

# Disparities in Immunization Rates in Children and Adults

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# Disclosures

- Speaker's Bureau/Panel for
  - Merck
  - Sanofi-Pasteur



Who & Where

# US African-American Population Top 10 States

1. New York
2. Florida
3. Texas
4. Georgia
5. California
6. North Carolina
7. Illinois
8. Maryland
9. Virginia
10. Michigan

What

# 20<sup>th</sup> Century Impact of Vaccines

<u>Vaccine-preventable Dz's</u>	<u>Peak Cases</u>	<u>Cases 2006</u>	<u>% Reduction</u>
Diphtheria	30,508	0	100
Measles	763,094	55	99.9
Mumps	212,932	6,584	95.9
Pertussis	265,269	15,632	92.2
Polio (Acute)	42,033	0	100
Polio (Paralytic)	21,269	0	100
Rubella	488,796	11	99.9
Congenital Rubella	20,000	1	99.9
Smallpox	110,672	0	100
Tetanus	601	41	92.9

# Key Figures on Seasonal Influenza

- **5%-20%:** Percentage of the US population that becomes ill with influenza each year<sup>1</sup>
- **36,000:** Average influenza-related deaths per year<sup>2</sup>
  - 90% occur in persons  $\geq 65$  years of age<sup>2</sup>
  - Influenza & pneumonia: No. 8 cause of death in the US (No. 7 in persons  $\geq 65$  years of age)<sup>3</sup>
- **226,000:** Average hospitalizations per year<sup>2</sup>
  - ~63% occur in persons  $\geq 65$  years of age<sup>4</sup>

**References:** 1. Centers for Disease Control and Prevention (CDC). Key facts about seasonal influenza (flu). <http://www.cdc.gov/flu/keyfacts.htm>. Accessed January 3, 2010. 2. CDC. *MMWR*. 2009;58(RR-8):1-52. 3. Heron M, et al. *Natl Vital Stat Rep*. 2009;57(14):1-136. 4. Thompson WW, et al. *JAMA*. 2004;292(11):1333-1340.

# Health Disparities

## CDC data

- The gap between white and minority rates has narrowed, but disparities still exist among racial, ethnic and underserved populations, especially adults.
- Overall, coverage rates for children are extremely high<sup>1</sup>.
- Older adults are at increased risk for vaccine-preventable diseases
- Older Hispanic and AA adults are less likely to be immunized<sup>2</sup>.
- In 2000 children living below the poverty level had lower immunization coverage rates.

# Health Disparities

## CDC data

- Disparities are of greater concern in large urban areas with underserved populations because of the potential for outbreaks of vaccine-preventable diseases.
- 2010 is (was) the target date for eliminating disparities
  - Increase influenza and pneumococcal immunizations to 60% among all adults aged 65 years and older
  - Achieve and maintain childhood immunization rates at above 90%
- AA and Hispanic children 19-35 months of age had comparable rates of immunization for hepatitis, influenza, MMR, and polio, but were slightly less likely to be fully immunized, compared to non-Hispanic white children.

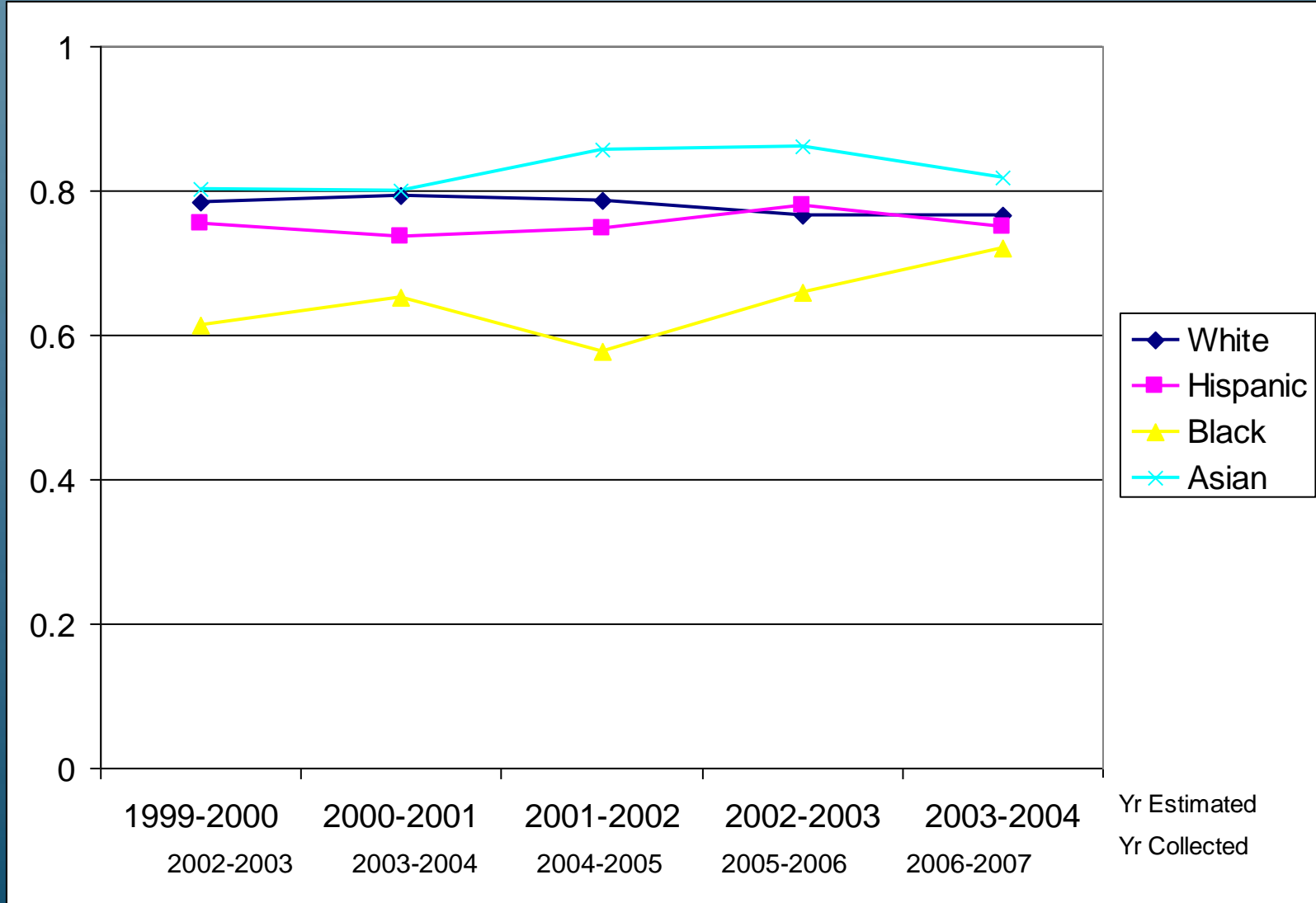
# Health Disparities

## FLU/PPV/PCV

According to Office of Minority Health

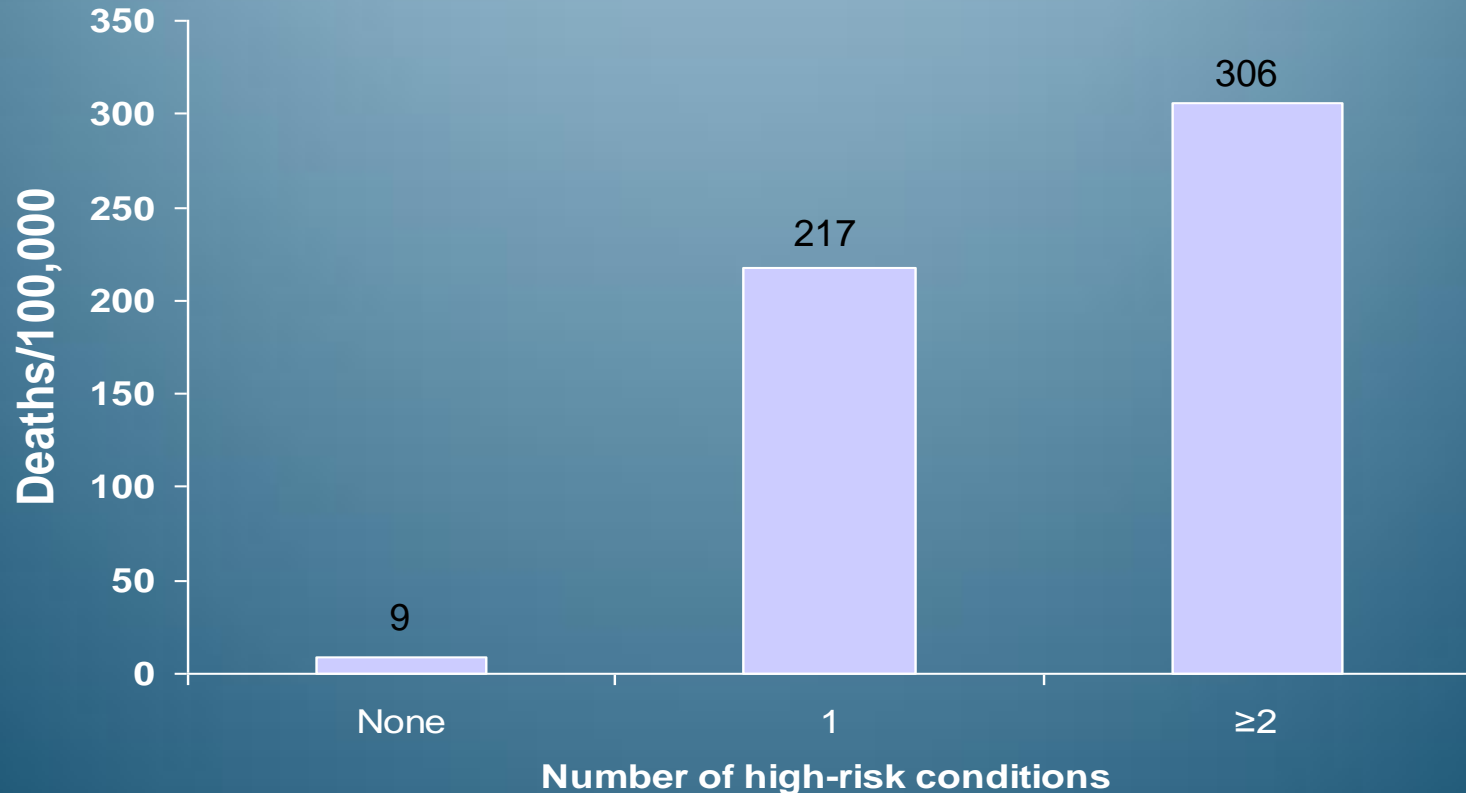
- For adults >65 the percent of persons receiving a flu shot during 2006 was **68.7% for whites and 48% for blacks**
- The pneumococcal gap is wider. Historically blacks have had a higher incidence of **invasive pneumococcal disease** than whites with the widest disparities occurring among children in the first years of life and among adults 18-64 years of age.
- Among children before the vaccine was introduced in 2000, the **incidence** among Blacks was 2.9X's that of whites. By 2002, the Black-white rate ratio was reduced to 2.2.
- The percent for adults >65 yrs who had ever rec'd a pneumococcal vaccination was **59.6% for non-Hispanic whites, and 36.9 for non-Hispanic blacks.**

# Coverage Among Kindergarten Students at 24 Months of Age by year KRS and Race and Ethnicity



# Influenza in the Elderly: Co-morbidities Increase Mortality<sup>1</sup>

**Death rates from influenza and pneumonia among persons  
≥65 years of age: epidemics in 1968-69, 1972-73**



# Disparity in Influenza Vaccination

- Gap widening even as awareness increases
- Mortality rate of pneumonia/influenza combined (65-74 yrs):
  - 50 deaths/ 100,000 for Blacks
  - 37 deaths /100,000 Whites
  - 35% higher risk of death
  - If IZ rate increased to that of Whites:
    - 1330 of 5000 Black annual deaths could be avoided
    - 500 of 2000 Latino deaths could be avoided



Why

# REACH 2010

- **R**acial & **E**thnic **A**pproaches to **C**ommunity **H**ealth
- Implemented in 1999 by the CDC
- Conducted annual risk factor surveys in minority communities to obtain information regarding the impact of:
  - disparities
  - access to care
  - general health in minority communities

# Factors Contributing to Disparities in Immunization Rates

- Complex, multi-factorial, not fully studied or understood
- Can be classified as 3 types (evidence-based):
  - Societal
  - Provider-related
  - Patient-related

# Societal

- Lack of access to quality care
- Less insurance coverage
- Limited # of primary care clinics in minority neighborhoods
- Less likely to utilize non-traditional vaccination sites
  - drugstore
  - Workplace
- Less access to hospitals, specialty care
- Language/communication barriers

# Provider-Related

- Providers in minority communities often have time & financial constraints that limit ability to provide high-quality care
- Office systems with fewer resources/ less efficient
  - may lack systems to track immunization status
  - Leads to difficulty/ uncertainty as to how to proceed with vaccination
- Lack of clear recommendation from provider of needed vaccines

# Patient-Related

- Minorities may delay seeking care for certain medical conditions
- Lower health literacy
  - patient's ability to use information from any source to make appropriate health-related decisions
- **Misperceptions**
  - Vaccine causes the disease it prevents
  - Distrust of health care system/government



What To Do...

# Overcoming Barriers: Strategies for Success

- **Societal:**
  - \_ Costly
  - \_ Require government intervention
  - \_ Health Care Reform(!)
  - \_ Widest impact
  - \_ May be the most sustainable(?)

# Sociteal Interventions: State influence

- Can make a difference in improving immunization rates
- Communicate through state conference calls
- Adolescent coordinator partnership and goal-setting tactics
- Reach out to AAP chapters
- Influence HCPs to immunize at every opportunity
- Reinforce existing policies to all HCPs, health departments, and child-care centers

# Sociteal Interventions: Immunization Coalitions

- Support improved, year-round immunization practices
- Leadership commitment through coalition meetings
- Communicate opportunities and approaches to improving immunization rates to coalition members
  - Newsletters
  - Chapter meetings
- Encourage measurement and assessment of adolescent immunization rates in health-care settings (AFIX model [at WHC])

# Overcoming Barriers: Strategies for Success

- **Patient-Related:**

- Improve health literacy
  - importance of preventive care, including vaccines
  - understanding of risk factors
  - awareness of available screening tools
  - use racial/ethnic-specific methods of communication
    - study demonstrated minorities rated health departments ministries, TV, radio community centers as sources of use health information differently than a controlled group of Whites
    - Approach is to use community-based organizations (CBOs) to communicate message

# Main Reasons for Not Getting an Influenza Vaccination in the Past 12 Months

<b>Reason</b>	<b>% n=738</b>
Do not need it	32
Influenza vaccine causes influenza	18
General excuses	16
Influenza vaccine doesn't work	6
Active refusal of influenza vaccine (without specific reasons)	5
Access and cost issues	5

# Parent Attitudes About Influenza Disease and Vaccination

- 47% of parents thought their child was unlikely to contract influenza
- 70% thought influenza vaccine could cause influenza
- 21% thought influenza vaccination unsafe for a 1-year-old child

# Myths and Misconceptions About Vaccines

- Diseases had already begun to disappear before vaccines were introduced.
- The majority of people who get a disease have been ***vaccinated!***
- “Hot lots” of vaccine that have been associated with adverse events and deaths.
- Vaccines cause harmful side effects, illnesses, and even deaths.
- Vaccine-preventable diseases have been virtually eliminated from the United States
- Giving a child multiple vaccinations for different diseases at the same time increases the risk of harmful side effects and can cause overload of the immune system.

# More Childhood Vaccines— But Fewer Antigens

Thanks to advances in technology, vaccines today contain fewer antigens. Even with more vaccines, the total immunologic load is much less.<sup>1,2</sup>

Number of Immunogenic Proteins and Polysaccharides Contained in Vaccines Over the Past 100 Years

1900		1960		1980		2000	
Vaccine	Proteins	Vaccine	Proteins	Vaccine	Proteins	Vaccine	Proteins/ Polysaccharides
Smallpox	~200	Smallpox	~200	Diphtheria	1	Diphtheria	1
<b>Total</b>	<b>~200</b>	Diphtheria	1	Tetanus	1	Tetanus	1
		Tetanus	1	WC- Pertussis	~3000	Acellular pertussis	2-5
		WC- Pertussis	~3000	Polio	15	Polio	15
		Polio	15	Measles	10	Measles	10
		<b>Total</b>	<b>~3217</b>	Mumps	9	Mumps	9
				Rubella	5	Rubella	5
				<b>Total</b>	<b>~3041</b>	Hib	2
						Varicella	69
						Pneumococcus	8
						Hepatitis B	1
						<b>Total</b>	<b>123-126</b>

WC = whole cell.

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References: 1. Offit PA, et al. *Pediatrics*. 2002;109(1):124-129.

2. CDC. *Vaccines and How They Work*. 4th ed. CDC, National Immunization Program, Immunization Services Division; 2004.

# General Messages for Parents/Patients About Vaccines

- Vaccines have a long history of proven safety<sup>1</sup>
- Vaccines keep once-common diseases uncommon<sup>2</sup>
- A choice not to get the vaccine is a choice to be at risk for the disease<sup>2</sup>
- More vaccines mean fewer infectious diseases<sup>3</sup>
- Diseases that have all but disappeared can make a comeback if vaccination rates decline<sup>4,5</sup>

**References:** 1. CDC. Vaccine safety information for parents. <http://www.cdc.gov/vaccinesafety/basic/parents.htm>. Accessed January 29, 2009. 2. Vaccine Education Center, Children's Hospital of Philadelphia. Vaccine safety: Frequently asked questions. <http://www.chop.edu/consumer/jsp/division/generic.jsp?id=75743>. Accessed February 3, 2009. 3. Offit PA, et al. *Pediatrics*. 2002;109(1):124-129. 4. CDC. *MMWR*. 2008;57(33):893-896. 5. CDC. *MMWR*. 2009;58(3):58-60.

# Communicating with Vaccine-reluctant (Patients)/Parents<sup>1</sup>

- Overcome communications challenges
  - Acknowledge concerns; establish rapport: trust is vital
  - What's the origin of the concern: Fear? Lack of knowledge? Experience? Emotions? Beliefs?
  - Keep communication clear, compassionate, confident
- Emphasize that safety is the top priority for everyone
  - Vaccine safety monitoring is ongoing, rigorous
  - Discuss specific risks of vaccine-preventable diseases
- Offer educational resources
  - Vaccine Information Statements (multilingual)
  - Educational brochures
  - Reliable Web sites: See "*Helpful Resources*" section

# Overcoming Barriers: Strategies for Success (cont'd)

- **Provider-Related:**

- Encourage all HCPs to implement the **ACIP**'s recommendations for (Adolescent) Immunizations:
- Talk to parents during every adolescent office visit and take advantage of every opportunity to vaccinate
- Give all recommended vaccines at a single visit
- Immunize during uncomplicated sick visits
- Implement standing orders
- Community outreach efforts
- Utilize state registries and electronic medical records (EMR), where possible, to assist in immunization tracking

# Overcoming Barriers: Strategies for Success (cont'd)

- **Provider-Related**

- Standing orders
- Reminder/recall
  - For influenza vaccine has shown to increase coverage rates by 25-58%
- Provider performance feedback
- Strong provider recommendation
  - Patient influenza attitude favorable, rate increased from 73.7% to 87.1%
  - Patient influenza attitude **unfavorable**, rate increased from **27.0%** to **73.7 %**
- Take advantage of every opportunity to vaccinate
- Motivate staff to become vaccine advocates

# Overcoming Barriers: Strategies for Success (cont'd)

- **Provider-Related:**
  - Follow Standards of Immunization Practices:
    - **Standard 1**
      - Immunization services are readily available.
    - **Standard 2**
      - There are no barriers or unnecessary prerequisites to the receipt of vaccines.
    - **Standard 3**
      - Immunization services are available free or for a minimal fee.
    - **Standard 4**
      - Providers utilize all clinical encounters to screen for needed vaccines and, when indicated, vaccinate (children).
    - **Standard 5**
      - Providers educate parents and guardians about immunization in general terms.

# Overcoming Barriers: Strategies for Success (cont'd)

- **Provider-Related:**

- Follow Standards of Immunization Practices:

- **Standard 6**

- Providers question parents or guardians about contraindications and, before vaccinating a child, inform them in specific terms about the risks and benefits of the vaccinations their child is to receive.

- **Standard 7**

- Providers follow only true contraindications.

- **Standard 8**

- Providers administer simultaneously all vaccine doses for which a child is eligible at the time of each visit.

- **Standard 9**

- Providers use accurate and complete recording procedures.

- **Standard 10**

- Providers co-schedule immunization appointments in conjunction with appointments for other child health services.

# Overcoming Barriers: Strategies for Success (cont'd)

- **Provider-Related:**

- Follow Standards of Immunization Practices:

- **Standard 11**

- Providers report adverse events following vaccination promptly, accurately, and completely.

- **Standard 12**

- Providers operate a tracking system.

- **Standard 13**

- Discussion: Providers adhere to appropriate procedures for vaccine management.

- **Standard 14**

- Providers conduct semi-annual audits to assess immunization coverage levels and to review immunization records in the patient populations they serve.

- **Standard 15**

- Providers maintain up-to-date, easily retrievable medical protocols at all locations where vaccines are administered.

# Overcoming Barriers: Strategies for Success (cont'd)

- **Provider-Related:**
  - Follow Standards of Immunization Practices:
    - **Standard 16**
      - Providers practice patient-oriented and community-based approaches.
    - **Standard 17**
      - Vaccines are administered by properly trained persons.
    - **Standard 18**
      - Providers receive ongoing education and training regarding current immunization recommendations.

# Methods for Reducing Missed Opportunities

- Regard every visit as a potential vaccination opportunity
  - Check immunization status at each contact and immunize if needed and not contraindicated
- Use chart reminders
- Give all recommended vaccines at a single visit
- American Academy of Pediatrics (AAP): “Minor illness with or without fever does not contraindicate immunization...”
- Be familiar with special vaccination needs of patients with medical problems

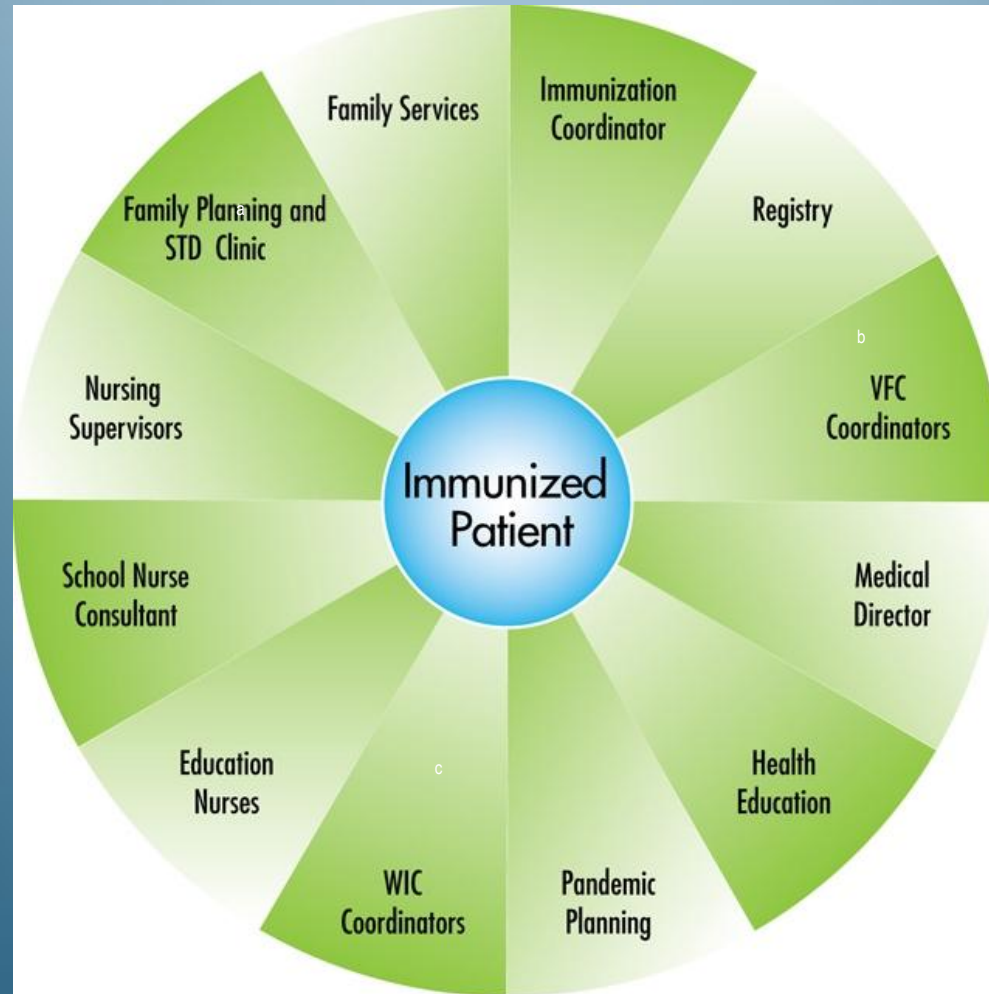
So...



# CONCLUSION

- The root cause of disparities in immunization rates is multi-factorial
- Disparities persist in the face of multiple agencies, governmental and non-governmental working to eliminate them
- Improving rates will require strategies that overcome societal, patient-related and provider-related barriers including a combination of:
  - State and NGO (=coalitions) interventions
  - Increased patient health literacy
  - Providers adhering to immunization standards, and
  - Being immunization champions, because...

# Everyone has a hand in protecting communities against disease



<sup>a</sup> STD = Sexually transmitted diseases.

<sup>b</sup> VFC = Vaccines for Children Program.

<sup>c</sup> WIC = Women, Infants, and Children.

WE ARE RESPONSIBLE  
FOR THE HEALTH OF  
OUR COMMUNITY!

# Helpful Resources on Vaccines

- CDC
  - <http://www.cdc.gov/vaccines>
  - 800-CDC-INFO (800-232-4636)
- CDC Partners
  - <http://www.cdc.gov/vaccines/partners.htm>
- *Provider's Guide: Helping Parents Who Question Vaccines*
  - <http://www.cdc.gov/vaccines/pubs/providers-guide-parents-questioning-vacc.htm>
- AAP, Childhood Immunization Support Program
  - <http://www.cispimmunize.org>
- The Children's Hospital of Philadelphia, Vaccine Education Information Center
  - <http://www.vaccine.chop.edu>

# Helpful Resources on Vaccines

- Immunize LA Families
  - <http://cdc.confex.com/cdc/nic2010/webprogram/Paper22810.html>
- Immunization Action Coalition
  - <http://www.immunize.org>
- Every Child By Two
  - <http://www.ecbt.org>
- Vaccinate Your Baby
  - <http://www.vaccinateyourbaby.org>
- California Immunization Coalition
  - <http://www.immunizeca.org>
- Voices for Vaccines
  - <http://www.voicesforvaccines.org>

# Helpful Resources on Vaccines

- CDC Vaccines & Immunizations for Specific Groups of People: Pre-teens and Adolescents  
<http://www.cdc.gov/vaccines/spec-grps/preteens-adol.htm>
- Immunization Action Coalition  
<http://www.immunize.org> and  
[www.vaccineinformation.org](http://www.vaccineinformation.org)
- National Network for Immunization Information  
<http://www.immunizationinfo.org>
- Vaccine Education Center  
<http://www.vaccine.chop.edu>
- Institute for Vaccine Safety  
<http://www.vaccinesafety.edu>

# Helpful Resources on Vaccines

- CDC Vaccine Information Statements (VISs)  
<http://www.cdc.gov/vaccines/pubs/vis/default.htm>
- Hepatitis B: What every teen should know  
<http://www.nfid.org/%5Fold/factsheets/hbagadol.html>
- CDC immunization hotline: 800-CDC-INFO20
- Allied Vaccine Group  
<http://www.vaccine.org>
- Association of Teachers of Preventive Medicine  
<http://www.atpm.org>
- The National Immunization Program (NIP)  
<http://www.cdc.gov/vaccines>

