Children's Outcomes Research Program

The Children's Hospital, Aurora, CO
Colorado Health Outcomes Program
University of Colorado Denver

Barriers to Adult Immunization

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Disclosures

The investigators have no relevant financial relationships with any commercial interests.
Objectives

- Review preliminary data from a current study of adult immunization barriers
- Describe current stocking practices of adult vaccines and why this might lead to record scatter and interfere with adult immunization
- Characterize current awareness and use Immunization Information Systems (IIS) among physicians who care for adults
Methods

- Use sentinel physician networks to complete rapid turnaround surveys (Internet or mail) for vaccine policy decisions

- Sentinel physician networks
  - Recruited from random samples of AAFP and ACP
  - Quota sampling done to ensure networks similar to overall AAFP and ACP memberships

- Previous study* demonstrated this method produced comparable results to surveys conducted in random samples of physicians in the AMA Masterfile with respect to:
  - Physician demographics
  - Practice characteristics
  - Attitudes regarding vaccine-related issues

Methods

- Survey on Adult Immunization and Preventive Care
  - Survey Period March-June 2012
  - Current Response Rate-58%GIM, 43%FM

- Survey Regarding Use of Barcodes on Vaccines
  - Response Rate-58%GIM, 51%FM
Background

- Our previous work has evaluated vaccine specific barriers
  - Pneumococcal Vaccine Survey 2005
    - Acute problems taking precedence over preventive care
  - hepatitis B Vaccine Survey 2006
    - Lack of adequate reimbursement
    - ‘Up-front costs of purchasing vaccine
    - Other preventive issues taking precedence
    - Feeling too pressed for time to identify eligible patients
Background

- Herpes Zoster Vaccine Survey 2008
  - Cost concerns for patients (53%)
  - Reimbursement problems for my practice (52%)
  - Up-front costs of purchasing the vaccine (43%)
  - The need for patients to pick up vaccine at the pharmacy (23%)
  - The need for freezer storage (16%)
  - More pressing medical issues taking precedence (12%)
  - Difficulty obtaining the vaccine (12%)
Financial Barriers

- **Lack of adequate reimbursement for vaccine purchase**
  - Major barrier: 29%
  - Moderate barrier: 26%
  - Minor barrier: 23%
  - Not a barrier: 22%

- **Difficulty determining if a patient's insurance will reimburse for a vaccine**
  - Major barrier: 28%
  - Moderate barrier: 33%
  - Minor barrier: 23%
  - Not a barrier: 16%

- **Patients not having insurance coverage for vaccines**
  - Major barrier: 22%
  - Moderate barrier: 37%
  - Minor barrier: 27%
  - Not a barrier: 14%
Financial Barriers

- Lack of adequate reimbursement for vaccine administration:
  - Major barrier: 21%
  - Moderate barrier: 25%
  - Minor barrier: 28%
  - Not a barrier: 26%

- Upfront costs of buying vaccines:
  - Major barrier: 20%
  - Moderate barrier: 25%
  - Minor barrier: 26%
  - Not a barrier: 29%

- Potential financial loss due to expiration of vaccine prior to use:
  - Major barrier: 11%
  - Moderate barrier: 17%
  - Minor barrier: 37%
  - Not a barrier: 35%
Patient Refusal Barriers

1. Patients refusing vaccines because they do not think they need them:
   - Major barrier: 14%
   - Moderate barrier: 39%
   - Minor barrier: 41%
   - Not a barrier at all: 6%

2. Patients refusing vaccines for financial reasons:
   - Major barrier: 14%
   - Moderate barrier: 33%
   - Minor barrier: 38%
   - Not a barrier at all: 15%

3. Patients refusing vaccines because they feel they are unlikely to get a vaccine preventable disease:
   - Major barrier: 11%
   - Moderate barrier: 36%
   - Minor barrier: 45%
   - Not a barrier at all: 8%
Other Barriers

- Acute problems taking precedence over vaccinating
  - Major barrier: 14%
  - Moderate barrier: 35%
  - Minor barrier: 38%
  - Not a barrier at all: 13%

- Other preventive services taking precedence during time limited visits
  - Major barrier: 11%
  - Moderate barrier: 31%
  - Minor barrier: 40%
  - Not a barrier at all: 18%

- Difficulty determining whether a patient has received a particular vaccine
  - Major barrier: 11%
  - Moderate barrier: 39%
  - Minor barrier: 41%
  - Not a barrier at all: 9%
Infrequently Reported Barriers (<10%)

- Not having enough patients needing vaccines to justify the cost of stocking all vaccines
- Patients refusing vaccines for issues of safety or efficacy
- The hassle of storing vaccines
- Patients not coming in regularly for office visits
- The fact that patients can receive vaccines elsewhere
- The hassle of ordering vaccines
- Uncertainty about a particular vaccine’s effectiveness
- Not remembering to screen patients for needed vaccines
## Stocking of Specific Vaccines by Specialty (n=489)

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>% GIM</th>
<th>% FM</th>
<th>p-value*</th>
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<td>66</td>
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Number of Adult Vaccines Stocked by Specialty (n=489)

GIM reported stocking a median of 8 vaccines (25th-75th percentile is 5-10 vaccines)
FM reported stocking a median of 10 vaccines (25th-75th percentile is 8-11 vaccines)

p<0.001 for comparison between specialties
- Many physicians are not providing all routinely recommended adult vaccines
- Creates a situation where patients might need to be vaccinated outside of the medical home
- Patients being vaccinated outside of the medical home can potentially lead to a communication gap/record scatter
- Recall that several physicians reported that not being able to determine whether a patient had received a vaccine was a barrier to vaccinating
Proportion of Physicians Who Reported Rarely Being Informed of Patients Receiving Vaccines at Other Sites

- Pharmacy/retail store: 36%
- Public Health Dept.: 59%
- Another physician’s office: 50%
- Workplace: 77%
- Senior center: 69%
- Hospital/ED: 47%
Knowledge of Availability of an IIS Among Physicians from the 49 States with an IIS

p<0.001 for comparison between specialties
Reported Use of IIS

p<0.01 for comparison between specialties
Conclusions

- Physicians frequently report financial issues and patient refusal as barriers to adult immunization.
- Many physicians are not currently providing all routinely recommended adult vaccines.
- Communication between community vaccinators and primary care physicians is perceived as not occurring most of the time.
- Awareness and use of IIS for adult immunizations is limited, particularly for GIM physicians.
**Implications**

- Financial barriers and patient refusal are perceived to be interfering with adult immunization and more detailed research regarding these issues is warranted.

- Increasing awareness and use of IIS would allow for centralized information collection for patients receiving immunizations at multiple locations and would allow physicians to more readily track immunization status, potentially reducing missed opportunities for vaccination.
Vaccine Policy Collaborative Initiative

University of Colorado Denver

Principal Investigator – Allison Kempe, MD, MPH
- Laura Hurley, MD, MPH
- Lori A. Crane, PhD, MPH
- Mandy Allison, MD, MPH
- Sean O’Leary, MD, MPH

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- Andrea Clinger, BS
- Cindy Weinbaum, MD, MPH
- Ray Strikas, DVM, MPH
- Faruque Ahmed, PhD

Funding

CDC, through Rocky Mountain Prevention Research Center
Strengths & Limitations

- **Strengths**
  - Achieve high response rates for physician surveys
  - Nationally representative sample

- **Limitations**
  - Respondents may have differed from non-respondents
  - Sentinel physicians may differ from physicians overall
  - Survey results represent reported practice; actual practice not observed
David Johnson article-2008

- Survey of >2,000 adult consumers and 200 healthcare professionals
- Focused on Td, Influenza, PPV
- Sept-Oct 2006
- Telephone survey
  - Consumers-3.1% RR
  - Providers-3.5% (100 physicians)
- Provider perceived barriers
  - Failure of patients to come for regular office visits (73-88% across vaccines and type of provider)
  - Lack of an effective reminder system (62-77%)
  - Patients dislike of needles (67-71%)
  - Fear of adverse effects (65-87%)
  - Lack of knowledge of disease prevention (62-83%)
  - Inadequate insurance coverage (61-79%)
  - Cost of vaccines (43-62%)
### Szilagyi-2005

- Mail survey of primary care physicians
- Randomly selected 668 primary care physicians from AMA Masterfile
- Late 2000
- Only addressed influenza & PPV vaccines
- RR=33% (220/668)

#### Barriers to influenza vaccination
- Vaccine safety concerns by patients (58%)
- Urgent concerns dominating visit (43%)
- Inadequate reimbursement (26%)

#### Barriers to PPV
- Urgent concerns during office visits (44%)
- No patient immunization history (36%)
- Patient concerns about vaccine safety (31%)
- Inadequate reimbursement (25%)
Freed-2011

- 2009 Mail survey of primary care physicians from AMA Masterfile
- RR-59%
- 20% IM AND 31% FP stocked all recommended adult vaccines
Vaccine Specific Barriers

- Pneumococcal Vaccine Survey 2005 (RR-74% GIM)
  - Acute problems taking precedence over preventive care (10%)
  - Lack of adequate reimbursement for vaccination (7%)
  - Difficulty determining vaccination history (6%)
  - Patient refusal because insurance does not cover vaccine (6%)
  - The up front costs of purchasing vaccine (6%)

- Hepatitis B Vaccine Survey 2006 (RR-79% GIM, 65% FM)
  - Lack of adequate reimbursement (17%)
  - ‘Up-front’ costs of purchasing vaccine (17%)
  - Other preventive issues taking precedence over Hep B vaccination (16%)
  - Feeling too pressed for time to routinely assess patients for risk factors (16%)