Colorado School Immunizations: Working Together to Achieve Best Practices

Colorado Department of Public Health and Environment

Immunization Section

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Colorado Department of Public Health & Environment
Jamie D'Amico, RN, MSN, CNS
Schools and Community

Presentation Outline

- Board of Health Workgroup
- Vaccines for Child Care/Preschool and Kindergarten Entry
- Vaccines for 6th through 12th grades
- Parent Letters & Senate Bill 10-056
- Immunization Registry (CIIS)
- FERPA
- Immunization School Survey Assessment (ISSA)
- School Rules
- Exemptions
- Essential Relationships
- Educating Parents
- Immunization Websites

Board of Health Workgroup

- **Participants** – provide well rounded & varied perspectives and includes school nurses
- **Goal of the workgroup**– to assess the need of additional vaccines as well as rule changes based on epidemiological evidence
- **Convenes** annually for discussion prior to presentation to the BOH

School Required Vaccines Child Care Settings

Child Care and Preschool
Clarification in BOH rules: 2013-14 SY

- DTaP: A **4 month** interval between dose 3 and dose 4 is acceptable

  MMWR (General Recommendations: January 28, 2011/60(RR02);1-60)

  †† The minimum recommended interval between DTaP-3 and DTaP-4 is 6 months. However, DTaP-4 need not be repeated if administered at least 4 months after DTaP-3.

- MMR- 2 doses of Measles, 2 doses of Mumps and **1 dose of Rubella** meets the requirement

  Epidemiology and Prevention of Vaccine-Preventable Diseases, 12th Edition, 2nd printing, p. 281

  At least one dose of rubella-containing vaccine, as combination MMR (or MMRV) vaccine, is routinely recommended for all children 12 months of age or older

Colorado Department of Public Health and Environment

Immunization Quick Reference 2013-14

Immunization Chart for *Required* vaccines

(Child Care, Preschool & K-Entry)

Age of Child	# of required doses **DT, DTP, or DTaP** Diphtheria, Tetanus Pertussis	# of required doses **Polio** *Polio*	# of required doses **MMR** Measles Mumps Rubella	# of required doses **Hib** *Haemophilus influenzae* type b	# of required doses **Hep B** *Hepatitis B*	# of required doses **Varicella** *Chickenpox*	*# of required doses* **PCV7 or PCV13** *Pneumococcal Disease*
< 4 mos.							
by 4 mos.	1	1		1	1💉		1
by 6 mos.	2	2		2	2💉		2
by 8 mos.	2	2		2	2💉		3/2
by 12 mos.	3	2		4/3/2♥	2💉		3/2
by 15 mos.	3	2	1	4/3/2/1♥	2💉	1*	4/3/2
by 19 mos.	4	3	1	4/3/2/1♥	3💉	1*	4/3/2
by 2 years	4	3	1	4/3/2/1♥	3💉	1*	4/3/2/1
by 3 years	4	3	1	4/3/2/1♥	3💉	1*	4/3/2/1
by 4 years	4	3	1	4/3/2/1♥	3💉	1*	4/3/2/1
K-Entry	5/4♦	4/3♣	2		3💉	2*	

Supporting Immunizations in the Child Cares Settings

- DHS licensing rules acknowledge immunizations requirements
- Colorado Immunization Section “Schools” page
- Child Care Immunization Course
- Child Health Care Inspection Standards (CHINS) LPHA involvement
- Child Care Immunization Work Group
- Qualistar (Healthy Child Care Colorado)

School Required Vaccines K through 12th grades

Vaccines for Kindergarten Entry

- 3 Hep B
- 5 DTaP (unless 4th dose is given on or after the 4th birthday)
  4 month interval between dose 3 and 4 is acceptable
  (previously a 6 month interval was required)
- 4 Polio (unless 3rd dose given on or after 4th birthday)
- 2 MMR **(if single antigen given, 1 dose Rubella acceptable)**
- 2 Varicella

(The intervals between doses can be found in the BOH rules under the Table 1 footnotes. Varicella doses found in Table 2)

Vaccines 6th thru 12th grades

- Hep B – 3 doses (2 dose series for 11 – 15 yr olds) *

- Tdap – If a student, 7 yrs of age or older, did not receive a full DTaP series they must have evidence of 3 appropriately spaced tetanus/diphtheria containing vaccines (DTaP, DT, Td, Tdap). **The administration of Tdap to complete this 3 dose series, will meet the Tdap requirement for 6th through 12th grades.**

Vaccines 6th thru 12th grades

- 4 doses Polio (A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months after the previous dose). **Note**: Students who were series complete before 7/1/09, have met the requirement.

- 2 doses MMR (or if single antigen given, **1 dose of Rubella meets the requirement).**

- 2 Varicella for 6th grade
- 1 Varicella 7th through 12th grades

Vaccines 6th thru 12th Grades

- 1 dose Tdap required for students 11 -12 yrs of age or at 6th grade entry.

- **There is no interval between Td and any tetanus & diphtheria containing vaccine (including DTaP)**

ACIP Recommended Immunization Schedule for persons aged 0 through 18 years – 2013

Tdap can be administered regardless of the interval since the last tetanus and diphtheria toxoid-containing vaccine

Required Parent Letter:

Schools and Child Care Settings

Parent Letters & SB 10-056

- Summer of 2010, **Senate Bill 10-056 passed**:
- CDPHE shall develop & provide to CDE a standardized document regarding childhood immunizations. (Post on CDE Website)
- School Districts shall distribute letter to parents and guardians of students annually. (email, postal mail, School Handbook or Newsletter)

Parent Letter

- Initial efforts included making meningococcal vaccine mandatory for students in school through the Colorado legislative process

- Mandatory vaccination was not accepted however the development of the parent letter to include both required and recommended vaccines was implemented

The Immunization Registry–CIIS

Almost 90% of Colorado school districts participate in CIIS

(read only and entry of "historical" shot records)

- Child Care Access to CIIS

  Lorin Scott-Okerblom, MPH – CIIS School Coordinator

  (303-691-4073 lorin.scott-okerblom@state.co.us)

Federal School Privacy Law:

Influence in sharing of immunization records.

FERPA

- The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is a Federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education.

The Challenges of FERPA

- Colorado Statute requires schools to allow CDPHE to audit immunization records

  (FERPA disallows unless specific parental consent)

- Most schools are not permitted under FERPA to share records with CDPHE or physicians/clinics.

  (Must have specific parental consent)

Assessing School IZ Records

Immunization School Survey Assessment (ISSA)

In 4th year of using revised methodology:

- De-identified data collection approved by CDE and compliant with FERPA

Select 350 kindergartners from public and private schools throughout the state:

- School nurses submit information on students selected at their school through a web application

Beginning in 2012-13 - training video is posted on YouTube

Continued>

ISSA (continued)

- For many school districts we have a contact at the district level who has access to all student and immunization records.
  - They identify the students that were selected at the schools within their district and submit the immunization data
  - Eliminates the need for the school nurses to complete the survey.

2011-2012 Immunization Survey Data

% Kindergartners Up to Date and In Compliance with Colo. School Regs

- Had all required Kindergarten Entry Shots

  Point Estimate: 78.6

  Range with Confidence Intervals: 73.7 -83.0

- In Compliance at Kindergarten Entry

  Point Estimate Percentage: 84.3

  Range with Confidence Intervals 79.8-88:1

Healthy People 2020 goal is 90% or more

% Kindergarteners Up to Date by Required Vaccines at School Entry

Vaccine	Pt. Estimate	Range 95% CI
Hep B	93.1	89.7 – 95.6
Polio	87.4	83.3 – 90.9
MMR	86.8	82.6 – 90.3
DTaP	85.5	82.2 – 89.2
Varicella	84.0	79.5 – 87.8

% Kindergarteners – Exemptions

IZ Status at School Entry	Percent
Up to Date	78.6
Personal Exemptions for all required vaccines	3.8
Personal Exemptions for 1 or more required vaccines	1.9
Medical Exemption for all required vaccines	none
Medical Exemption for 1 or more required vaccines	none
Religious Exemption for all required vaccines	none
Religious Exemption for 1 or more required vaccines	none
In Process	1.5
Nothing noted in school Immunizations record	12. 9
No school immunization record	1.3

School Required Immunizations

School Required Immunizations:
Some Basic Rules

- No record, no attendance
- In Process: The parent has 14 days after notification to receive the shot(s) or to make a plan to receive the shots(s)
- Exemptions (medical, personal, religious)
  (Must have a parent signature for each refused IZ)
- All students must have on file an official Certificate of Immunization
- McKinney/Vento Act – No homeless (indigent) child will be denied school admittance

Colorado Exemptions

- Medical
- Religious
- Personal Belief

Exemptions: Issues

- Colorado has one of the most liberal exemption laws in the country
- Some parents have immunization records however will sign an exemption for convenience
- At registration, if parent doesn't have immunization records, some school registrants will have parent sign exemption rather than vaccinate the student or produce IZ record
- Only required to sign one time and never revisit again

Statewide Personal Belief Exemption (PBE) Inquiry Process

- CDC noted increased exemptions in Colorado
- Funding provided by Colorado Trust to assist CDPHE and CCIC in planning statewide process
- Keystone Center engaged to set up 7 to 8 focus groups and organize stakeholder process
- Stakeholder group to be convened to review results of focus groups and discuss plan for PBEs

Relationship Building

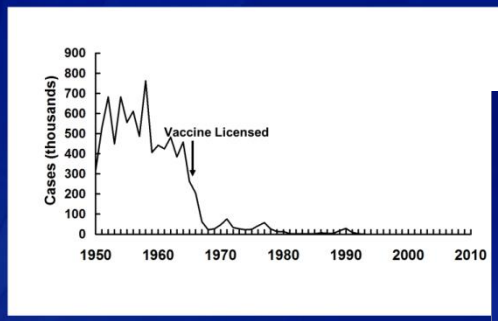
Essential Relationships

- Partnerships between Schools, Physicians, Parents are critical for improved immunization rates
- Schools responsible for keeping student immunization records
- Physicians responsible for vaccinating according to the ACIP immunization schedule
- Parents responsible for maintaining school compliance through required immunizations or signing exemptions
- School Officials responsible for excluding kids who are not compliant.

Addressing Parent's Concerns

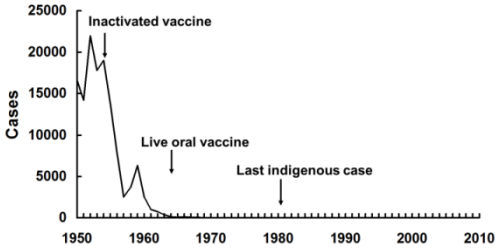
Decline of Diseases After Vaccine Introduction

Measles - United States, 1950-2010



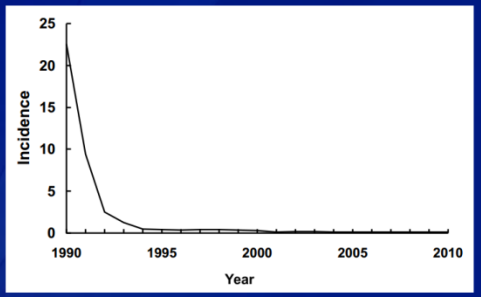
Source: National Notifiable Disease Surveillance System, CDC

Poliomyelitis—United States, 1950-2010



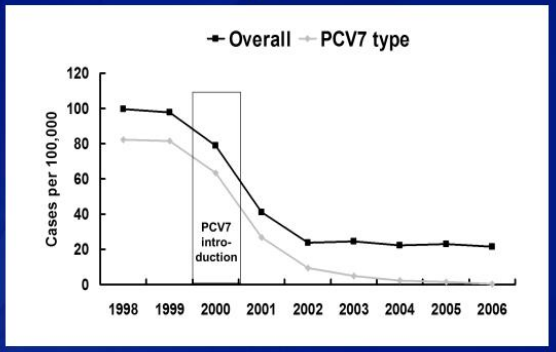
Source: National Notifiable Disease Surveillance System, CDC

Incidence* of Invasive Hib Disease, 1990-2010

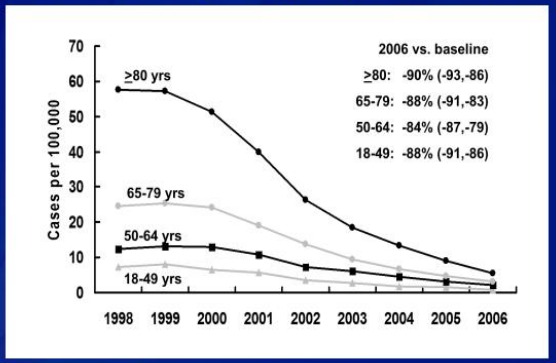


*Rate per 100,000 children <5 years of age

Direct Effect of Vaccination: Invasive Pneumococcal Disease Among Children <5 Years of Age, 1998/99-2006



Rates of PCV7-type Invasive Pneumococcal Disease among Adults, U.S., 1998/99-2006



CDC, unpublished data 2008

History of Vaccine-Preventable Diseases

Comparison of 20th Century Annual Morbidity and Current Morbidity: Vaccine-Preventable Diseases

Disease	20th Century Annual Morbidity†	2011 Reported Cases ††	Percent Decrease
Smallpox	29,005	0	100%
Diphtheria	21,053	0	100%
Measles	530,217	212	> 99%
Mumps	162,344	370	> 99%
Pertussis	200,752	15,216	92%
Polio (paralytic)	16,316	0	100%
Rubella	47,745	4	> 99%
Congenital Rubella Syndrome	152	0	100%
Tetanus	580	9	98%
Haemophilus influenzae	20,000	8*	> 99%

†Source: JAMA. 2007;298(18):2155-2163

†† Source: CDC. MMWR January 6, 2012;60(51);1762-1775. (provisional 2011 data)

* *Haemophilus influenzae* type b (Hib) < 5 years of age. An additional 14 cases of Hib are estimated to have occurred among the 237 reports of Hi (< 5 years of age) with unknown serotype.

Email from Sandra Roush - CDC 1/18/12

Vaccines work! (really, really well)

Ten Great Public Health Achievements in the 20th Century

Public health is credited with adding 25 years to the life expectancy of people in the United States in this century. Yet, ask the average person what public health is and their reply might be limited to: "healthcare for low-income families." CDC's Ten Great Public Health Achievements in the 20th Century was created to remind us of how far we've come, how we got here, and exactly what public health is: the active protection of our nation's health and safety, credible information to enhance health decisions, and partnerships with local minorities and organizations to promote good health.

Learn more about how far we've come in the Morbidity and Mortality Weekly Report (MMWR):

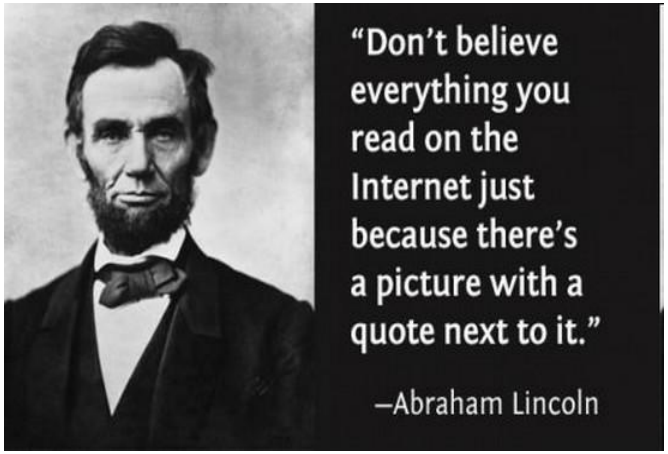
Ten Great Public Health Achievements in the 20th Century

- Immunizations
- Motor-Vehicle Safety
- Workplace Safety
- Control of Infectious Diseases
- Declines in Deaths from Heart Disease and Stroke
- Safer and Healthier Foods
- Healthier Mothers and Babies
- Family Planning
- Fluoridation of Drinking Water
- Tobacco as a Health Hazard
- Future Directions of Public Health

- **The routine childhood immunization program in one birth cohort prevents about**
  - **20 million cases**
  - **42,000 deaths**
- **It is cost saving**
  - **saves about $13.6 billion in direct costs**
  - **saves about $68.9 billion from societal perspective**

Vaccine Misconceptions

- Overloaded Immune System
- Natural Immunity is Better
- Disappeared Diseases
- Vaccines Increase Risk of Disease
- Flu Shot Causes the Flu
- Vaccines Cause Autism
- Mercury in Vaccines



That's a big jump since I was vaccinate!

Year	Number of Vaccines	Possible Number of Shots by Age 2	Possible Number of Shots at a Single Visit
1900	1	1	1
1960	5	8	2
1980	7	5	2
2000	11	20	5

But wait…

Our immune system sees "antigens" not shots

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

Antigens have dramatically decreased!

Immune System Capacity

- A single common exposure can be much more challenging than all childhood vaccines combined (think McDonald's Playland…)
- Immune system has near infinite (10^9 to 10^{11}) capability
- There is no physiologic reason to spread out doses
- Clinical studies shows no decrease in risk of adverse events when doses are spread out

Spreading out doses increases the time an infant is at risk and decreases overall community immunity!

Natural Immunity vs. Vaccines

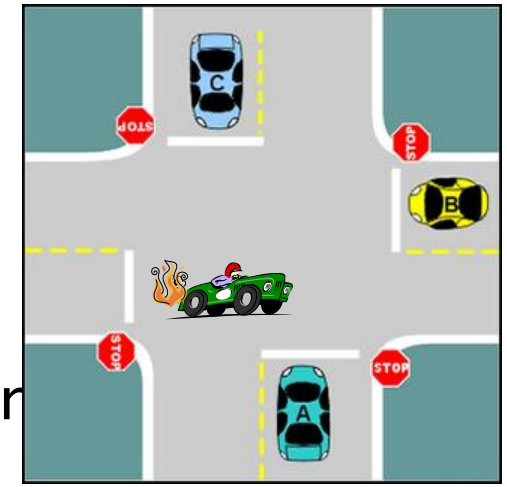
- Natural immunity typically lasts longer, but some vaccines are actually better:
  - HPV, Tetanus, *Haemophilus influenzae* type b (Hib), Pneumococcus
- Vaccines often protect against multiple strains of a disease, infection often provides future protection from one strain
  - Influenza, HPV, Polio, Pneumococcus
- Not all infections offer life-long immunity to even a single strain
  - Pertussis
- The difference between vaccination and natural infection is the price paid for immunity:
  - Pneumonia from chickenpox
  - Intellectual disabilities from meningitis
  - Birth defects from rubella
  - Liver cancer from hepatitis B virus
  - Death from measles

The price of natural immunity

- The difference between vaccination and natural infection is the price paid for immunity:
  - Pneumonia from chickenpox
  - Intellectual disabilities from meningitis
  - Birth defects from rubella infection during pregnancy
  - Liver cancer from hepatitis B virus
  - Death from measles
- Risks of natural *infection* outweigh the risks of immunization for every recommended vaccine
  - Example: Measles infection causes encephalitis (inflammation of the brain) for 1 in 1,000 infected individuals, and kills two of every 1,000 infected individuals. MMR (measles, mumps, and rubella) vaccine, however, results in encephalitis or a severe allergic reaction once in every 1,000,000 vaccinated individuals

Disappeared Diseases

- Vaccines have eliminated some vaccine preventable diseases in the U.S.
- High vaccination levels are necessary to maintain elimination
  - Measles in the U.K.
  - Traffic analogy
- Elimination of these diseases has NOT been achieved in most parts of the world
  - People with un- and under-immunized children should think twice before traveling internationally
  - College students under-immunized as children should get caught up before studying or backpacking abroad
    - Half of the measles cases in the U.S. in 2011 were a result of travel to Europe



Other Vaccine Misconceptions

- Flu Shot Causes the Flu
  - Not possible!
  - But you may have some mild symptoms that indicate the vaccine is working, stimulating your immune system
- Vaccines Cause Autism
  - Wakefield study has been thoroughly debunked, number studies have found no association
- Mercury in Vaccines
  - Thimerosol is no longer in any childhood vaccines except SOME flu vaccine
  - Removed in an abundance of caution—we had other options
  - Ethyl-mercury is NOT methyl-mercury
    - Coors Light vs. methanol or wood alcohol
    - NaCl (table salt) vs. Chlorine gas (chemical weapon)

Sharing ImmunizationResources

Immunization Websites

- www.ColoradoImmunizations.com

  (The "Schools" page is located by clicking on the link "Child Care, School, College" on the navigation bar on the left side of the home page)

  http://www.colorado.gov/cs/Satellite/CDPHE-DCEED/CBON/1251609960682

- www.vaccineinformation.org

- www.cdc.gov/vaccines

- www.ImmunizeForGood.com

  (Great Colorado Parent Website)

Colorado The Official State Web Portal

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Colorado Department of Public Health and Environment

Division of Disease Control and Environmental Epidemiology

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  - Immunization Schedules
  - Whooping Cough Winnable Battle
  - Immunize For Good
  - Colorado Immunization Manual (CIM)
  - Forms
  - About the Immunization

Child Care, School, College

Child Care, School, College/University

Immunization in School

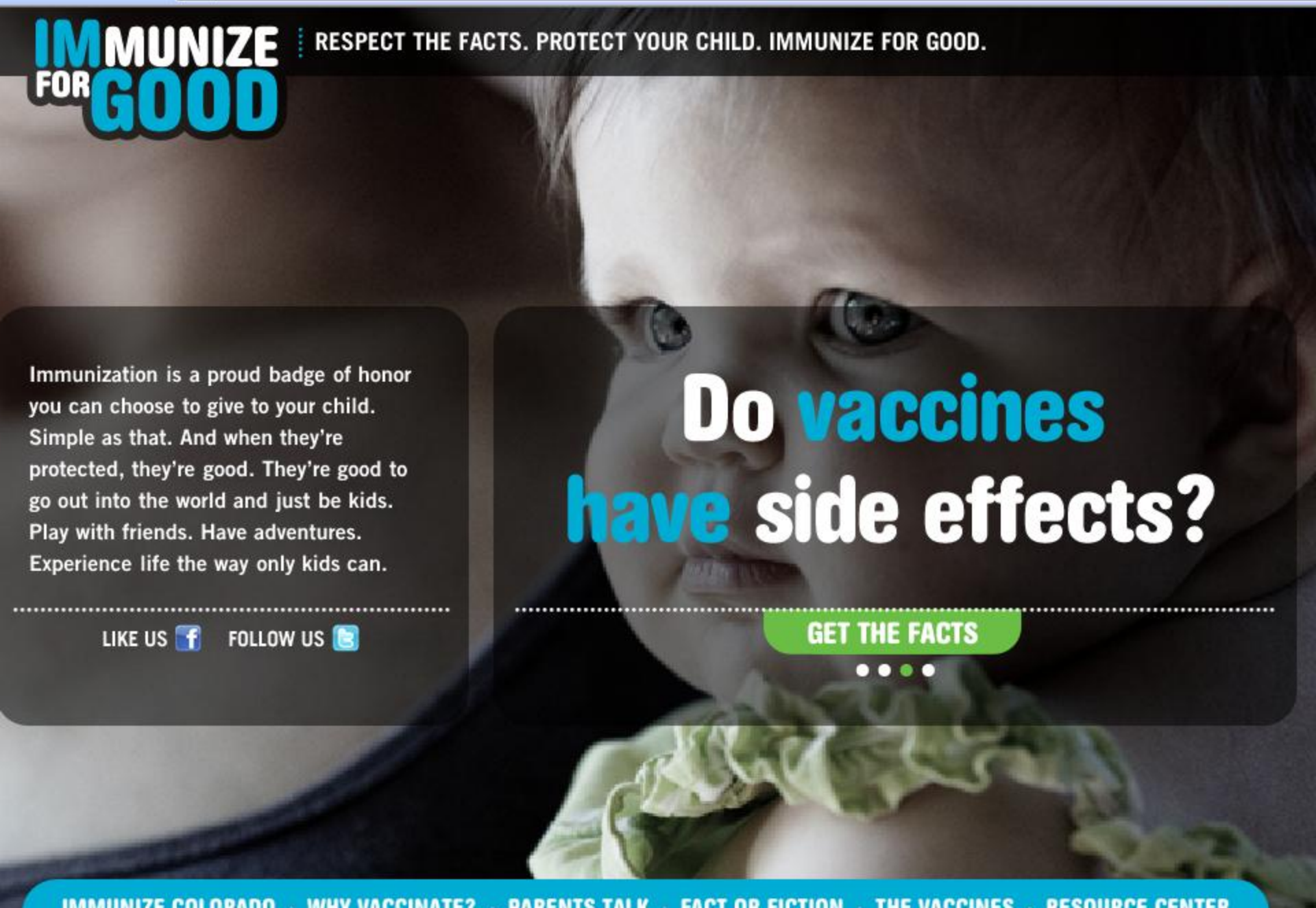
Immunization in Child Care Settings

Immunization in Colleges/Universities

Child Care and School Immunization Forms

Data

Immunization Resources


IMMUNIZE FOR GOOD
RESPECT THE FACTS. PROTECT YOUR CHILD. IMMUNIZE FOR GOOD.
Immunization is a proud badge of honor you can choose to give to your child. Simple as that. And when they're protected, they're good. They're good to go out into the world and just be kids. Play with friends. Have adventures. Experience life the way only kids can.
LIKE US
FOLLOW US
Do vaccines have side effects?
GET THE FACTS
IMMUNIZE COLORADO
WHY VACCINATE?
PARENTS TALK
FACT OR FICTION
THE VACCINES
RESOURCE CENTER

Questions?

Jamie D'Amico, RN, MSN, CNS
Schools and Community
Jamie.damico@state.co.us
303-692-2957