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# Use of Barcode Scanning Functionality to Improve Data Quality and Efficiency During Mass Vaccination Events

Presented by Jan Bloom, MS  
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Lost Springs, Wyoming (2000 Census)

# Overview

- **Background**
- **Phase summary**
- **Challenges**
- **Successes**
- **Lessons learned**



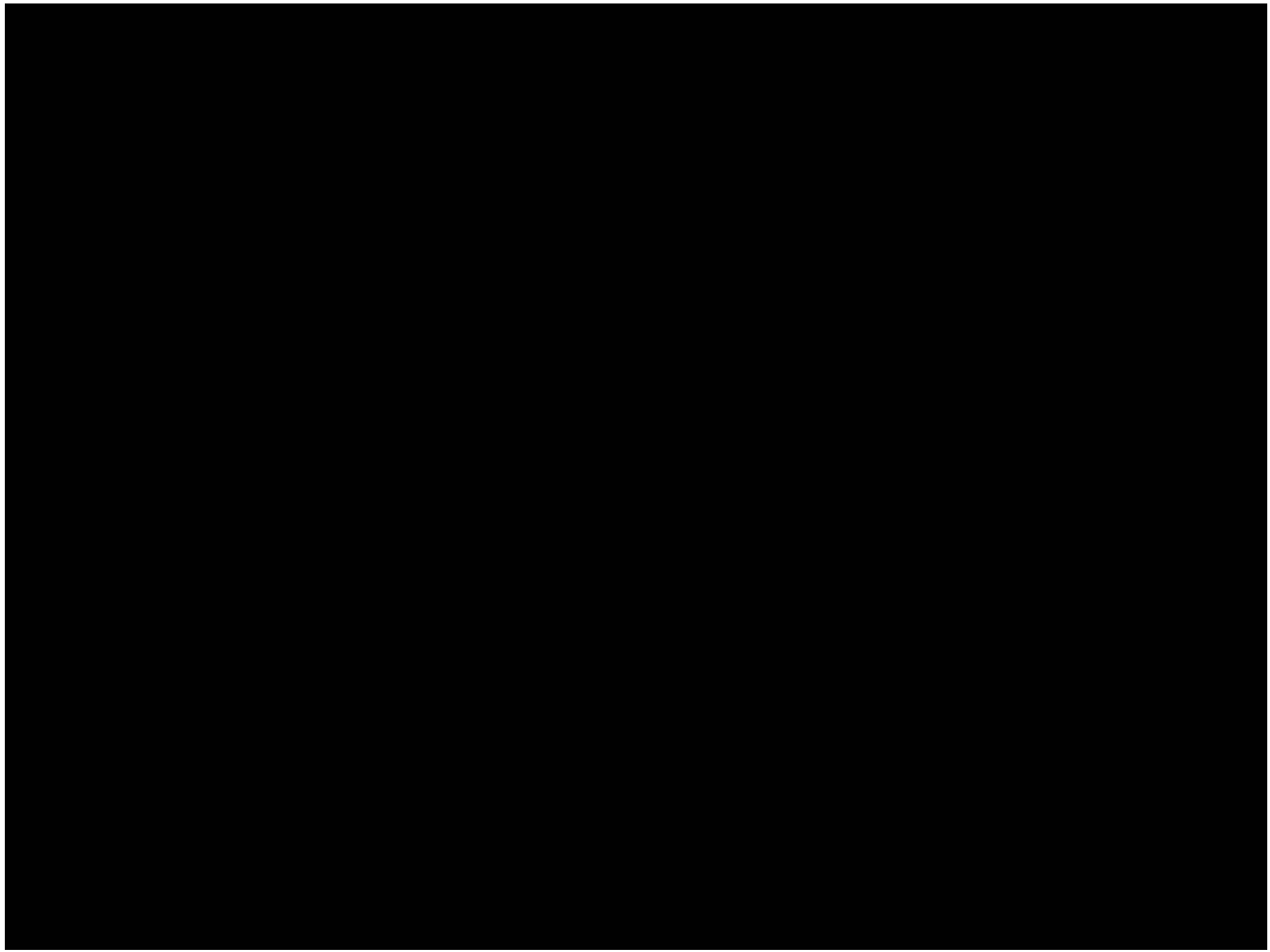
# Background

- **Received competitive, supplemental grant in CY2009 from the CDC**
- **Purpose:** To enhance the capacity of the Wyoming Immunization Registry (WyIR) to more effectively function as a data collection and reporting tool during a future pandemic influenza event and to facilitate further development of WyIR as a population-based Immunization Information System (IIS).
- **Funding:**
  - Barcode scanning functionality, developed by Scientific Technologies Corporation (STC), IIS vendor
  - Barcode scanners (12)
    - Tethered
    - Untethered (wireless)

# Wyoming Driver's License

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# Phases

- **Phase I: Alpha-testing, February 2011**
  - 1 ½ hours of training, including technology set up (e.g. barcode font installation), training on technology, and Q&A
- **Providers:**
  - Cheyenne Health & Wellness (FQHC)
  - Midwest Community Clinic (private provider)
  - Sheridan County Community Health

# Phases, continued

- **Phase II: Beta-testing, June 2011**
  - Integrate lessons learned from alpha-testing and “bug” fixes
- **Providers**
  - Albany County Public Health
  - Campbell County Public Health
  - Casper-Natrona County Health Department
  - Cheyenne-Laramie County Health Department
  - Sweetwater County Public Health-Rock Springs & Green River

# Phases, continued

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- **Phase II ½: Providers who signed up to participate following “Pink Book” training demonstration, July 2011**
  - Alpha Family Medical Clinic (private provider)
  - Billings Clinic-Cody (private provider)
  - Cedar Hills Family Practice (RHC)
  - Carbon County Public Health-Saratoga & Rawlins
  - Fremont County Public Health-Lander & Riverton
  - Goshen County Public Health
  - Hot Springs County Public Health
  - Johnson County Public Health
  - Lincoln County Public Health-Afton & Kemmerer
  - Platte County Public Health
  - Teton County Public Health
  - Uinta County Public Health-Evanston & Lyman

## Phases, continued

- **Phase III: “Go live” – Success #1**
  - Campbell County Public Health
    - October 2011
    - Community-wide, office-based seasonal influenza vaccination clinic
      - 3 scanner stations –  
1 check-in, 2 “administered” stations
    - 1,200+ doses entered into the WyIR within a 12-hour period in “real time”



# Phases, continued

- **Phase III: “Go live” – Success #2**
  - Cheyenne Health & Wellness (FQHC)
    - October 2011
    - Large employer (Sierra Trading Post) flu vaccination clinic for employees
    - 312 doses given and entered into the WyIR in four hours (clinic administered by two individuals)
    - Cheyenne Health & Wellness used barcoding system at seasonal influenza clinics held at:
      - Nursing homes
      - Social Service agencies
      - College campus
      - Community events
      - Health fairs
      - Clinic-based events
      - Numerous employer-sponsored

# Challenges

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- Wyoming served as “Barcode Pioneers” -- no trailblazers to follow
- Integration of the technology into existing office workflow, given varied processes within offices (i.e. “high tech” solution in a “low tech” office)
- Helping providers see beyond the original intended use of the technology (scanning 2D codes on driver’s licenses or state-issued ID cards) – using reminder/recall for pediatric patients
- Some offices expressed interest in using technology but didn’t follow through for a variety of reasons
- Technical issues – system “bugs” which needed to be fixed by registry vendor in a timely - rapid - manner
- Technical issues to be addressed prior to “go live”
- Lack of training manuals prior to “go live” – training was provided “live” and on-site (Wyoming has more than 97,000 square miles)



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# Wyoming



★ Phase I sites

★ Phase II sites

★ Phase III sites

# Successes

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- Improved efficiency during mass vaccination events
- Improved efficiency during routine vaccination visits
- Improved accuracy in immunization data
- Increased number of adult immunizations entered into the WylIR
- “Waiting Room” functionality expedited clinic processes
- Time savings reduced staffing requirements (e.g. reduced staffing needs for data entry by 2/3)
- Able to use technology during off-site clinics with minimal staffing (i.e. mobile technology)
- Able to loan equipment for large-scale clinics as needed
- Public Health Emergency Preparedness (PHEP) purchased additional scanners
- Some offices chose to purchase additional scanners

# Lessons Learned

- Coordination with Wyoming Department of Transportation (WYDOT) critical to success (Interagency Agreement)
- Equipment Usage Agreement required approval from the Attorney General's office
- Certain registry permissions were necessary prior to on-site training/technical assistance
- End users implemented new strategies for integrating barcodes for individuals without driver's license or state-issued ID cards
- More frequent and timely follow up to ensure effective implementation of the technology
- Positive press coverage prior to mass vaccination event prepared public for new technology (i.e. patients were not reluctant to present driver's license during clinic check-in)

# Community Flu Clinic Pre-event Press Coverage

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## Gillette News Record

THURSDAY EVENING, OCT. 6, 2011 \* 50¢ \* GILLETTENEWSRECORD.COM

### It's time for flu shots; this time with scanners

By **GABRIELLE PORTER**  
**NEWS RECORD WRITER**

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The first Campbell County Public Health flu vaccine clinic of the season Friday will be more high-tech than in past years.

The department will be using hand-held scanners to speed up the data entry process, according to Public Health nurse supervisor Jane Bradberry.

Wyoming requires all immunizations to be entered into a state-wide registry, usually within 72 hours. That includes the type of immunization given, as well as the

person's name, birth date, address and phone number. For minors, it includes their guardian's name.

Since the department usually holds its clinics on Fridays, Bradberry said time spent typing adds up and spills over into the weekend.

"We can typically give up to 1,500 shots during our flu clinic," she said. "That's a lot of administrative time."

At Friday's clinic, workers will scan the bar codes on the backs of Wyoming driver's licenses and Wyoming ID cards. It will automatically enter the person's demographics — nothing more than

what would have been entered by hand. They then will enter in the type of vaccine the person receives, and the process is over.

"Basically, this is like two or three clicks," Bradberry said. "This would be a matter of a couple of minutes as opposed to the data entry they'd have to do ... hand type in all of their demographics."

Beside saving time, Bradberry said the scanners also will cut back on errors in the system. For example, if two people in two places have the same name, they

See **FLU SHOTS**, Page A6

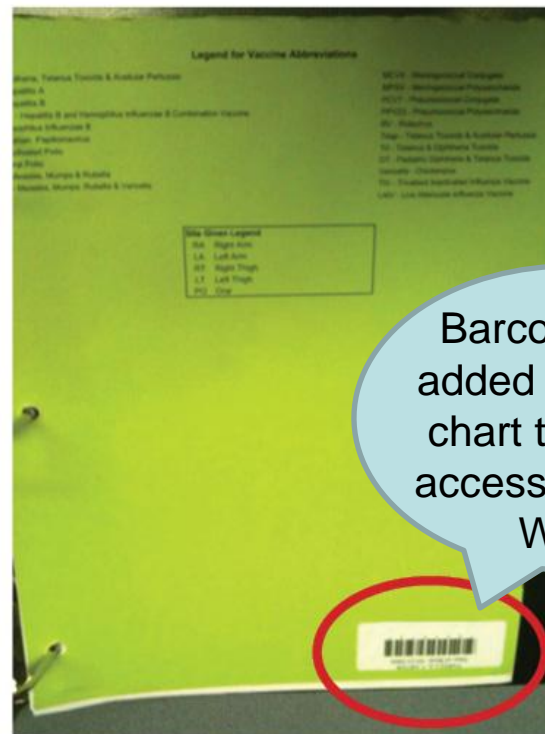
#### Flu vaccine clinic

The Campbell County Public Health department recommends that everybody older than 6 months get a flu vaccination.

#### IF YOU GO

- \* **When:** 7 a.m. to 7 p.m. Friday
- \* **Where:** Campbell County Public Health Office at 2301 S. 4J Road.
- \* **Bring:** If you have a Medicare, Medicaid or Kid Care CHIP card, bring it; otherwise, shots are \$15 each for adults and children.

# New Strategies for Using Barcodes



Barcode label  
added to patient  
chart to quickly  
access record in  
WyIR

# New Strategies for Using Barcodes, continued

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Key tag for patients without a driver's license or state-issued ID.



Key tag program targets patients under 5 years of age.

Key tag used by Campbell County Public Health, Gillette, WY



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Lost Springs, Wyoming (2010 Census)

# Acknowledgements



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## Contact me with questions about barcoding.

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