

HEPATITIS B BIRTH DOSE IMMUNIZATION

Johnson County, Kansas
2013 Research Project



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

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



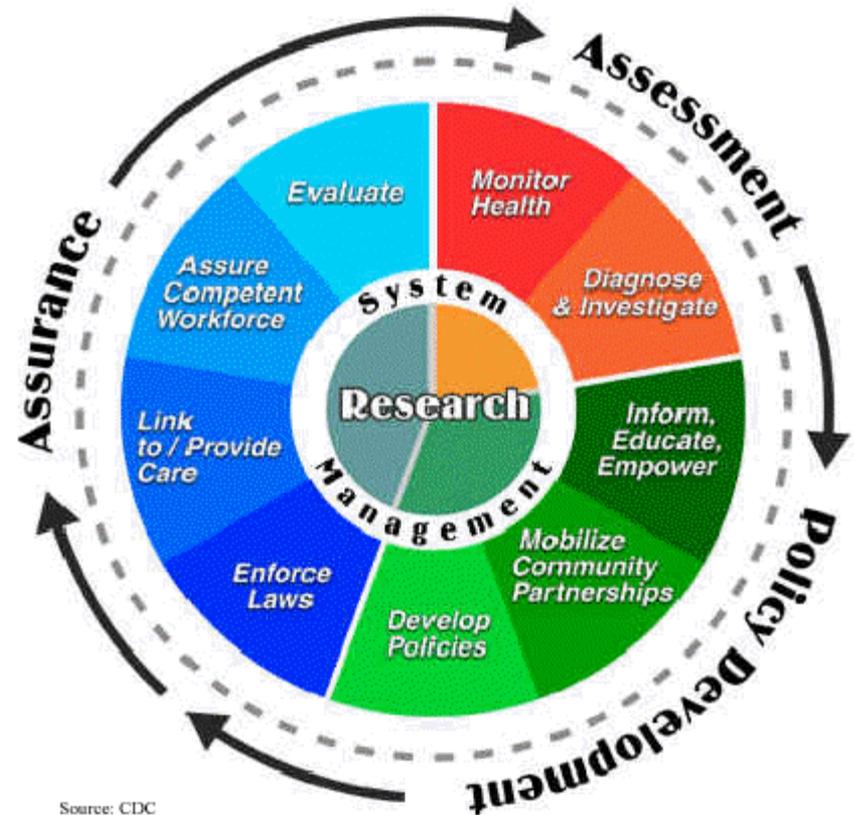
IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

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.



IMMUNIZE KANSAS KIDS

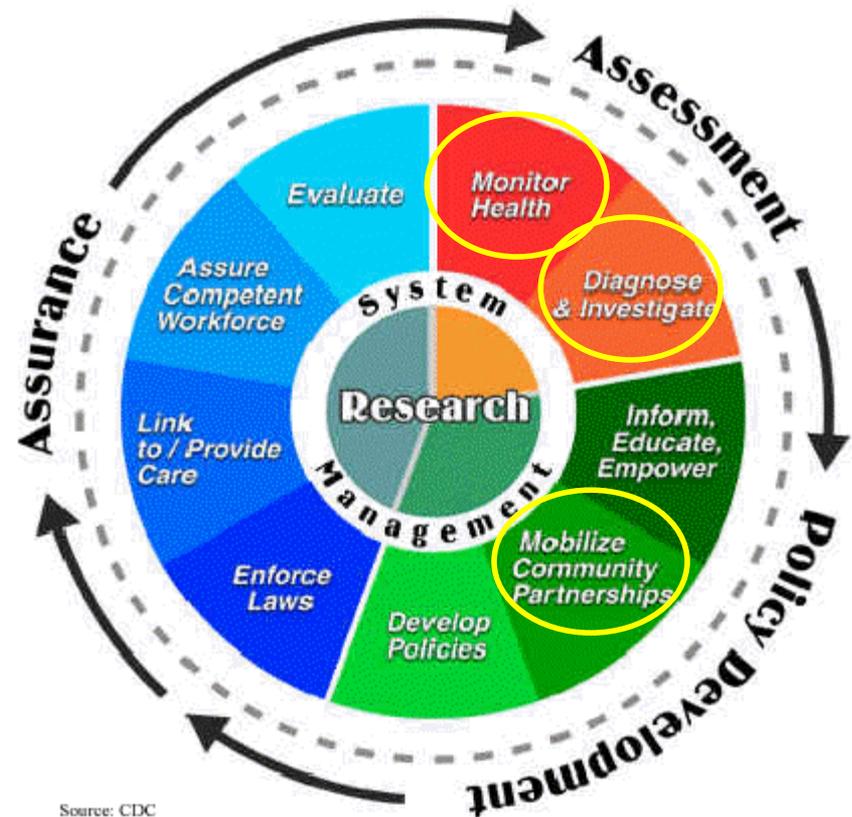
JOHNSON COUNTY
KANSAS
Health & Environment

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



IMMUNIZE KANSAS KIDS

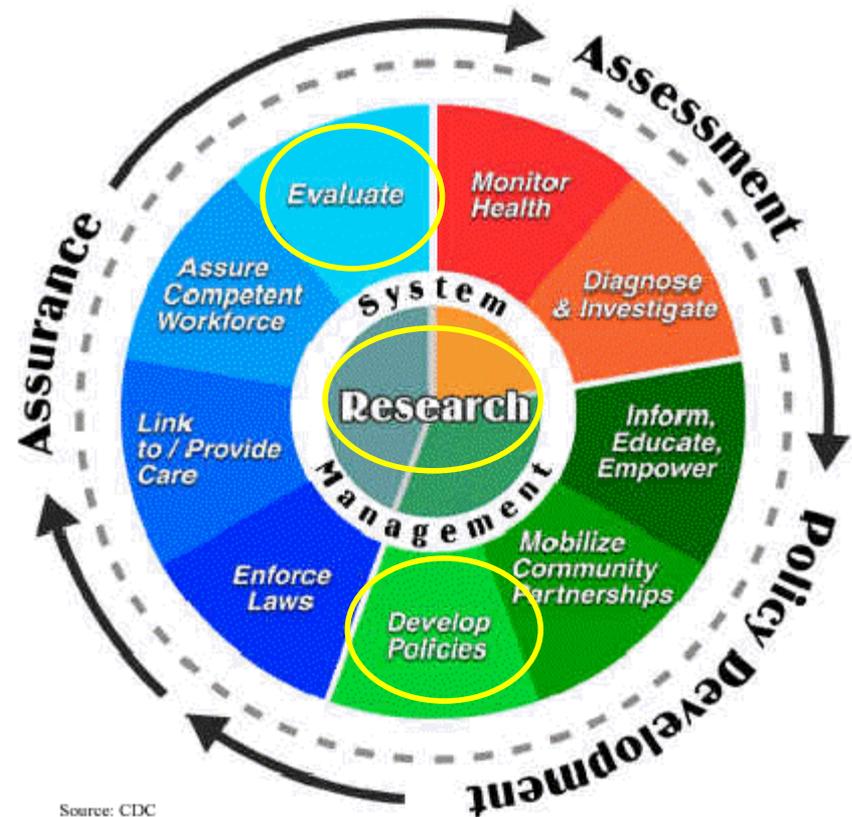
JOHNSON COUNTY
KANSAS
Health & Environment

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



IMMUNIZE KANSAS KIDS

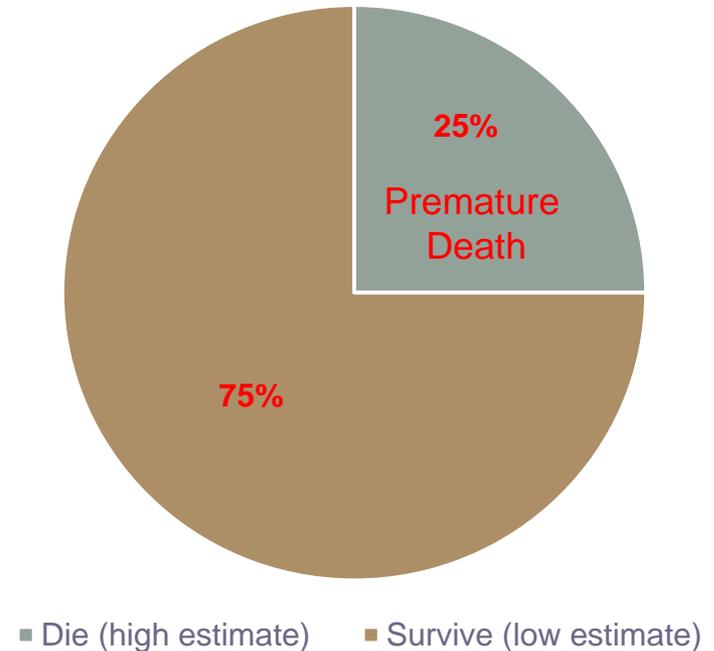
JOHNSON COUNTY
KANSAS
Health & Environment

Background & Context

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

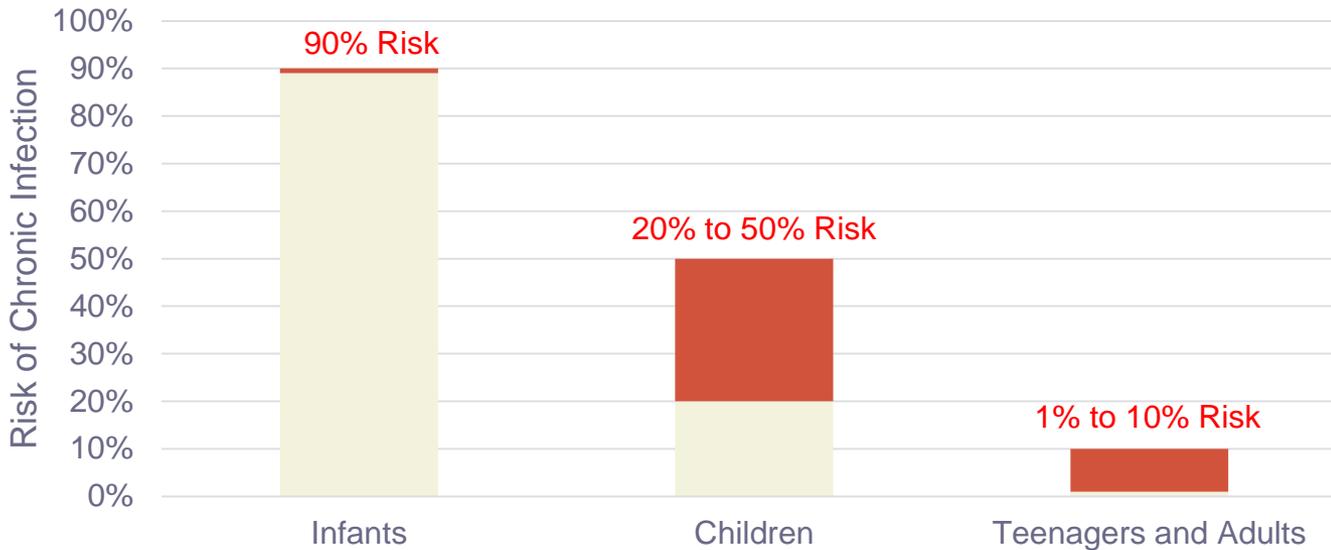


Background & Context

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

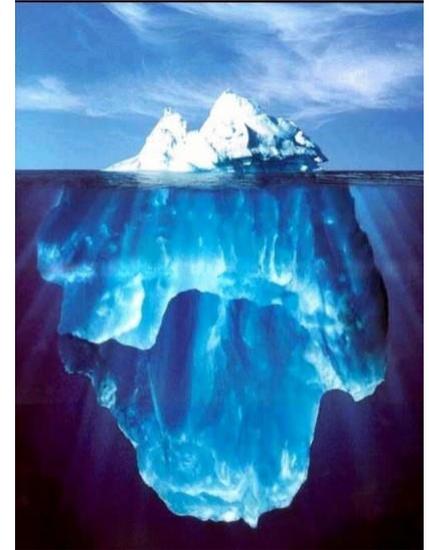


Background & Context

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

Identified Cases



Unidentified Cases



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

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.”



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

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.



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

Background & Context

Problem statement revisited

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.

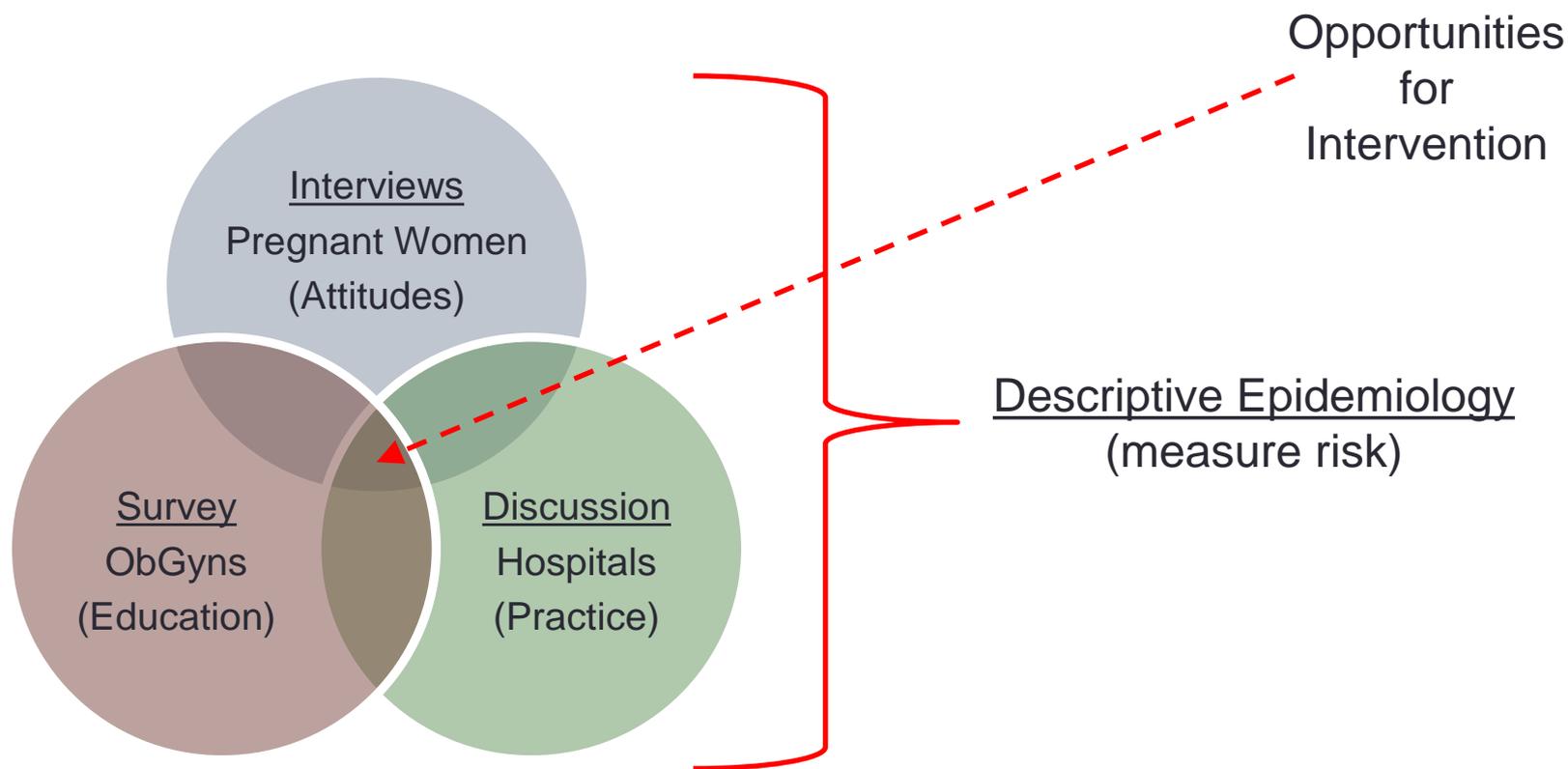


IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

Project Framework

What opportunities are there to influence parental attitudes about childhood immunizations:



EPHS 1: Monitor Health Status

Descriptive Epidemiology

Analysis of Birth Certificate Records

1. Identify trends over time
2. Identify populations at greatest risk

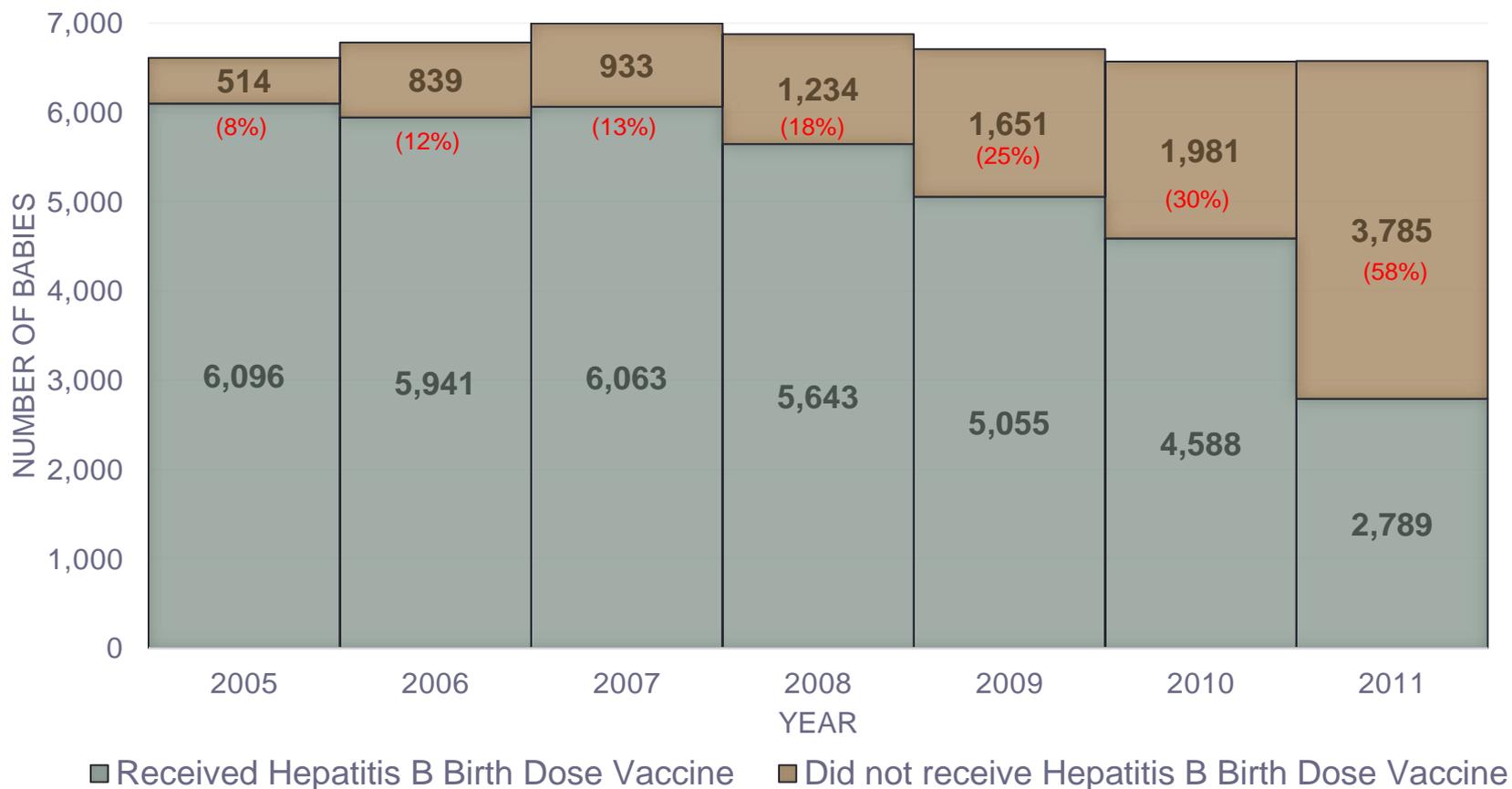


IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

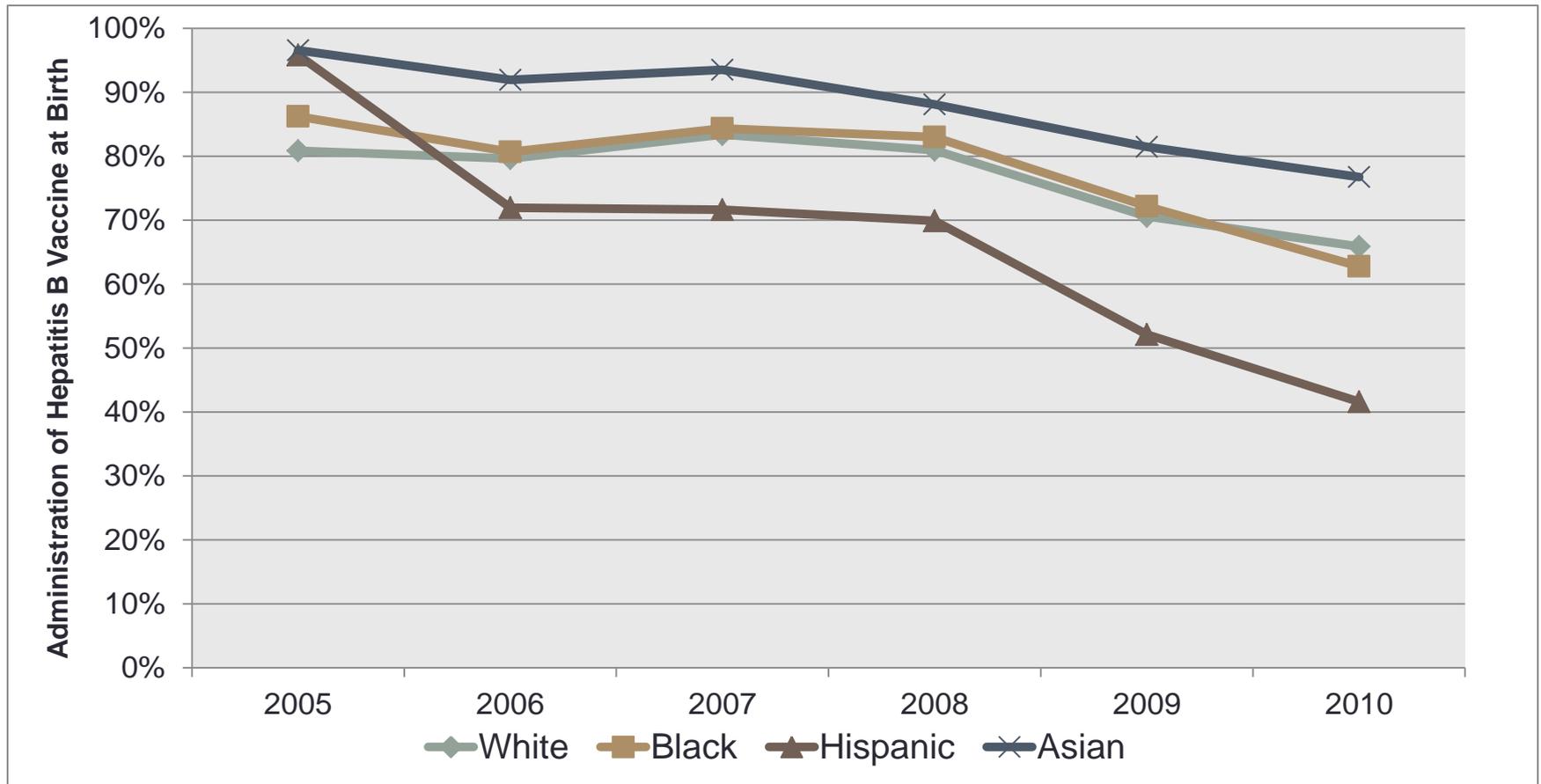
EPHS 1: Monitor Health Status

Birth dose coverage has plummeted in Johnson County



EPHS 1: Monitor Health Status

Trend over time by race and ethnicity

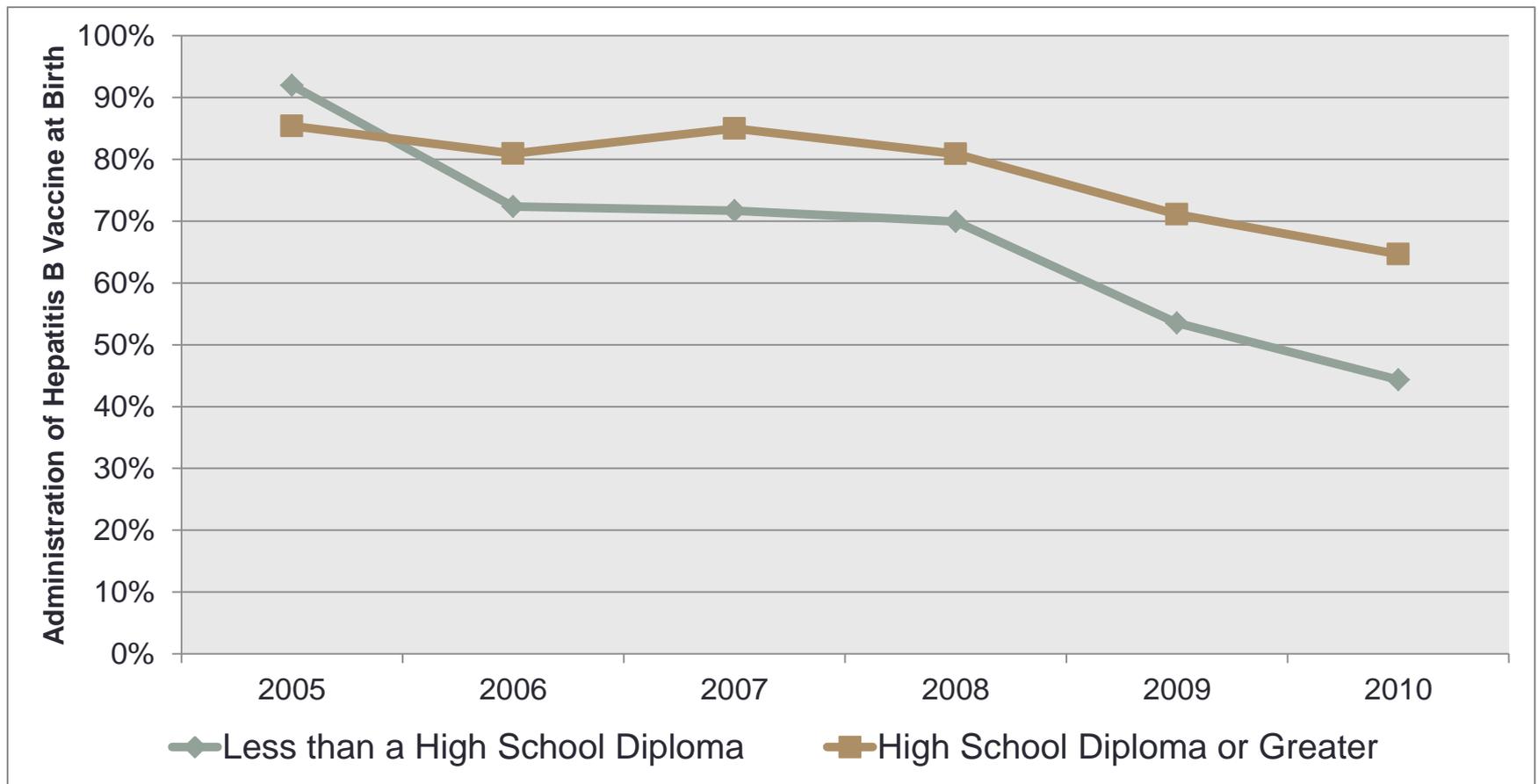


IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 1: Monitor Health Status

Trend over time by educational attainment

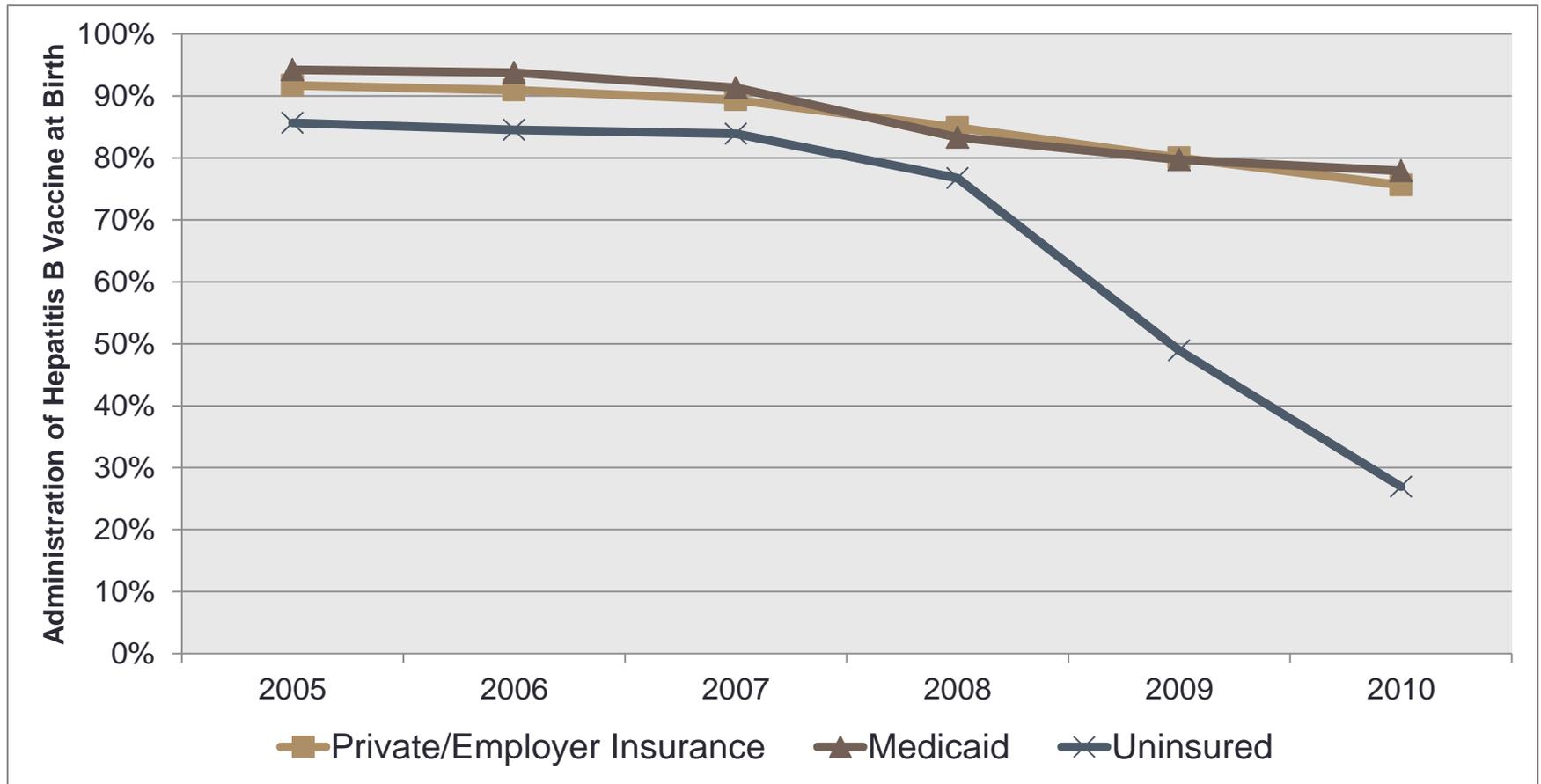


IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 1: Monitor Health Status

Trends over time by health insurance status



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 1: Monitor Health Status

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

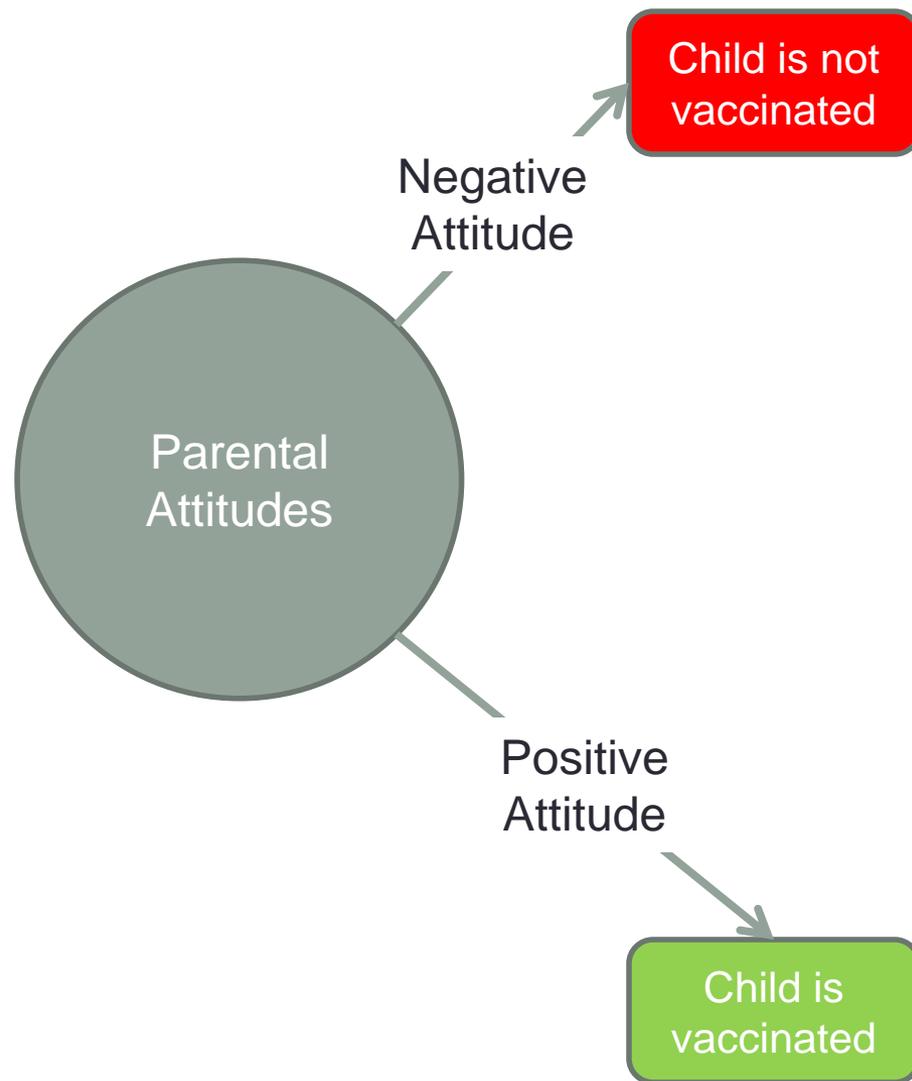
1. What are ObGyns discussing with their patients during pregnancy?
2. What are hospital labor and delivery units including in their care during the hospital stay?
3. What are the barriers to the “birth dose”?
4. What are the opportunities for improvement?



EPHS 2: Diagnose and Investigate

Conceptual framework

Parental attitudes toward childhood immunizations are associated with their children being immunized.



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 2: Diagnose and Investigate

Conceptual framework

Sources of Influence

Regular & Reoccurring

- Family
- Friends
- Media

Near term Influence

- Obstetricians

Last Chance Influence

- Labor and Delivery Units

Parental Attitudes

Negative Attitude

Child is not vaccinated

Positive Attitude

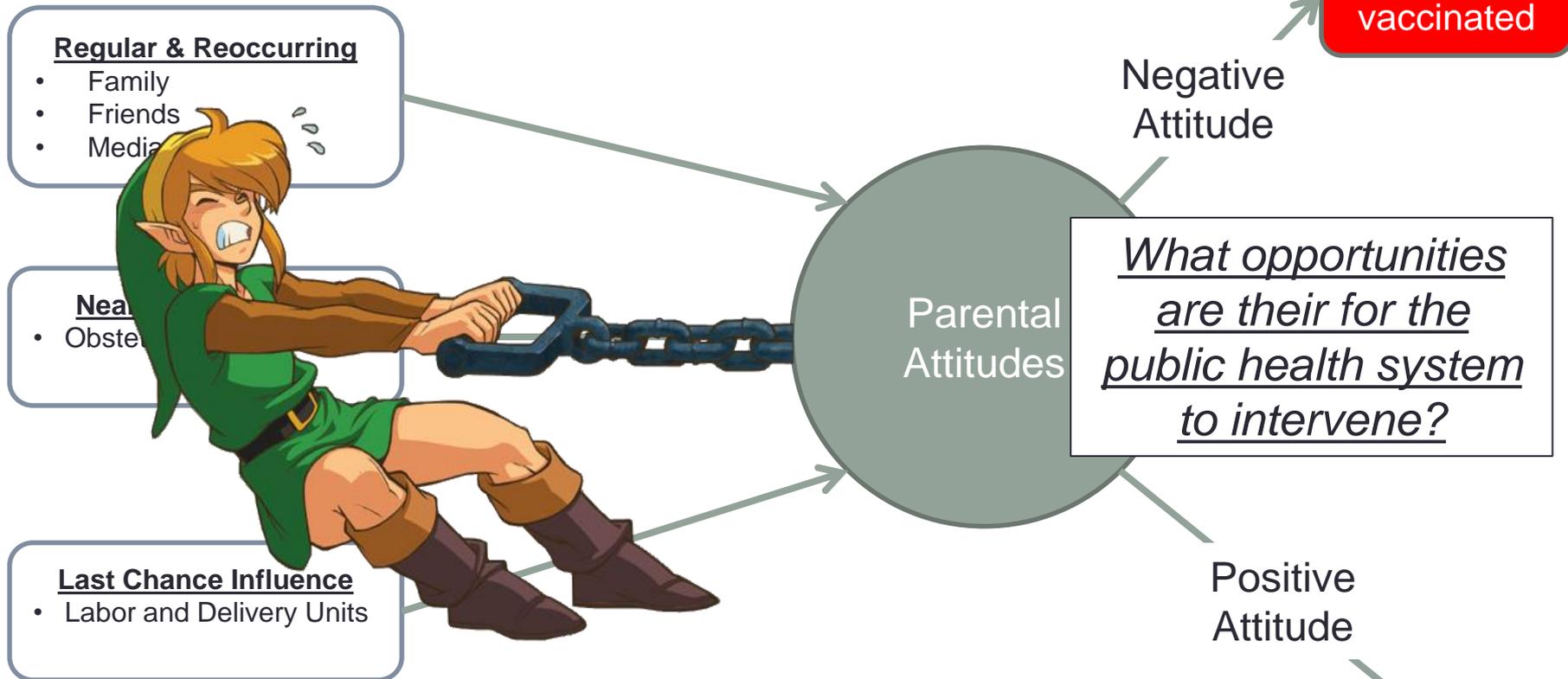
Child is vaccinated



EPHS 2: Diagnose and Investigate

Conceptual framework

Public Health Interventions



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

EPHS 2: Diagnose and Investigate

Gap Analysis – % Providing Education

Education about...	Responses	No	Yes	Percent (yes)	95% CI (yes)
Childhood Immunizations	37	23	14	38%	21% - 54%
Hepatitis B Birth Dose	37	25	12	32%	17% - 48%
Hepatitis B Disease	36	22	14	39%	22% - 56%
VFC Program	37	28	9	24%	10% - 39%

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.



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 2: Diagnose and Investigate

Risk Factors – Association with Education

Protective Factors	Percent (yes)	Childhood immunization	Hepatitis B Birth Dose	Hepatitis B Disease	VFC Program
Knowledge of Immunization Schedule	67%	RR=6.5 P<0.01	RR=2.5 P=0.13	RR=6.5 p<0.01	RR=11.25 p=0.01
Knowledge of VFC program	51%	RR=1.1 P=0.83	RR=0.8 P=0.63	RR=1.5 p=0.36	RR=8.9 p<0.01
Perceived Barriers to Education	57%	RR=1 P=1.00	RR=1.3 P=0.54	RR=1.3 p=0.56	RR=1.7 p=0.37

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.



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

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.



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

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



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 4: Mobilize Community Partnerships

Discuss the issue with hospital labor & delivery units

Process

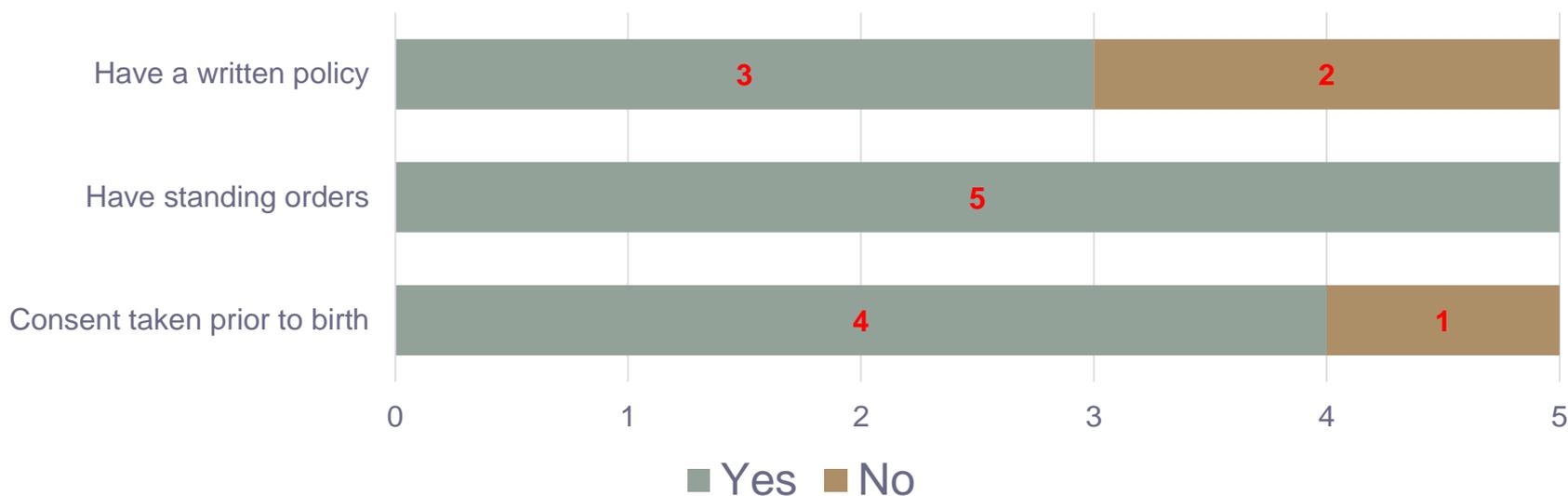
1. Short interviews were completed with 5 of the 6 hospitals serving Johnson County.
 - This included all hospitals in JOCO as well as the University of Kansas Medical Center.
2. Questions were general and open ended to allow the participants to provide information that they thought was important.
3. 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)



EPHS 4: Mobilize Community Partnerships

Findings

Findings: Policies and Practice



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

“We discuss the importance of being immunized to hesitant parents.”



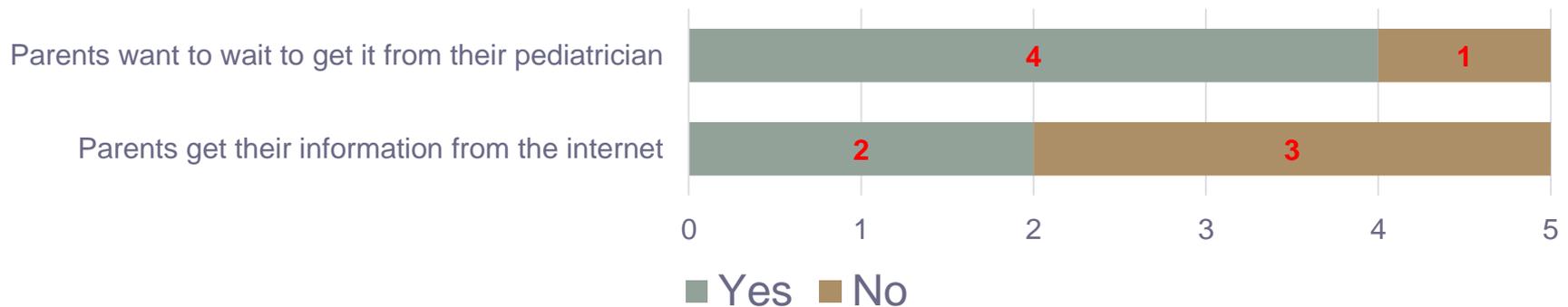
IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 4: Mobilize Community Partnerships

Findings

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



“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.”

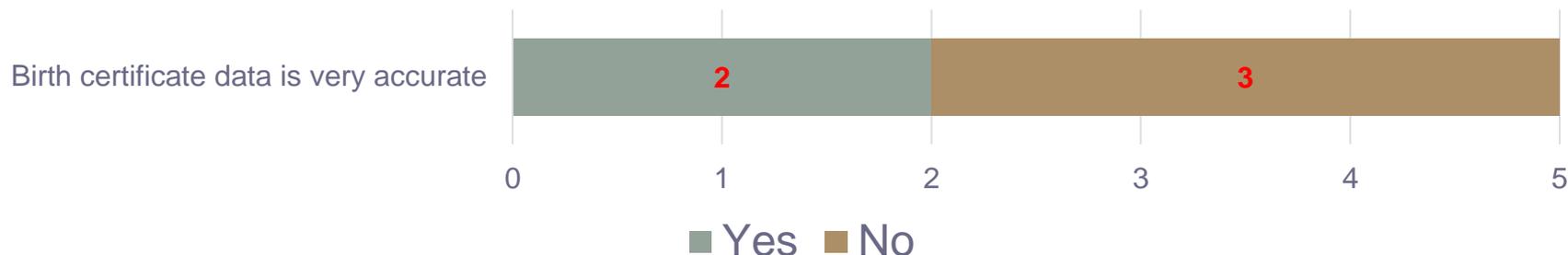
“It’s more difficult to provide the same level of care to people that don’t speak English.
We have the systems to do this, but it just isn’t the same.”



EPHS 4: Mobilize Community Partnerships

Findings

Findings: Birth Certificate Data Quality



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



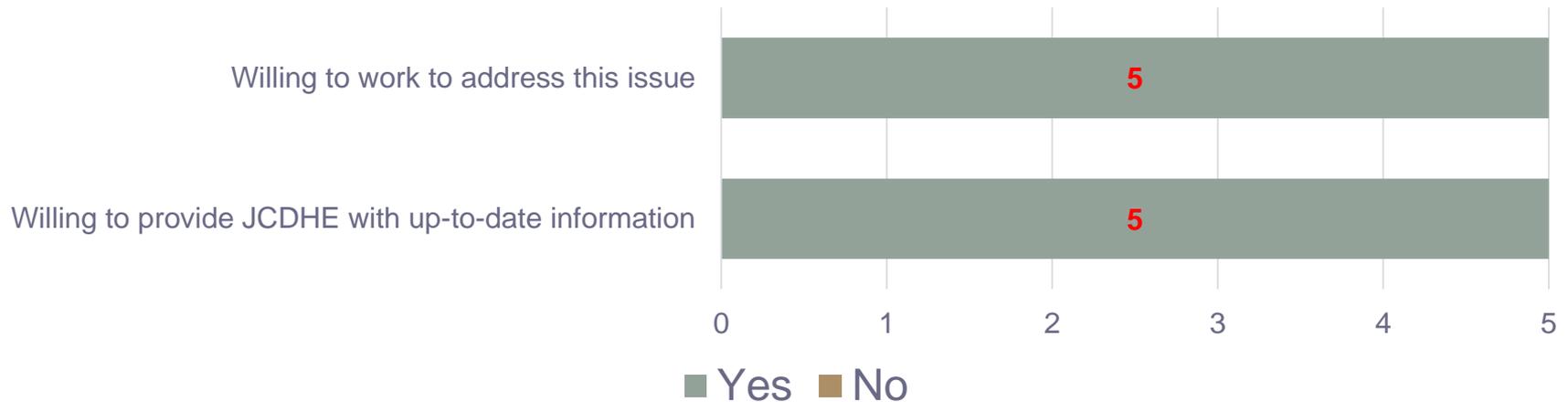
IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

EPHS 4: Mobilize Community Partnerships

Findings

Findings: Partnership Opportunities



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.



IMMUNIZE KANSAS KIDS

JOHNSON COUNTY
KANSAS
Health & Environment

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.

