HEPATITIS B BIRTH DOSE IMMUNIZATION

Johnson County, Kansas
2013 Research Project
Agenda

• **Essential Public Health Services – A Framework for Improving the Public’s Health**

• **Background & Context**

• **Essential Public Health Services (Initiated)**
  - Monitor health
  - Diagnose and investigate
  - Mobilize community partnerships

• **Essential Public Health Services (Planned)**
  - Develop policies (plans)
  - Assure competent workforce
  - Evaluate
  - Research
Essential Public Health Services
A framework for improving the public’s health

- Public health’s purpose is to assure conditions in which people “can be healthy.”
- Accomplished through the core public health functions and essential public health services.
- Systems focus: Work with others to assure health.

Source: CDC
Essential Public Health Services
A framework for improving the public’s health

To this date this project has covered:

1. Monitor health – descriptive epidemiology
2. Diagnose & Investigate – analytical epidemiology, surveys, discussions
3. Partnerships – recruiting labor & delivery units and CHAP
Essential Public Health Services
A framework for improving the public’s health

In the future this project will cover:

5. Develop policies – plan interventions to improve the birth dose rate

6. Evaluate – monitor rates over time using a quality improvement focus

7. Research – work to expand the evidence base for how parents’ form opinions about childhood immunizations

Source: CDC
Hepatitis B is a Killer

- Hepatitis B is a contagious liver disease that results from infection with the hepatitis B virus.

- Some people are able to “clear” the infection, but many become chronically infected, having it for their entire life.

- Over time, chronic infection can cause serious health problems. 15% to 25% of individuals chronically infected will die prematurely.

Risk of Death
Chronic Hepatitis B Infection

- 25% Premature Death
- 75% Survive (low estimate)

- Die (high estimate)
Background & Context
Chronic hepatitis B infection is related to age

Infants are at much greater risk of becoming chronically infected after initial infection.

Risk of Chronic Hepatitis B Infection, by Age of Initial Infection

- **Infants**: 90% Risk
- **Children**: 20% to 50% Risk
- **Teenagers and Adults**: 1% to 10% Risk
Background & Context

Hepatitis B is a “hidden” epidemic

• ≈1,000,000 prevalent cases in the U.S.
  • Many don’t know they are infected
  • Most were infected as children

• 333 new cases were identified in Johnson County from 2008 to present
  • This is likely underreported
  • Not all individuals infected are tested and identified
  • Not all individuals reported can be followed-up with
  • Prevalence is unknown but is likely in the thousands
Background & Context

Hepatitis B immunization at birth is effective at stopping infection

- ACIP recommends that all infants are vaccinated against hepatitis B at birth.
  - “Birth dose”
- The “birth dose” is **75% to 95%** effective at preventing transmission and chronic infection.
- Healthy People 2020 has set a national goal for 85% coverage of the “birth dose.”
Background & Context

Children that get the “birth dose” are more likely to get other childhood immunizations

• Research has shown that:
  • Children that receive the birth dose are more likely to receive all other childhood immunizations.
  • Hepatitis B birth dose coverage may be an early indicator of childhood immunization rates.
  • Factors influencing the receipt of the birth dose likely influence the receipt of all childhood immunizations.
  • Addressing the birth dose may have a positive impact on all childhood immunizations.
Background

• Chronic hepatitis B kills 15% to 25% of those with chronic infection.
• Babies are at greatest risk of chronic infection.
• Many people are infected and can spread hepatitis B – most don’t know they are infected.
• Hepatitis B “birth dose” is effective at preventing infection.

Problem Statement

• Hepatitis B “birth dose” rate has dropped in Johnson County, leaving many infants unprotected when they are most vulnerable.
What opportunities are there to influence parental attitudes about childhood immunizations:

- **Interviews**: Pregnant Women (Attitudes)
- **Survey**: ObGyns (Education)
- **Discussion**: Hospitals (Practice)

Opportunities for Intervention

Descriptive Epidemiology (measure risk)
EPHS 1: Monitor Health Status
Descriptive Epidemiology

Analysis of Birth Certificate Records

1. Identify trends over time
2. Identify populations at greatest risk
EPHS 1: Monitor Health Status
Birth dose coverage has plummeted in Johnson County

Source: KDHE Birth Certificate Research Files
EPHS 1: Monitor Health Status
Trend over time by race and ethnicity

![Graph showing the trend of Hepatitis B vaccine administration at birth by race and ethnicity from 2005 to 2010. The graph indicates a decline in vaccination rates over time for all races and ethnicities.](image-url)
EPHS 1: Monitor Health Status
Trend over time by educational attainment

![Graph showing trend of Hepatitis B vaccine administration at birth by educational attainment from 2005 to 2010.](image)
EPHS 1: Monitor Health Status
Trends over time by health insurance status

Administration of Hepatitis B Vaccine at Birth
- Private/Employer Insurance
- Medicaid
- Uninsured


Percentage: 0%, 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
Findings

1. Birth dose coverage has dropped among all socio-demographic groups in Johnson County.

2. This has been most dramatic among:
   - The Hispanic population
   - Those without a high school degree
   - Those without health insurance

3. Lacking health insurance was found to be the most important risk factor.
EPHS 2: Diagnose and Investigate
Conceptualize and investigate why the “birth dose” has dropped

Conceptual Framework
1. Soon-to-be parents attitudes toward childhood immunizations have changed.
2. Promotion from credible sources “early on” may improve attitudes.
3. “Last chance” promotion at the hospital may improve uptake.

Investigation
1. What are ObGyns discussing with their patients during pregnancy?
2. What are hospital labor and delivery units including in their care during the hospital stay?
3. What are the barriers to the “birth dose”?
4. What are the opportunities for improvement?
Parental attitudes toward childhood immunizations are associated with their children being immunized.
Sources of Influence

- Regular & Reoccurring
  - Family
  - Friends
  - Media

- Near term Influence
  - Obstetricians

- Last Chance Influence
  - Labor and Delivery Units

Parental Attitudes

- Positive Attitude
  - Child is vaccinated

- Negative Attitude
  - Child is not vaccinated
EPHS 2: Diagnose and Investigate

Conceptual framework

Public Health Interventions

Regular & Reoccurring
- Family
- Friends
- Media

Near Term Influence
- Obstetricians

Last Chance Influence
- Labor and Delivery Units

Parental Attitudes

What opportunities are there for the public health system to intervene?

Child is not vaccinated

Negative Attitude

Child is vaccinated

Positive Attitude
EPHS 2: Diagnose and Investigate
Survey of ObGyns

Purpose

1. Identify gaps – are ObGyns educating patients about childhood immunizations?
2. Identify risk factors – what is associated with this education?
3. Identify suggestions for assistance.

Response Rate

1. 42 of 106 ObGyns responded to the survey (40%).
2. 5 were excluded because they did not provide prenatal care.
3. A total of 37 ObGyns were included in the analysis.

Immunize Kansas Kids
JOHNSON COUNTY KANSAS
Health & Environment
## Findings

- **Less than 50%** of ObGyns provide education about childhood immunizations, hepatitis B birth dose, hepatitis B disease, and the Vaccines for Children Program.

*Physicians can have a great influence on their patients behavioral attitudes – The public health system should work to empower ObGyns to provide education.*
EPHS 2: Diagnose and Investigate
Risk Factors – Association with Education

<table>
<thead>
<tr>
<th>Protective Factors</th>
<th>Percent (yes)</th>
<th>Childhood Immunization</th>
<th>Hepatitis B Birth Dose</th>
<th>Hepatitis B Disease</th>
<th>VFC Program</th>
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<td>Knowledge of Immunization Schedule</td>
<td>67%</td>
<td>RR=6.5</td>
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<td>Knowledge of VFC program</td>
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<td>Perceived Barriers to Education</td>
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</table>

Findings

- 33% of ObGyns were not familiar with the immunization schedule.
  - Associated with education about childhood immunizations, hepatitis B birth dose (NS), hepatitis B disease, and the VFC program.
- 49% of ObGyns were not familiar with the VFC program.
- 57% of ObGyns perceived barriers to educating in their practice.

*Information about the immunization schedule and VFC program may help improve patient education.*
EPHS 2: Diagnose and Investigate
Review of Findings

Opportunities

• 97% of ObGyns thought all infants should receive Hep B birth dose – There is buy in from the ObGyn population.
• A majority (63%) thought it was possible to educate all parents

Barriers

• 35% said they are too busy to educate patients
• 34% said they are not influential
• 32% said they don’t have educational materials
• 17% said that hepatitis B is not a problem in Johnson County
• 16% said parents are have made up their minds

The public health system has a multitude of opportunities to support ObGyns in educating their patients about childhood immunizations.
EPHS 4: Mobilize Community Partnerships
Discuss the issue with hospital labor & delivery units

**Purpose**
1. To identify policies and practices that may be attributed
2. To identify potential partners to address this issue
3. Try to formalize a partnership
EPHS 4: Mobilize Community Partnerships
Discuss the issue with hospital labor & delivery units

Process
1. Short interviews were completed with 5 of the 6 hospitals serving Johnson County.
   • This included all hospitals in JOCO as well as the University of Kansas Medical Center.
2. Questions were general and open ended to allow the participants to provide information that they thought was important.
3. Topics included: (1) Policies and practices, (2) why infants might not be vaccinated, (3) data quality, and (4) interest in partnering.
4. Data
   • Number of labor & delivery units reporting a phenomenon.
   • Quotations (paraphrased)
Findings: Policies and Practice

- Have a written policy: Yes 3, No 2
- Have standing orders: Yes 5
- Consent taken prior to birth: Yes 4, No 1

“We get consent in our birthing classes around 36 weeks.”

“We discuss the importance of being immunized to hesitant parents.”
EPHS 4: Mobilize Community Partnerships

Findings

Findings: Why wouldn’t the birth dose be given?

- Parents want to wait to get it from their pediatrician: 4 Yes, 1 No
- Parents get their information from the internet: 2 Yes, 3 No

“Parents are getting their information from the internet. Some skip our educational courses. This seems to be getting worse.”

“Some (physician) practices prefer that they provide the first dose in their clinic. This can be weeks after birth.”

“It’s more difficult to provide the same level of care to people that don’t speak English. We have the systems to do this, but it just isn’t the same.”
EPHS 4: Mobilize Community Partnerships

Findings

Findings: Birth Certificate Data Quality

Birth certificate data is very accurate

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<th>Yes</th>
<th>No</th>
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<tr>
<td>Count</td>
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<td>3</td>
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</table>

There may be some issues with data quality

“I think it is very accurate… our registrar physically checks the nursery.” (n=2)

“Our registrar fills it in if it is on the paper record… But if there isn’t a paper record they don’t have access to the electronic medical records.” (n = 2)

“Most of the fields in the birth certificate are required… you can’t complete the form without entering them. The birth dose is not required.”

“Birth certificate data is one of the most important pieces of public health surveillance. It is vital that all records are completed as accurately as possible.” – CDC & WHO
EPHS 4: Mobilize Community Partnerships

Findings

Findings: Partnership Opportunities

- Willing to work to address this issue: Yes - 5
- Willing to provide JCDHE with up-to-date information: Yes - 5

All labor & delivery units were willing to share data and work to address this issue.

Many of the individuals I worked with seem very enthusiastic about this partnership!

CHAP's Access to Care group may be a good “house” for them.
Future Essential Public Health Services

EPHS 3: Educate and Empower
• ObGyns and labor and delivery units were provided information
• CHAP presentation

EPHS 5: Develop Policies
• Plan for addressing this (and potentially other issues) with the labor and delivery units.

EPHS 9: Evaluation
• Monitor birth dose rates using hospital administrative data – process to be determined

EPHS 10: Research
• Explore how pregnant women form opinions about childhood immunizations through a qualitative study.