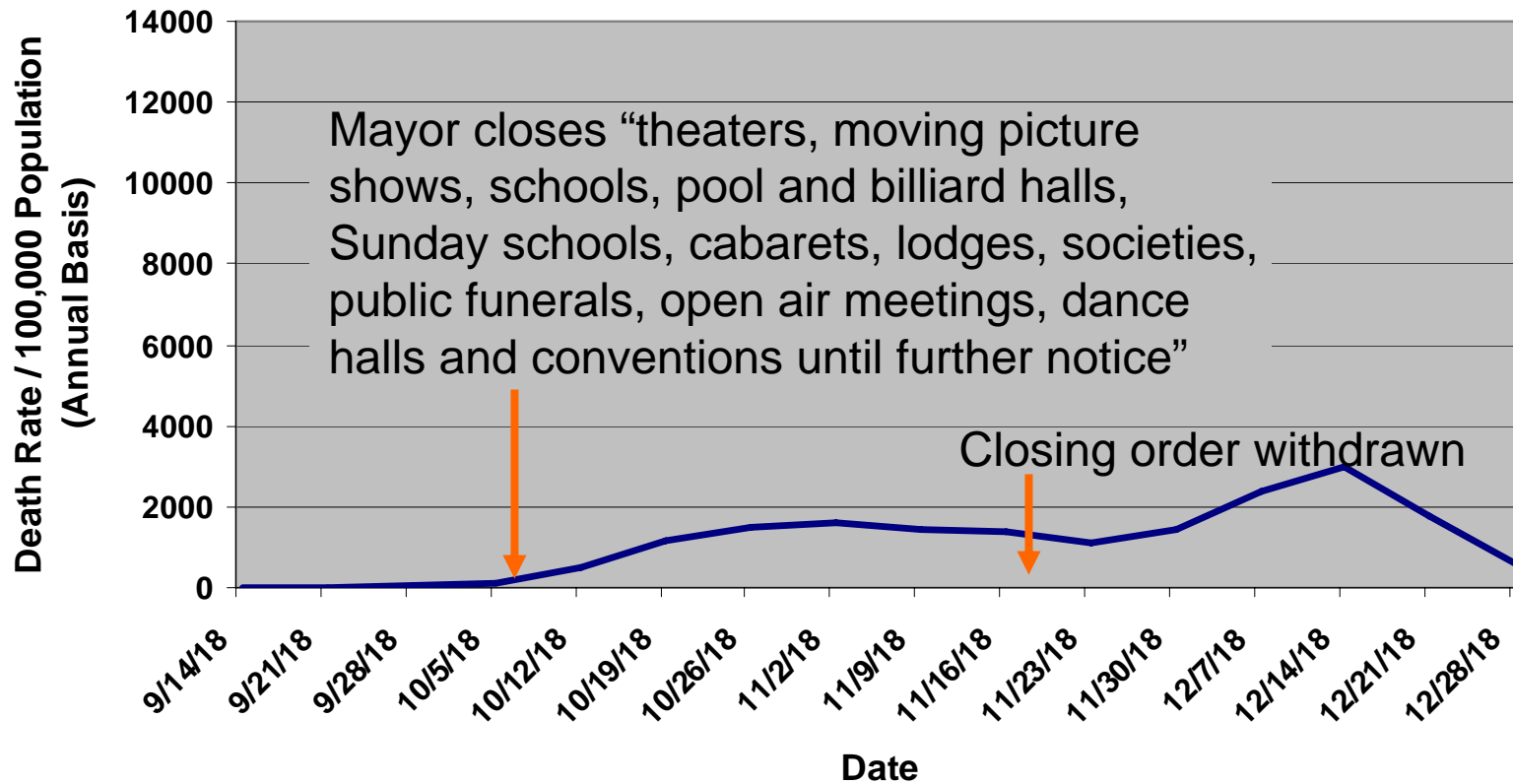
# Liberty Loan Parade - Philadelphia September 28, 1918

Photo # NH 41730 F5L aircraft hull in Liberty Loan parade in Philadelphia, 28 Sept. 1918



# St. Louis

## St. Louis



# Recent Analyses Suggest That Community Actions May Significantly Reduce Illness and Death Before Vaccine is Available

**Early and uniform implementation of:**

- School closure
- Keeping kids and teens at home
- Social distancing at work and in the community
- Encouraging voluntary home isolation by ill individuals and voluntary home quarantine by the household contacts
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# **Community Mitigation Strategies Carry Consequences That Should Be Anticipated and Incorporated into Pandemic Planning**

- Economic impact and potential disruption of services due to absenteeism
- Issues associated with school closure and sequestration of children including interruption of school meals
- Disproportionate impact on vulnerable populations

**These and other consequences may occur in the absence of community-wide interventions, as a result of spontaneous action by the public.**

# Willingness to Follow Recommendations

- Stay at home for 7 -10 days if sick 94%
- All members of HH stay at home for 7 -10 days if one member of HH sick 85%
- Could arrange care for children if schools/daycare closed 1 month 93%
- Could arrange care for children if schools/daycare closed 3 months 86%
- Keep children from gathering outside home while schools closed for 3 months 85%
- Would avoid mass gatherings for 1 month 79 – 93%

# School Lunches

*% of those with responsibility for children under age 5 in daycare or age 5-17*

Get free breakfast or lunch at school or daycare



*If schools were closed for three months, how much of a problem would it be that these children could not get these meals*





# Individual, Family, and Community Response to Pandemic Influenza

## Community Response

Be Prepared  
Be Aware  
Don't Pass it On  
Keep Your Distance  
Help Your Community

Faith-Based,  
Community,  
and Social  
Gatherings

Individuals  
and Families  
at Home

At Work

At School

# Closing Thoughts

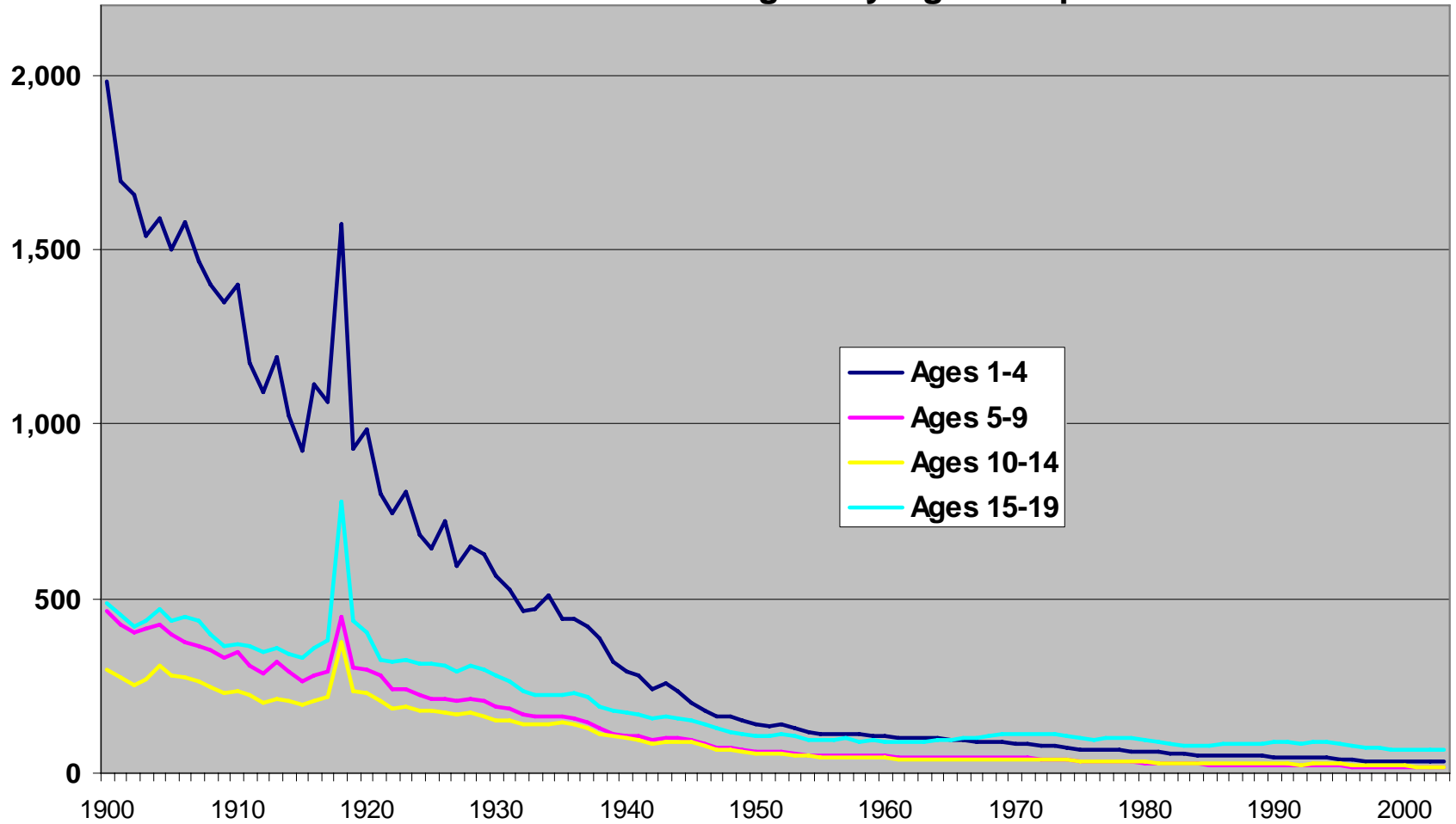
Leadership

Imagination

Resilience

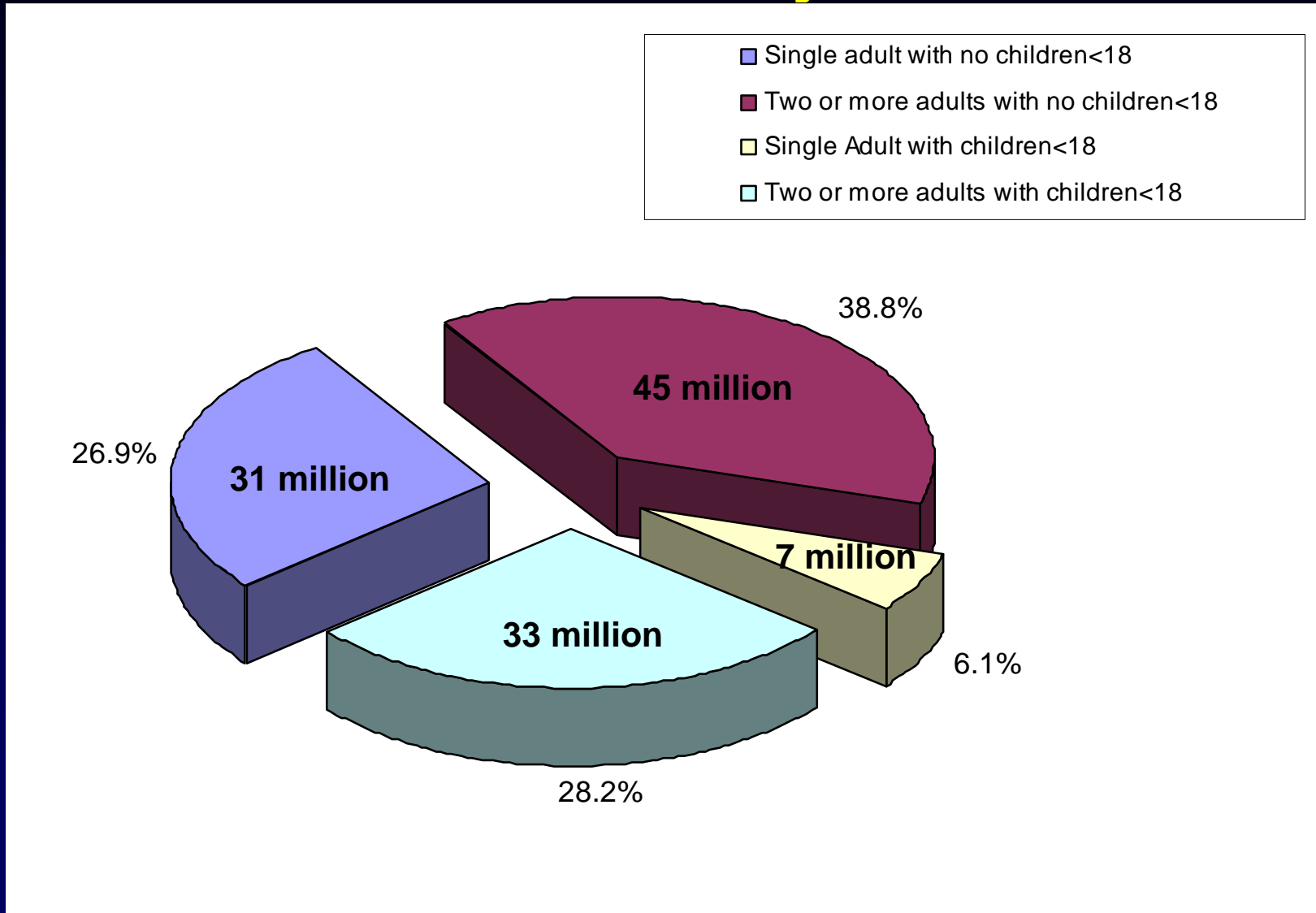
# Additional Information

## 1900-2003 All Cause Death Rates per 100,000: Children and Teenagers by Age Group



Source: U.S. Vital Statistics

# Household Survey Data 2006

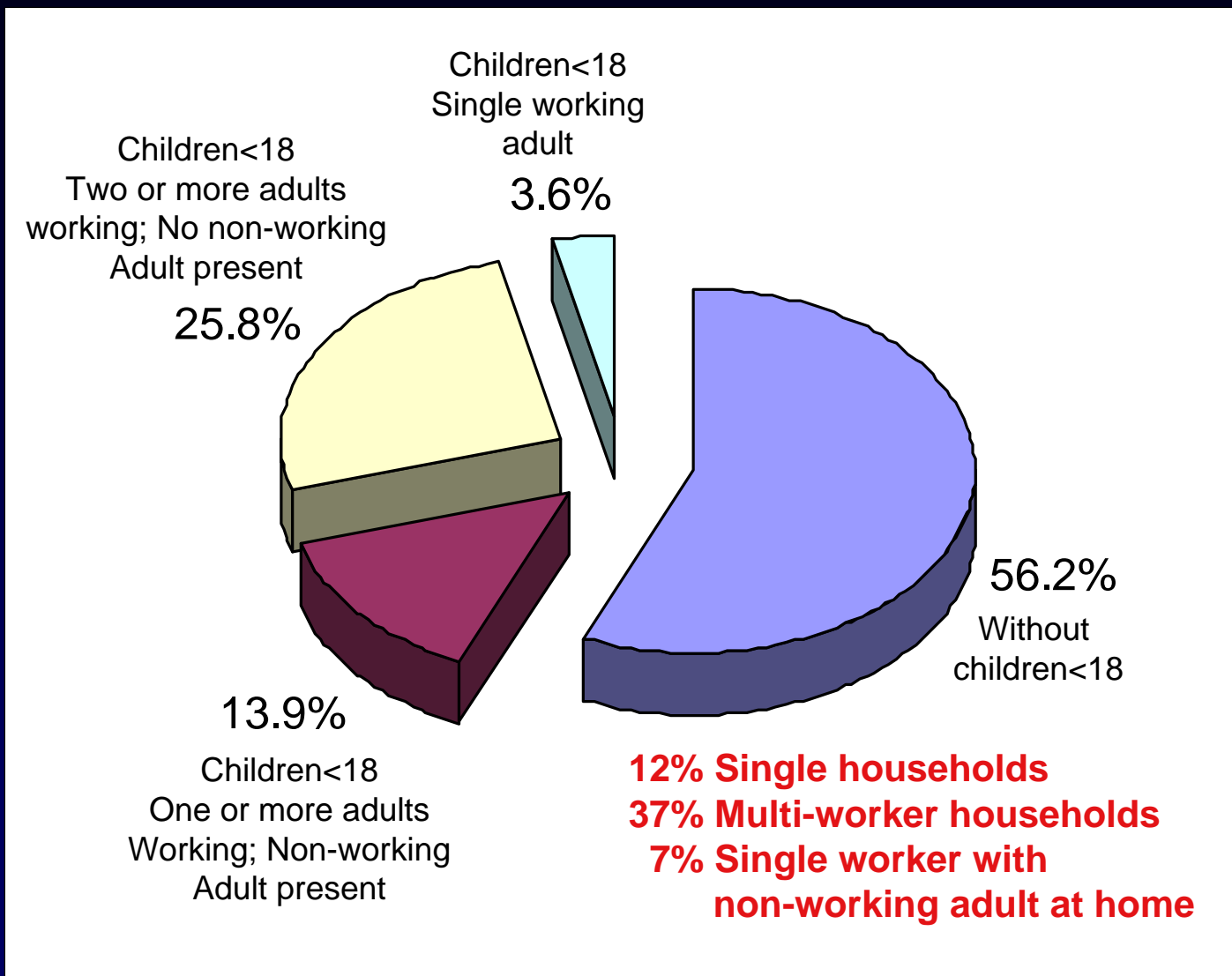


# Household Survey Data

## August 2006

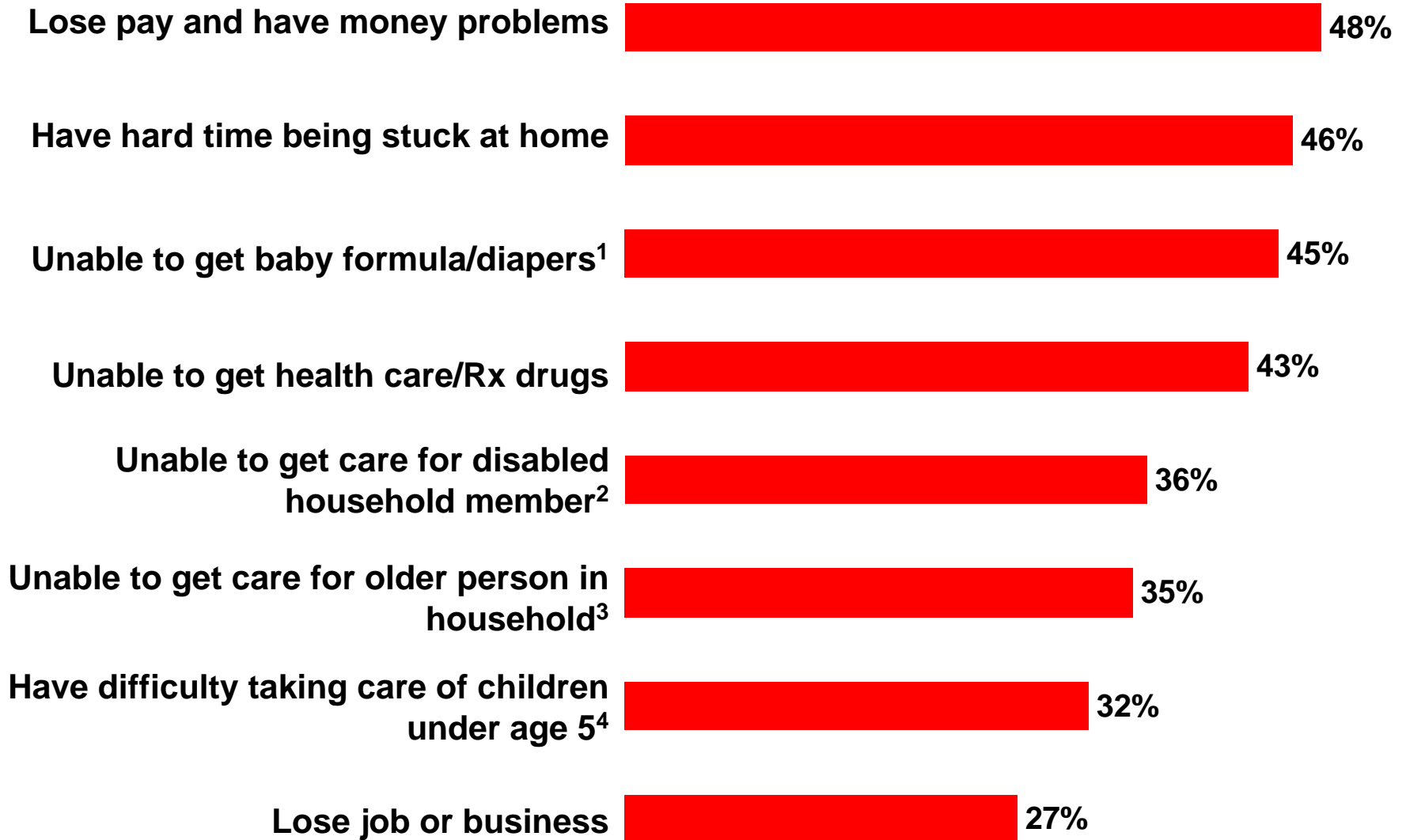
Household Survey	Households (millions)	Households: All Employed (millions)	Households: Some Employed (millions)	Households: None Employed (millions)
<b>No children&lt;18</b>				
Single adult in HH	31.2	17.2	-	14.0
Two adults	35.7	15.4	10.1	10.1
Multiple adults	9.4	3.2	5.5	0.7
Total	76.3	35.8	15.6	24.9
<b>Children under 18 years</b>				
Single adult in HH	7.1	5.1	-	1.9
Two adults	24.8	14.3	9.2	1.3
Multiple adults	7.9	2.5	5.1	0.3
Total	39.8	22.0	14.2	3.5
<b>Total</b>	116.1	57.8	29.8	28.4

# Workforce Distribution by Presence of Children and Non-Working Adults



# Likelihood of Problems with Staying at Home

*% saying likely that they or a household member would have problem if had to stay at home for 7-10 days...*



<sup>1</sup>Among those who have major responsibility for children age 0-2 in household; <sup>2</sup>Among those in households with disabled person;

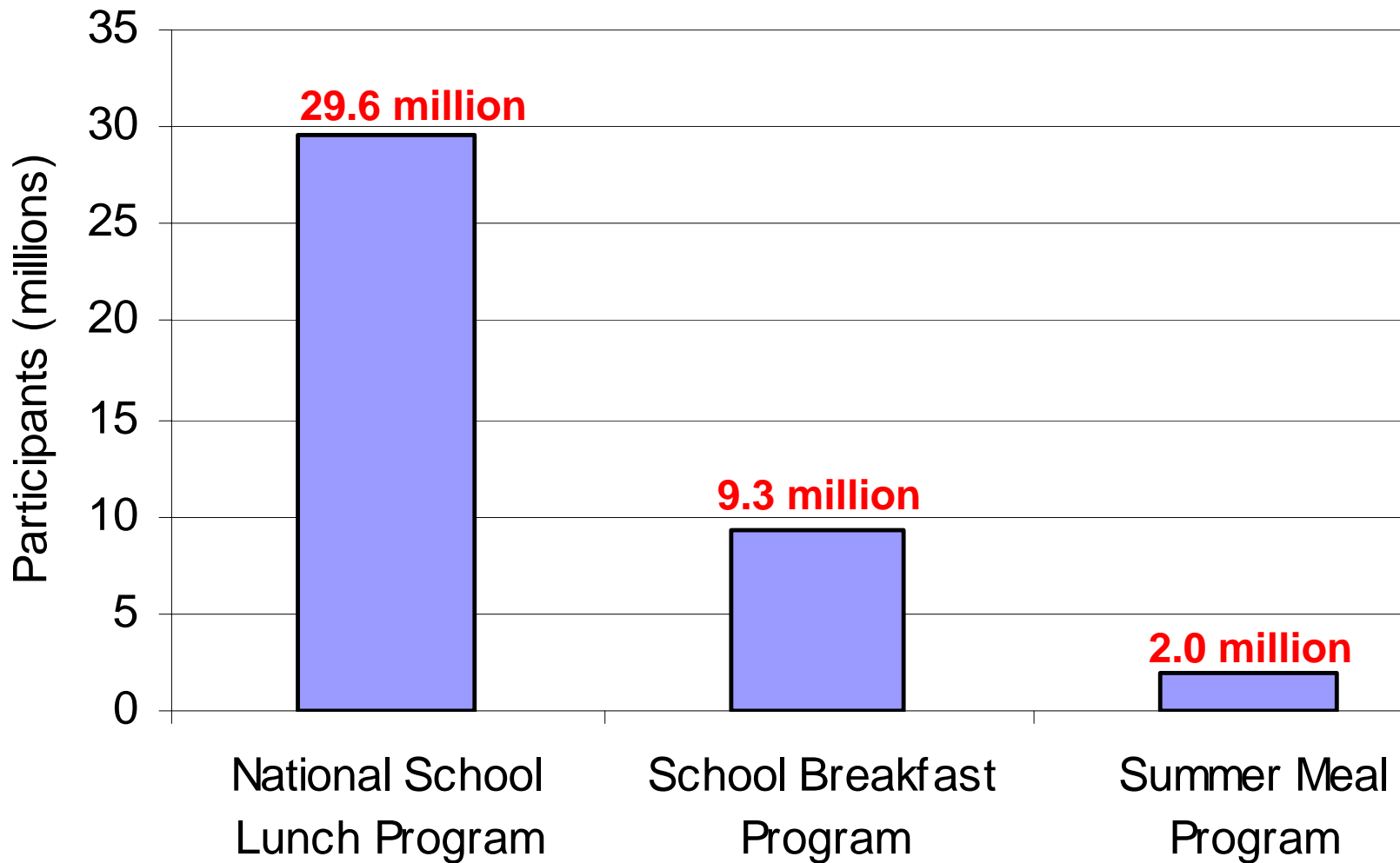
<sup>3</sup>Among those in households with person age 65+; <sup>4</sup>Among those with major responsibility for children under age 5 in household.



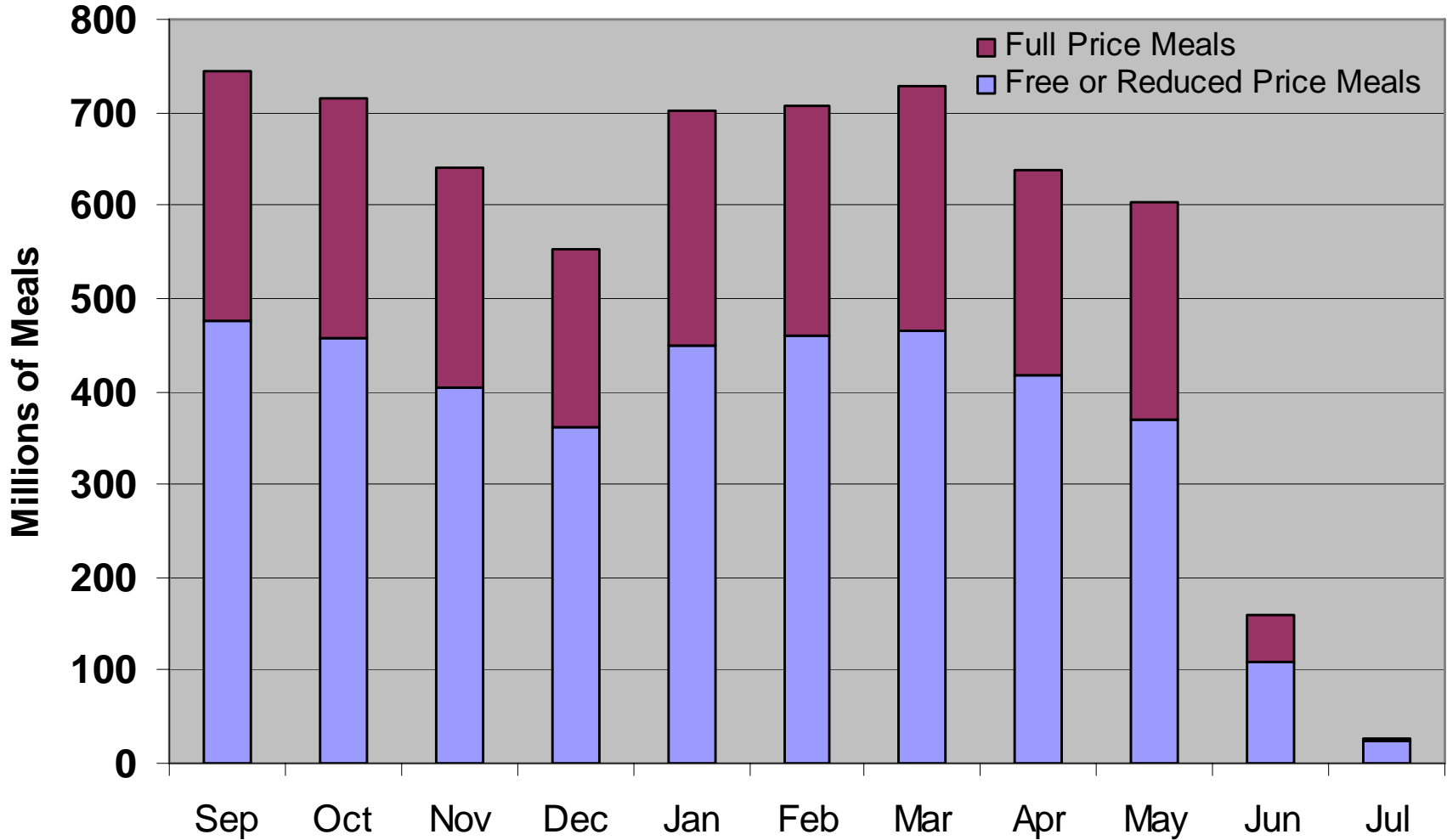
# Feeding our Children School Meal Programs



# School Meal Programs FY05

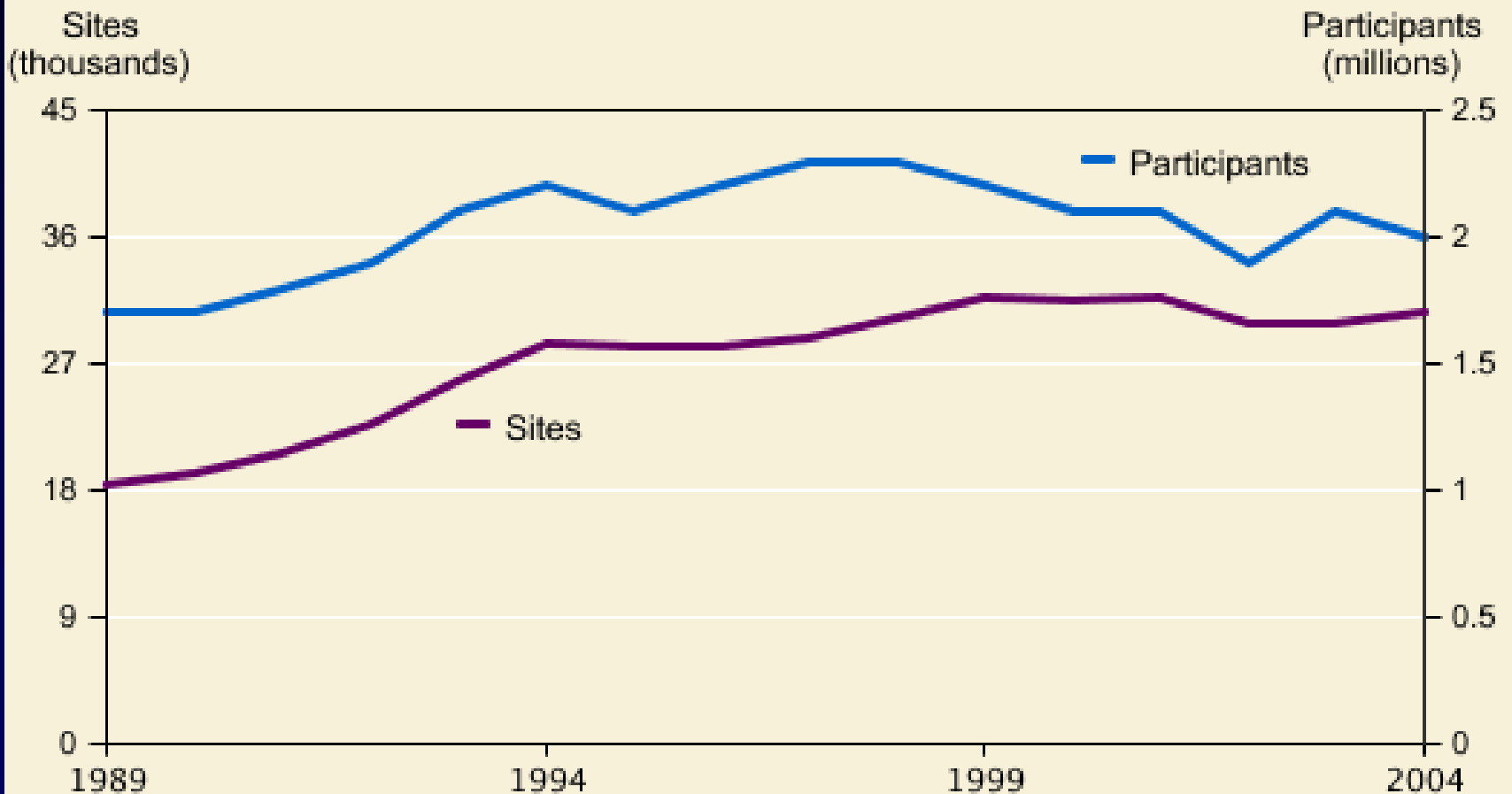


# School Meals Sep-05 to Jul-06



# Summer Meal Program

Summer Food Service Program distribution sites and average daily attendance in July, 1989-2004 (peak month)



Note: Detail may not add to totals due to rounding. All data are subject to revision.

Source: Prepared by ERS using data from FNS. Data as of June 22, 2005.

# Other Food Programs

- Food Stamp Program
  - 26 million participants
  - \$31 billion
- WIC
  - 8 million participants
  - \$5 billion
- Child Care Food Program
  - 3 million participants
  - 1.8 billion meals
  - \$2.1 billion