Achieving High Adolescent HPV Vaccination Coverage

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

- Introduction
- Objectives
- Methods
- Results
- Conclusions
INTRODUCTION

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

- **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
INTRODUCTION - BARRIERS

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

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.
OBJECTIVES

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.
METHODS - SETTING

- 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
METHODS - SETTING

- 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

- 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.
METHODS

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
METHODS

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

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
METHODS

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
## HPV Rates By Medical Home and PCP

**Medical Home:** DH PAV G PEDS MEDICAL HOME  
**Age Group:** 11-18 years

<table>
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<tr>
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<th>Total</th>
<th>Never Had Vaccine</th>
<th>%</th>
<th>Due For 2nd</th>
<th>%</th>
<th>Due For 3rd</th>
<th>%</th>
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<td>8</td>
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<td>213</td>
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</table>
METHODS

Other Interventions:
- SBHC vaccination drives
- QI measure focused on improving preventive visit rates
- Offering vaccines at every visit even if previously declined
METHODS – SUMMARY

▪ 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

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

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

80% = Healthy People 2020 goal

- **Tdap**
- **MCV4**
- HPV vaccine recommended for males
- HPV vaccine recommended for females
National, State, and Denver Health Adolescent Immunization Rates (2013)

Percent Up to Date (with 95% CIs)

Vaccine

- Tdap
- MCV4
- HPV – Females ≥1 dose
- HPV – Females ≥3 doses
- HPV – Males ≥1 dose
- HPV – Males ≥3 doses

Categories:
- National
- Colorado
- Denver Health
## RESULTS

### Adjusted Odds for receiving ≥3 Doses HPV

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<th>Odds Ratio</th>
<th>95% Wald Confidence Interval</th>
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RESULTS - UPDATE

- Most recent data (through January 2018):
  - HPV 1 dose:
    - Female: 82.4% (65%)
    - Male: 83.3% (56%)
  - HPV ≥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

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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REFERENCES


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