

# Achieving High Adolescent HPV Vaccination Coverage

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# DISCLOSURES

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I have no actual or potential conflicts of interest in relation to this presentation.



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# OVERVIEW

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- Introduction
- Objectives
- Methods
- Results
- Conclusions



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# INTRODUCTION

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- HPV is the most common sexually transmitted infection in the US
- Affects ~76 million people
- 33,000 cancer cases per year



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# INTRODUCTION

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Despite the Advisory Committee on Immunization Practice (ACIP) recommendation for routine adolescent HPV vaccination as well as a Healthy People 2020 goal of 80% vaccine coverage in adolescents, HPV vaccination rates have lagged behind those of meningococcal conjugate vaccine (MCV) and tetanus, diphtheria and acellular pertussis vaccine (Tdap).



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# INTRODUCTION - BARRIERS

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- **Patient characteristics:**
  - Younger age
  - Male
  - Lack of insurance
  - Poor knowledge of HPV disease and vaccine
- **Provider factors:**
  - Lack of a strong recommendation for the vaccine
  - Financial concerns
  - Missed opportunities for vaccination



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# INTRODUCTION - BARRIERS

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- **Systems-level barriers:**
  - Missed opportunities for vaccination
  - Concerns about reimbursement, insurance coverage
  - School systems' lack of mandate for HPV



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# INTRODUCTION

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The vaccination program at Denver Health addresses the provider factors of **giving a strong recommendation for all vaccines**, including HPV, and the systems-level factor of **minimizing missed opportunities**.



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# OBJECTIVES

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1. Describe tactics used to achieve high HPV vaccination coverage in a large urban safety-net health care system.
1. Examine factors affecting HPV vaccine uptake.



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# METHODS - SETTING

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- Urban safety-net integrated health system
- Serving:
  - > 50% of the uninsured and Medicaid population in Denver
  - 40% of the city's children
  - 43% of the Denver Hispanic community
  - 33% of the Denver African-American community
  - 17,000 adolescents annually



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# METHODS - SETTING

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- **Pediatric/Adolescent Population (0-18y):**
  - 79% Medicaid
  - 5% CHP+
  - 5% Uninsured
  - 9% Private insurance
- **Adolescent vaccine delivery sites:**
  - 8 FQHCs
  - 17 School-based health centers (SBHCs)
  - Denver Public Health Immunization Clinic



# METHODS – DATA SOURCES

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- Vaccine registry and utilization statistics were used to determine vaccination coverage rates in adolescents ages 13–17 years from 2004-2014 for Tdap, MCV and HPV (1 & 3 doses).
- Data were examined separately for males and females.
- Rates were compared with national data reported by the Centers for Disease Control and Prevention.



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# METHODS

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## Vaccine Delivery Methods:

Involves several steps that result in a “bundling” of the three adolescent vaccinations (Tdap, MCV and HPV)

- Standing order for immunizations
- Medical assistants check the vaccine registry for recommended vaccines at every visit (sick or well)
- Vaccines are given early in the visit
- Providers present Tdap, MCV and HPV as standard immunizations recommended for the adolescents' health



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# METHODS

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## Routine use of vaccine registries:

- **Vax Trax**
  - Internally developed immunization registry
  - Multiple functions: recommend, vaccine inventory, historic information storage
  - Contraindications & refusals
- **CIIS:** state registry
- MAs use the recommend functionality to create list of specific vaccines for which the patient is due



# METHODS

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## Standing Order for Vaccinations:

- Recommend list becomes standing order
- Signature required only for vaccines given outside standard of care
- Vaccines may be given before or after provider sees patient



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# METHODS

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## Presenting Vaccines in Standard Bundle:

- Providers encouraged to present all 3 adolescent vaccines together, rather than as required vs. optional
- Weekly educational meetings
  - QI data
  - Addressing vaccine refusal
- Provider- and clinic-level report cards



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## HPV Rates By Medical Home and PCP

Medical Home: DH PAV G PEDS MEDICAL HOME

Age Group: 11-18 years

pcp	Total	Never Had Vaccine	%	Due For 2nd	%	Due For 3rd	%	Complete	%
LEV, JERUSHA P	206	25	12.14%	35	16.99%	4	1.94%	142	68.93%
WILLIAMS, JOSHUA T	6	0	0.00%	5	83.33%	0	0.00%	1	16.67%
ANDERSON, MARK E	275	28	10.18%	58	21.09%	7	2.55%	182	66.18%
FLORES, ANA I	282	27	9.57%	44	15.60%	4	1.42%	207	73.40%
HARASAKI, CARA E	18	2	11.11%	2	11.11%	0	0.00%	14	77.78%
VANDERLIET, ELIZABETH J	7	1	14.29%	1	14.29%	0	0.00%	5	71.43%
MILLER, PHILIP K	43	3	6.98%	14	32.56%	0	0.00%	26	60.47%
MONTHATHONG, LAURA J	268	39	14.55%	48	17.91%	4	1.49%	177	66.04%
ANDERSON, LAUREN R	6	0	0.00%	2	33.33%	0	0.00%	4	66.67%
FARMAR, ANNA-LISA M	176	18	10.23%	46	26.14%	1	0.57%	111	63.07%
MCILHANY, CATHERINE L	225	32	14.22%	45	20.00%	4	1.78%	144	64.00%
PROVIDER NOT IN SYSTEM	15	7	46.67%	3	20.00%	0	0.00%	5	33.33%
FREEMAN, REBECCA K	268	34	12.69%	52	19.40%	4	1.49%	178	66.42%
ROQUES ESCOLAR, MARIA	318	30	9.43%	63	19.81%	3	0.94%	222	69.81%
SYLVESTER, KIMBERLY A	348	47	13.51%	80	22.99%	8	2.30%	213	61.21%



# METHODS

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## Other Interventions:

- SBHC vaccination drives
- QI measure focused on improving preventive visit rates
- Offering vaccines at every visit even if previously declined



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# METHODS – SUMMARY

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- Routine use of a robust immunization registry for multiple functions, including recording vaccine history and recommending needed vaccines at every visit
- Medical Assistants check vaccine registry for recommended vaccines at every visit
- Standing order for routine immunizations
- Vaccines are given early in the visit when possible, to allow time to observe for immediate side effects such as syncope
- Education for providers to present Tdap, MCV, and HPV as a standard “bundle” of adolescent immunizations
- Provider-level “report cards” with adolescent vaccination coverage rates
- Vaccination drives at School Based Health Clinics



# RESULTS

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- Rates for Tdap, MCV and HPV rose steadily from 2004 to 2014.
- In 2014 (n=11,463), HPV coverage of  $\geq 1$  dose in females was 89.8% and in males was 89.3%, compared to national rates of 57.3% and 34.6%, respectively.



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# RESULTS

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- HPV completion rates (3 doses) were 66.8% for females and 59.9% for males, versus 39.7% and 21.6% nationally.
- For both genders, Tdap coverage was 95.5% (87.6% nationally) and MCV coverage was 93.6% (74.0% nationally).

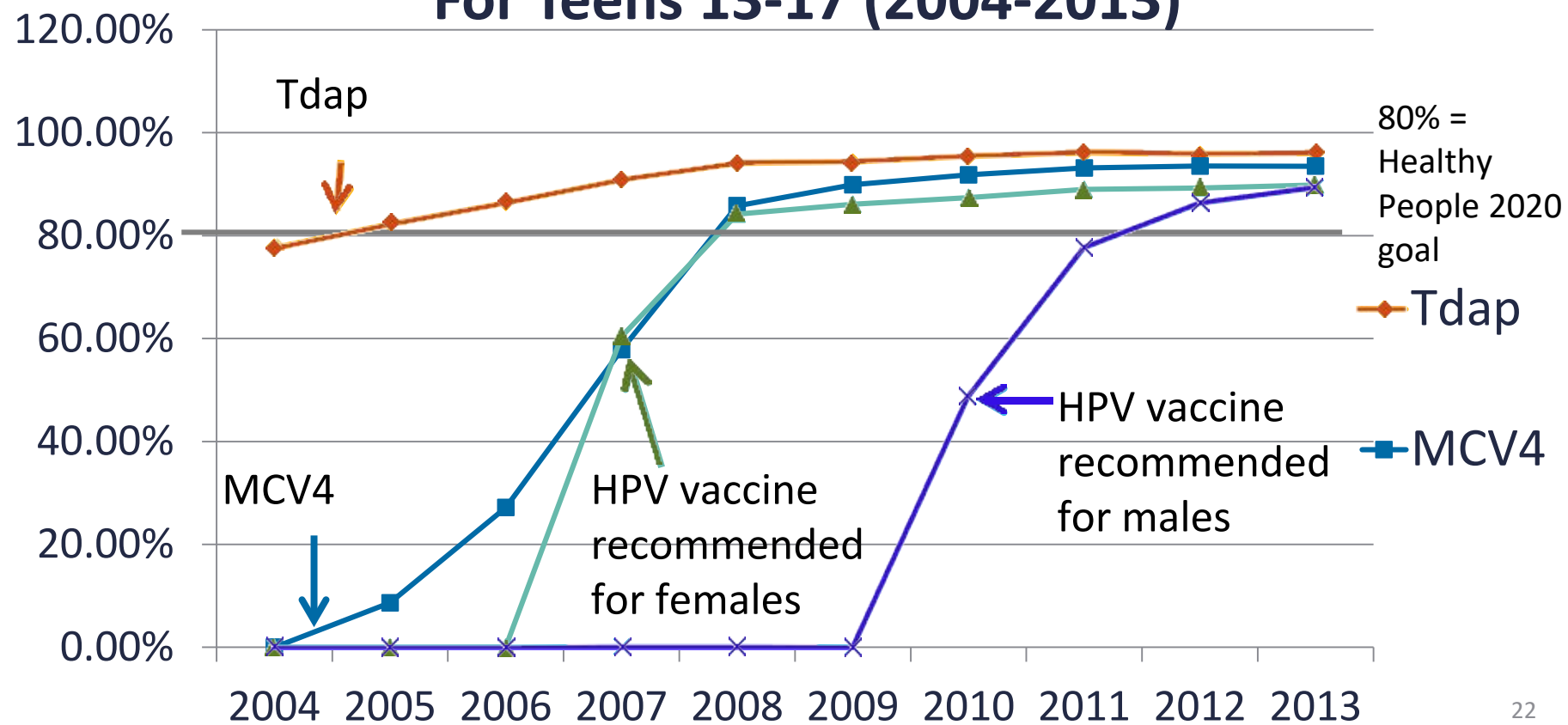


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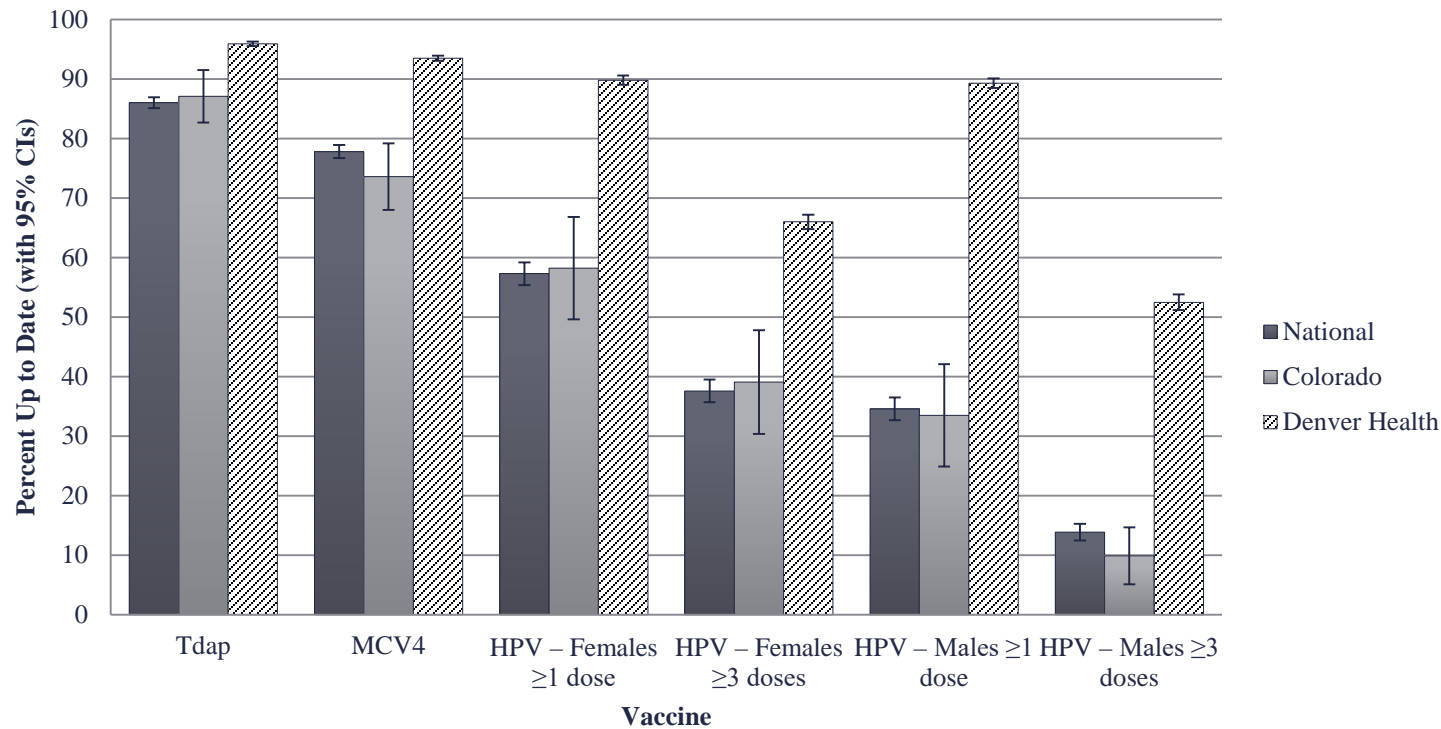
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# Chart 1: Denver Health Immunization Rates For Teens 13-17 (2004-2013)



# National, State, and Denver Health Adolescent Immunization Rates (2013)



# RESULTS

## Adjusted Odds for receiving $\geq 3$ Doses HPV

Characteristic		Odds Ratio	95% Wald	
			Confidence Interval	
<b>Age (Linear)</b>		1.17	1.13	1.20
<b>Gender</b>	Male	1.00	-	-
	Female	1.74	1.61	1.89
<b>Race</b>	White	1.00	-	-
	Black	1.13	0.97	1.33
	Latino	1.77	1.54	2.03
	Other	0.93	0.72	1.19
<b>Language</b>	English	1.00	-	-
	Spanish	1.26	1.15	1.38
	Other	2.16	1.68	2.78
<b>FPL</b>	> 200%	1.00	-	-
	$\leq 200\%$	1.43	1.10	1.87
	Unknown	0.67	0.50	0.90



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# RESULTS - UPDATE

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- Most recent data (through January 2018):
  - **HPV 1 dose:**
    - **Female:** 82.4% (↓) (65%)
    - **Male:** 83.3% (↓) (56%)
  - **HPV  $\geq$ 2 doses:**
    - **Female:** 63.5% (↓) (49.5%)
    - **Male:** 62.5% (↑) (37.5%)
- **Adult rates:**
  - Adult coverage rates (2018 – 19-26 year olds)  
51.4%



# CONCLUSIONS

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Through low-cost, system-wide standard procedures, Denver Health achieved adolescent vaccination rates well above national coverage rates and surpassed the Healthy People 2020 goal of 80%, especially for HPV. Avoiding missed opportunities for vaccination and normalizing the HPV vaccine were key procedures that likely contributed to high coverage rates.



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