HPV Vaccination Quality Improvement: Physician Perspective

Discussion of efforts to raise HPV vaccine coverage using quality improvement from a physician’s perspective

Alix Casler, M.D., F.A.A.P.

Chief of Pediatrics
Medical Director of Outpatient Pediatrics
Orlando Health Physician Associates

Director, Quality Improvement Curriculum
University of Florida Pediatrics Residency at Orlando Health

Assistant Professor of Pediatrics
UCF and FSU Colleges of Medicine
Disclosures

Speaker and consultant: Merck
Educational Goals

Participants in this conversation will:

• Understand the relevant principles behind an effective QI project in medical practice.

• Become familiar with methods applied to a successful QI project to increase HPV vaccination rates in a large, multi-office pediatric group in Central Florida.

• Recognize relevant barriers to QI in primary care pediatrics.

• Develop strategies to assist busy primary care pediatric practices in their QI efforts to increase HPV vaccination rates.
You must be the change you wish to see in the world.

Mahatma Gandhi
HPV Is Widespread

- Approximately 79 million people in the United States are currently infected with HPV\(^1,a\)
  - ~14 million people become newly infected with HPV each year in the United States\(^1,a\)
- Most HPV infections clear on their own; however, persistence of certain HPV types can lead to clinically significant diseases\(^1\)
- For HPV-associated cervical disease, it cannot be reliably predicted which patients with infection or abnormal cytology will progress to clinically significant disease versus spontaneously regress\(^1,2\)

\(^a\)Estimates are for 2008 and reflect persons with detectable infection with any of 37 different HPV types, not just Types 6, 11, 16, 18, 31, 33, 45, 52, and 58.\(^3\)

HPV=human papillomavirus.

HPV Causes Cancer

https://www.cdc.gov/cancer/hpv/statistics/cases.htm  March 2017
The National Problem: Inadequate HPV Vaccination

- An average of 38,793 HPV-associated cancers (11.7 per 100,000 persons) were diagnosed annually in the United States during 2008–2012, including 23,000 (13.5) among females and 15,793 (9.7) among males. Among these cancers, CDC estimates that 30,700 (79%) can be attributed to HPV, and 28,500 of these are attributable to HPV types that are preventable with the 9-valent HPV vaccine.

- HPV vaccination coverage for ≥1 dose could easily have reached 92.6% by 2015.

- Every year that increases in coverage are delayed, another 4,400 women will go on to develop cervical cancer.

MMWR July 26, 2013 / 62(29);591-595, MMWR July 31, 2015 / 64(29);784-792, MMWR: NIS teen data 2011-2015, MMWR July 8, 2016 / 65(26);661–666
Estimated HPV Vaccine Coverage for Adolescents Age 13 Years (NIS-Teen, 2015)¹⁻³

Per ACIP recommendations this age group should be routinely vaccinated with HPV vaccine at 11 or 12 years of age

Healthy People 2020 Objective (80%)<sup>a</sup>

- **HPV-1**
  - Females: 56.4%
  - Males: 48.7%

- **HPV-3**
  - Females: 29.5%
  - Males: 24.9%

<sup>a</sup>The *Healthy People 2020* goal is to increase the vaccination coverage level of 3 doses of HPV vaccine for males and females to 80% by 13 to 15 years of age.

ACIP=Advisory Committee on Immunization Practices; HPV=human papillomavirus; HPV-1=1 or more doses of HPV vaccine; HPV-3=3 doses of HPV vaccine; NIS=National Immunization Survey.

If An Opportunity to Vaccinate Is Missed, the Preteen Patient May Not Be Seen Next Year

According to IMS data for ~4.9 million commercially insured 11- to 12-year-old patients who had well-visits from 2012 to 2014 (data do not include vaccine-only visits)\(^a\):

- Only 48% had a well-visit in 2012 (n=2,357,934)
- Only 23% had a well-visit each year in a 3-year period (2012–2014) (n=1,122,362)

\(^a\)Research was conducted by IMS Health, Inc., for Merck from January 1, 2012 through December 31, 2014. Data consisted of health claims from a database of commercial health plans and managed Medicaid. Data were collected for “well-visits” only, not for vaccine-only visits. Commercially insured patients (who had a “well-visit”) between 2012 and 2014 included 11- to 12-year-olds (n=4,940,805), 13- to 14-year-olds (n=5,360,708), and 15- to 16-year-olds (n=5,370,393).

1. Data available on request from Merck Professional Services-DAP, WP1-27, PO Box 4, West Point, PA 19486-0004. Please specify information package VACC-1163821-0000.
What is Quality?
Transition in Health Care

HEDIS
MACRA
CORE MEASURES
MEANINGFUL USE
ACO METRICS
Improving Medical Care Requires System Redesign

“Change is possible if we have the desire and commitment to make it happen.”
- Mohandas Gandhi

“The definition of Insanity is doing the same thing over and over and expecting to get a different result.”
- Paul Batalden

“All improvement will require change, but not all change will result in improvement!”
- T. Nolan

www.ihi.org
The Science of Improvement

A Model for Learning and Change

When you combine the 3 questions with the... PDSA cycle, you get...

Model for Improvement

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What change can we make that will result in improvement?

...the Model for Improvement.

On the basis of what is learned from any PDSA cycle, a change might be:

- Implemented (adopt)
- Dropped (abandon)
- Modified (adapt)
- Increased in scope (expand)
- Tested under other conditions
The TRIPLE AIM

- System designs that simultaneously improve three dimensions:
  - Improving the health of the populations;
  - Improving the patient experience of care (including quality and satisfaction); and
  - Reducing the per capita cost of health care.
The QUADRUPLE AIM

The Missing Aim

Better Outcomes

Improved Clinician Experience

Lower Costs

Improved Patient Experience
Question 1: What are We Trying to Accomplish?

What are we trying to accomplish?

The project AIM is:

- Not just a vague desire to do better
- A commitment to achieve measured improvement in a specific *system*
- With a definite *timeline*
- With numeric *goals*
Why Your AIM Must be Specific

Operational Definitions

“Would you tell me, please, which way I ought to go from here,” asked Alice?

“That depends a good deal on where you want to get to,” said the Cat.

“I don’t much care where” - said Alice.

“Then it doesn’t matter which way you go,” said the Cat.

Question 2: How Do We Know that a Change is an Improvement?

“When you can measure what you are speaking about and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meager and unsatisfactory kind.”

-Lord Kelvin, May 3, 1883

“In God we trust. All others bring data.”

W. E. Deming
Critical Components of a Vaccination Improvement Project

• Set specific goals. (AIM)
• Know your rates. (MEASURE)
• Identify areas of weakness and/or opportunity and what to do about them. (INTERVENTION)
• Implement effective and sustainable process improvement. (TEST)
  • Keep it simple with an eye to workload.
  • Scalability
  • Sustainability
Description of the Practice*

- **Orlando Health Physician Associates:**
  - Large multi-specialty healthcare group
  - 22 pediatricians, 2 pediatric ARNPs, 80 pediatric staff, 11 offices.
  - Over 57,000 active pediatric patients
  - Over 23,000 patients aged >=11 years.
  - NCQA level three Patient Centered Medical Home (PCMH).

* At outset of the project, second half 2013
The Approach: Vaccination Rates Revealed

- Departmental HPV vaccination rates reviewed September 2013
- Individual physician rates shared privately at first (September 2013).
- Individual physician rates subsequently shared with the department.
- Rates published monthly at first, now quarterly.
The Approach: Goal-Setting
How much? By when?

• 2013: Show Improvement
• 2015: Meet highest NIS Teen national immunization rates*.
• 2017: Meet Healthy People 2020 goals (80%)*

* for all patients 11-18
The Approach: Interventions

- Data verification and “clean-up”
- Physician education
- Staff education
- Physician incentives
- Pre visit planning
- Electronic follow up orders for doses 2 and 3
- Schedule doses 2 and 3 at the time of first dose
- Reminder Calls
- Manufacturer Tools
- Clinical Summaries
- Other
Physician and Staff Education

Key Points:

- Multiple competing priorities.
- Unawareness of HPV disease impact and of ACIP recommendation for routine 11-12 year vaccination.
- Discomfort.
- The need for “scripting.”

- UNTAPPED RESOURCE AND ENERGY IN STAFF: IMPLICATIONS OF EMPOWERMENT
HPV vaccination is the best way to PREVENT many types of CANCER.
HPV vaccination is RECOMMENDED at ages 11 or 12.
HPV vaccination is REDUCING HPV DISEASE.

3 THINGS PARENTS SHOULD KNOW ABOUT PREVENTING CANCER

Tips and Time-savers for Talking with Parents about HPV Vaccine

1. HPV vaccination is the best way to prevent many types of CANCER.
2. HPV vaccination is RECOMMENDED at ages 11 or 12.
3. HPV vaccination is REDUCING HPV DISEASE.

Tools: Distributed at Offices Placed on Pediatrics Desktop
Physician Incentives

- Competition
- Wine
- Quality Bonus Structure
**Daily Pre-visit Planning**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:10a</td>
<td>PEDC 324</td>
<td>HAV w/flu not yet</td>
</tr>
<tr>
<td>08/10/2015</td>
<td>ILNP 02/20/2014</td>
<td>27949575 18 MONTH CHECK** NHCHAT well handout</td>
</tr>
<tr>
<td>09:40a</td>
<td>PEDC 324</td>
<td>Jodie Ann</td>
</tr>
<tr>
<td>08/10/2015</td>
<td>ILNP 04/20/2000</td>
<td>27949578 15 YR WCC** all shots UTD</td>
</tr>
<tr>
<td></td>
<td>BMI PHQ smoking wellness nutr/activ asthma control</td>
<td></td>
</tr>
<tr>
<td>10:00a</td>
<td>PEDC 324</td>
<td></td>
</tr>
<tr>
<td>08/10/2015</td>
<td>ILNP 12/20/2000</td>
<td>27949580 14 YR WCC** all shots UTD</td>
</tr>
<tr>
<td></td>
<td>ADHD F-up</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHQ smoking wellness nutr/activ</td>
<td></td>
</tr>
<tr>
<td>10:40a</td>
<td>PEDC 324</td>
<td>men(1) HPV(1)</td>
</tr>
<tr>
<td>08/10/2015</td>
<td>ILNP 07/27/2003</td>
<td>12 YEAR CHECK** HAV(1) VOR(2) Tdap(1)</td>
</tr>
<tr>
<td></td>
<td>PHQ smoking wellness nutr/activ</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NEW PATIENT TO DR. CASLER BUT NOT PHYSICIANS ASSOCIATES</td>
<td></td>
</tr>
<tr>
<td>01:10p</td>
<td>PEDC 324</td>
<td>men(2)</td>
</tr>
<tr>
<td>08/10/2015</td>
<td>ILNP 10/20/1997</td>
<td>27949599 17 YEAR CHECK**</td>
</tr>
<tr>
<td></td>
<td><em>defer PHQ</em> smoking wellness</td>
<td></td>
</tr>
</tbody>
</table>
Electronic Order Sets*

N.B. We, sadly, do NOT have clinical decision support in our EMR

*Now updated with Gardasil 9 and two dose series follow-up orders.
Subsequent Doses Scheduled

- Second (and third) doses were scheduled the day dose one was administered.
- These appointments:
  - Print on patients’ clinical summaries
  - Generate reminder phone calls
  - Can be tracked if “no show” or cancelled
  - Can be reminded using manufacturer tools
- All practices committed to keeping schedules open at least six months ahead
Orlando Health Physician Associates HPV Rates
Patients Aged 13-17, 2013-2016

Data Reviewed
M.D. Education
Surveys completed

Staff Education
summer physicals

summer physicals

Sustainability Lectures

NIS TEEN RATES
Phase Two

• Sustainability meetings
  • Annual lunch meetings at each office.
  • Review rates and progress toward goals.
  • Review vaccine safety and efficacy with an eye toward personalizing disease prevention efforts.
  • Practice responding to patient and parent questions and concerns.
  • Re-supply of resources.

• Focused quality improvement efforts
  • Resident QI Projects
  • Targeted at offices with lower rates
  • Application of evidence-based best practices
Lessons Learned

- Practices are very busy:
  - Multiple competing priorities require that HPV vaccination earn its place in the ranking
  - Need for scalable, sustainable interventions that fit or even simplify current work flows

- Highest rated interventions:
  - Physician and staff education programs
  - Scheduling subsequent doses real time
  - Manufacturer-supplied tools, especially magnets and cling posters

- Reveals:
  - Transparency, Competition, Reward: THE WHY?
  - Staff involvement: a critical resource
Thank You