SCOPE OF TODAY'S TALK

I. Background and Context

II. Service technologies: helping providers provide immunization services

III. Vaccine technologies
I. BACKGROUND
THE (FIRST EVER) NATIONAL ADULT IMMUNIZATION PLAN
FOUR OVERARCHING GOALS

INFRASTRUCTURE

GOAL 1:
Strengthen the adult immunization infrastructure

ACCESS

GOAL 2:
Improve access to adult vaccines

DEMAND

GOAL 3:
Increase community demand for adult immunizations

INNOVATE

GOAL 4:
Foster innovation in adult vaccine development and vaccination related technologies
OBJECTIVE NAIP AND NAIIS

I. Promote vaccination coverage across the lifespan

II. Find ways to reduce barriers to implementing vaccination services
   A. Forecasting vaccine demand
   B. Vaccine purchase
   C. Storage and handling
   D. Managing private inventories
   E. Billing
   F. IIS reporting (automatically from EHR)
   G. Means to improve immunization coverage
MANAGING THE BUSINESS OF VACCINATION: PROVIDERS

- Purchase of vaccines
- Manage inventory and associated supplies
- Payment for vaccine and vaccination services

Vaccination event
Forecast demand & Purchase of vaccines

Storage & management of inventory and associated supplies

Billing of and payment for vaccine and vaccination services

Quality improvement activities
To improve vaccination coverage

Input data

EHR/IIS
WHAT DOES IT “COST” THE PROVIDER TO IMMUNIZE?

• A.B. Forecast demand & purchase of vaccines
  – Order, track, and maintain supply, deferred payment
• C.D. Storage & management of inventory & associated supplies
  – Equipment
    • Refrigerator/freezer, temperature monitoring devices
    • Upfront purchase costs
    • Back-up power/alarms
  – Insurance for inventory
    • Opportunity cost of inventory – potentially hundreds of thousands of dollars tied up in inventory
VACCINATION EVENT

• Vaccine administration
  – Staff time
    • Discussions with individuals
    • Supplies
    • Documentation
    • Learning billing and coding across various payors
  – Hundreds of thousands of dollars tied up in inventory

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL VACCINE PROGRAM OFFICE
E. BILLING OF AND PAYMENT FOR VACCINE & VACCINATION SERVICES

CDC Vaccine Price List

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Brandname/Tradename</th>
<th>NDC</th>
<th>Packaging</th>
<th>CDC Cost/Dose</th>
<th>Private Sector Cost/Dose</th>
<th>Contract End Date</th>
<th>Manufacturer</th>
<th>Contract Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>00006-4841-41</td>
<td>10 pack – 1 dose vial</td>
<td>$25.73</td>
<td>$64.21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>58160-0826-52</td>
<td>10 pack – 1 dose syringe</td>
<td>$27.68</td>
<td>$63.10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Coding and Billing for Adult Vaccinations

A common problem that has been expressed by providers of adult vaccinations has been the intricacies and complexities associated with coding and billing for those services. Much discussion at meetings of the National Adult and Influenza Immunization Summit ("Summit") has focused on opportunities to provide information to providers to reduce the errors and confusion associated with coding and billing for adult vaccines. The Summit's Access and Provider Workgroup has developed this website in response to this identified need.

At this one web location, you will find the top questions identified with coding and/or billing for adult vaccinations, scenarios that detail how to go about coding and billing for adult vaccines, and collected resources from the Summit's medical association, public health, and vaccine information systems.

https://www.izsummitpartners.org/naiis-workgroups/access-provider-workgroup/coding-and-billing/
MANUFACTURERS PROVIDE HOTLINES

• Many manufacturers provide hotlines to assist coders; these may also offer guidance for claims preparation, appeals, and specific payers’ vaccine coverage and reimbursement policies

• Contact your vaccine representative to learn more about their reimbursement support services
DATA INPUTS AND QUALITY IMPROVEMENT

• F. Time to input data into EHR/IIS
• G. Quality improvement activities to improve vaccination coverage
CHALLENGES IN PURCHASING ADULT VACCINES

• Newer vaccines are more expensive

• No federal vaccine purchase program for adults

• Vaccine product pricing can vary depending on negotiated prices, which are confidential

• Adult vaccine providers have smaller economies of scale than pediatric providers for vaccinations
Quality improvement activities
To improve vaccination coverage

A.B. Forecast demand & Purchase of vaccines
C.D. Storage & management of inventory and associated supplies
E. Billing of and payment for vaccine and vaccination services

G. Manufacturers
F. Payors
BUSINESS SOLUTIONS

• Supporting the vaccination model: buy, vaccine and bill
• Automating purchasing, management dispensing to reduce barriers to vaccinating for practices
• Additional ability to conduct mass vaccination clinics as part of emergency response in school settings or as part of occupational health clinics
BUSINESS SOLUTIONS CONT.

• Public and private sector settings
• Across patient age cohorts & geographic settings
• In various practice types including large health systems, private practices, group practices
• **GOAL**: expand accessibility of vaccines to all patients and all health care provider types in all settings to expand immunization services and improve vaccination coverage
II. VACCINE TECHNOLOGIES
FUTURE OF VACCINE DELIVERY METHODS

• Multiple carrier systems
  – Liposomes, microspheres, nanoparticles
  – Control how antigen is presented to immune system to allow for sustained release, cellular targeting

• Needle-free patch
  – Dendritic cells engaged to present antigen delivered by microneedles of sugar which dissolve

• Inhaled and oral vaccines
  – Delivery of antigen into lungs – pulmonary immune response; Or into gut - engaging GALT
  – Would mimic entry of many pathogens
  – Also potential engagement of mucosal immunity
FUTURE OF VACCINE DELIVERY METHODS

• Microneedle arrays
  – Also engaging dendritic cells in the skin
  – Arrays (patches) of microneedles less than 1mm long

• Transcutaneous immunization (TCI)
  – Again, trying to engage skin associated immune cells
  – Techniques to create abrasions in the skin where the antigen would be introduced
SMART REFRIGERATION

- These are purpose-built, pharmaceutical-grade vaccine storage and management systems
  - More than just a freezer or refrigerator
  - May have design features (e.g., door-less) to ensure temperature stability, even during heavy, continuous use
  - Have integrated temperature monitoring, recording, alerting
  - May allow for precise inventory management, such as automatic stock rotation, real-time stock levels, alerts for low stock or near-expiry stock, etc.
  - Allows for EHR integration - saves time and eliminates transcription and billing errors
  - May feature automatic back-up in case of main power outage
- One system is currently in commercial use
  - Pediatric and adult
  - Single-practitioner; large IDN; university health system
MANY THANKS

• LJ Tan, Immunization Action Coalition

• Gus Birkhead, NVPO