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Innovative Strategy to Increase Identification of Infants Born to Chronic Hepatitis B Mothers

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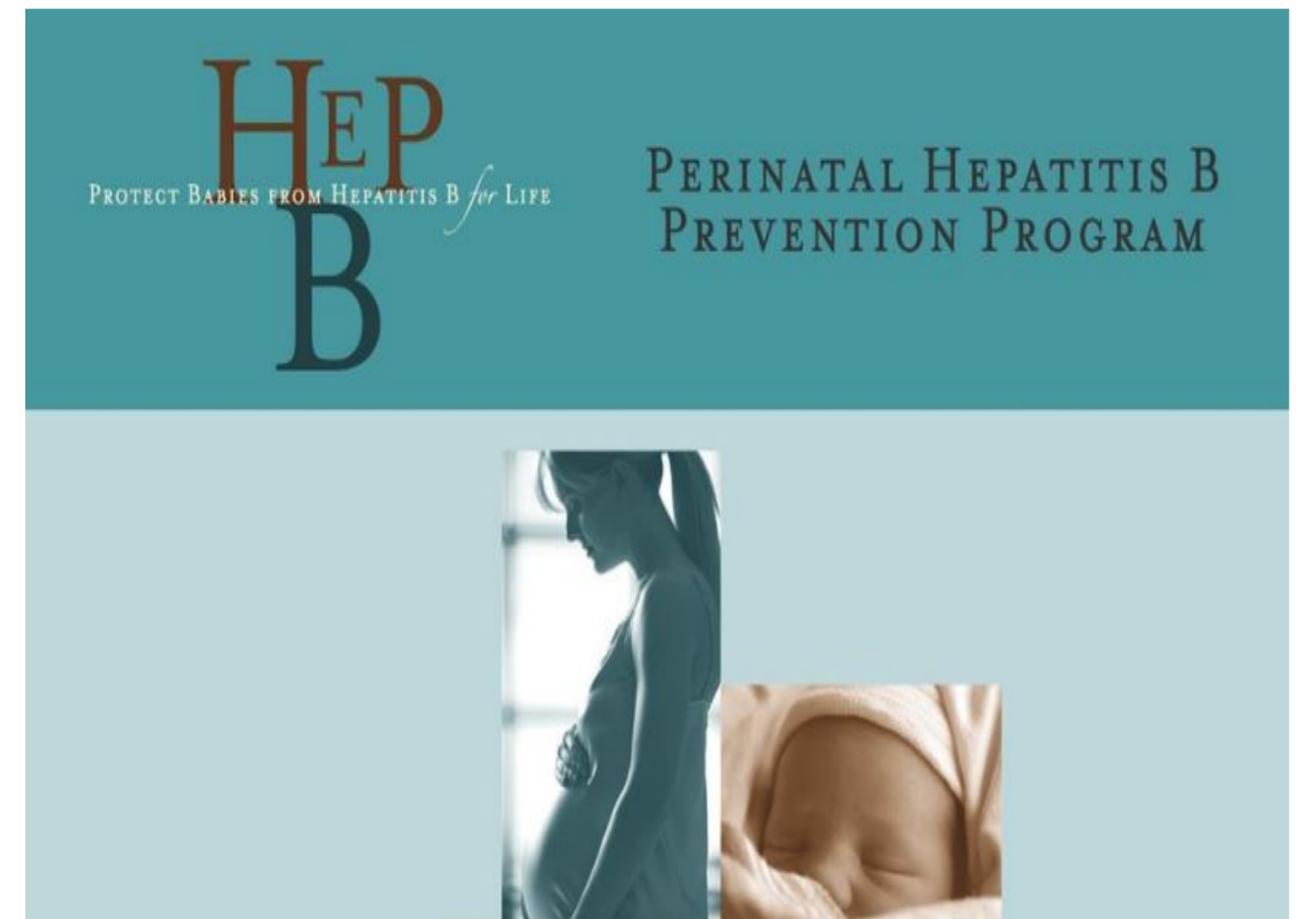
Learning Objectives



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At the end of the session, participants will learn about and have opportunity to discuss....

- challenges to the identification of HBsAg-positive women and their infants
- promising practices to increase identification of HBsAg-positive women and their infants
- lessons learned and next steps



Part 1:
**Overview of Perinatal Hepatitis B Prevention
Program**



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INTRODUCTION



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~ 25,000 infants are born to women chronically infected with hepatitis B every year

~ 10,000 of these infants would become chronically infected without timely PEP

~ 2,500 would die of liver failure or liver cancer as early as age 10

~1,000 newborns are infected annually

Healthy People 2020 target (among infants and children aged 1 to 24 months) : 400 cases

2007 baseline: 799

Source: Ko SC, Fan L, Smith EA, Fenlon N, Koneru AK, Murphy TV. Estimated Annual Perinatal Hepatitis B Virus Infections in the United States, 2000–2009. Journal of the Pediatric Infectious Diseases Society. 2014 Dec 18:pii115.

Hepatitis B Surveillance in Texas

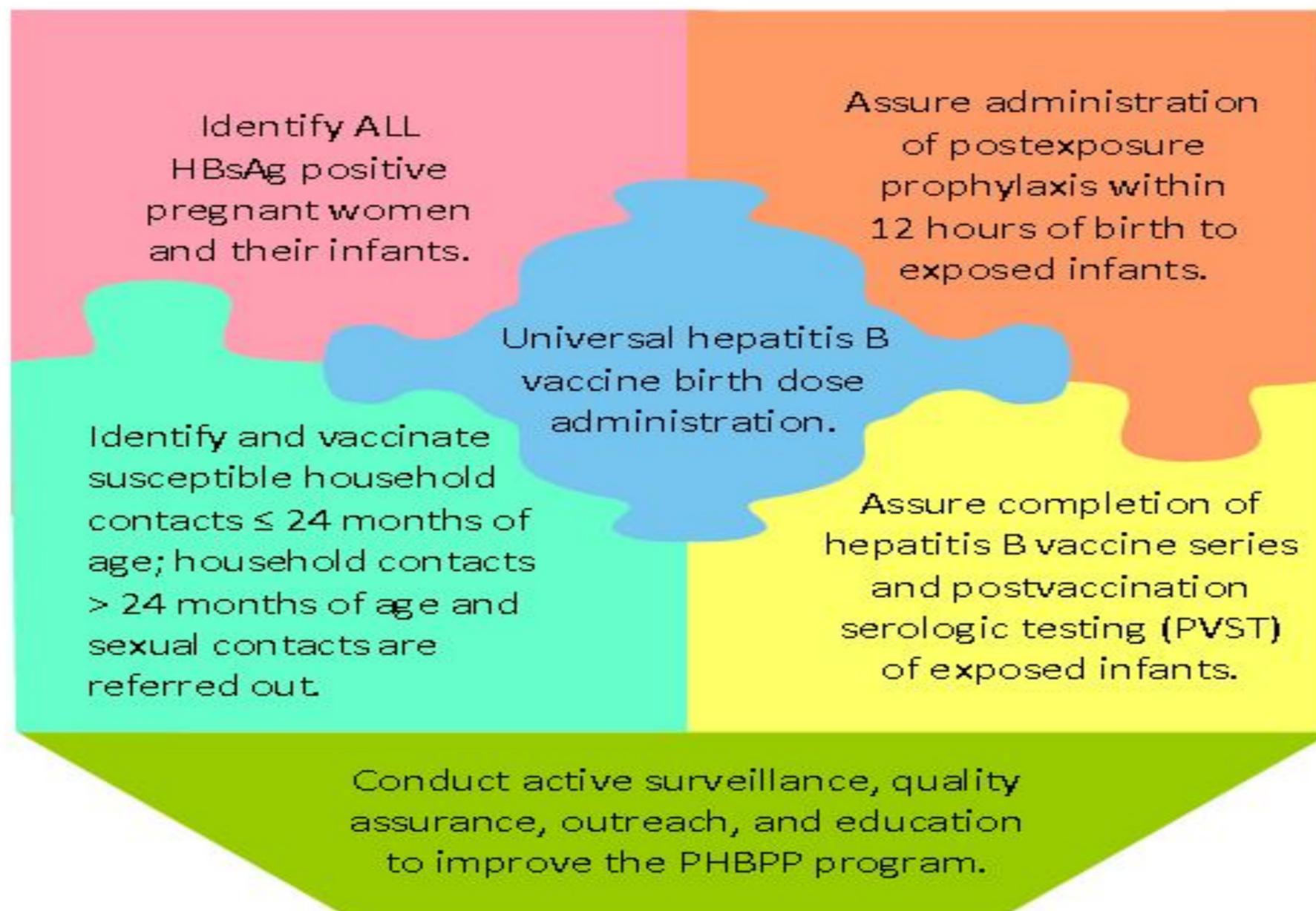


- Acute HBV must be reported within 1 week

- Chronic HBV is NOT reportable except:
 - Prenatal & Delivery, reportable within 1 week
 - Perinatal (<24 months), reportable within 1 work day

- Not all hospitals report electronically

Six Responsibilities of the Perinatal Hepatitis B Prevention Program



Part 2:
City of Houston 2016 Program Evaluation



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City of Houston (COH) Program Background



- ❑ Funded by CDC since 1991
 - ❑ City of Houston residents only
- ❑ CDC Estimates:
 - ❑ 255 - 422 infants born to HBsAg-positive mothers in 2015
- ❑ **90% of the estimated births to HBsAg-positive pregnant mothers should be identified.**
- ❑ State of COH program

Jurisdiction	2013	2014	2015
COH	37	51	76

Table 1. Number of Identified Infants Prior to 2016 Audit

2016 PROGRAM EVALUATION: RESULTS



- Under-reporting of HBsAg-positive mothers is a threat
- **4 out of 10 infants** were not reported in 2014 & 2015

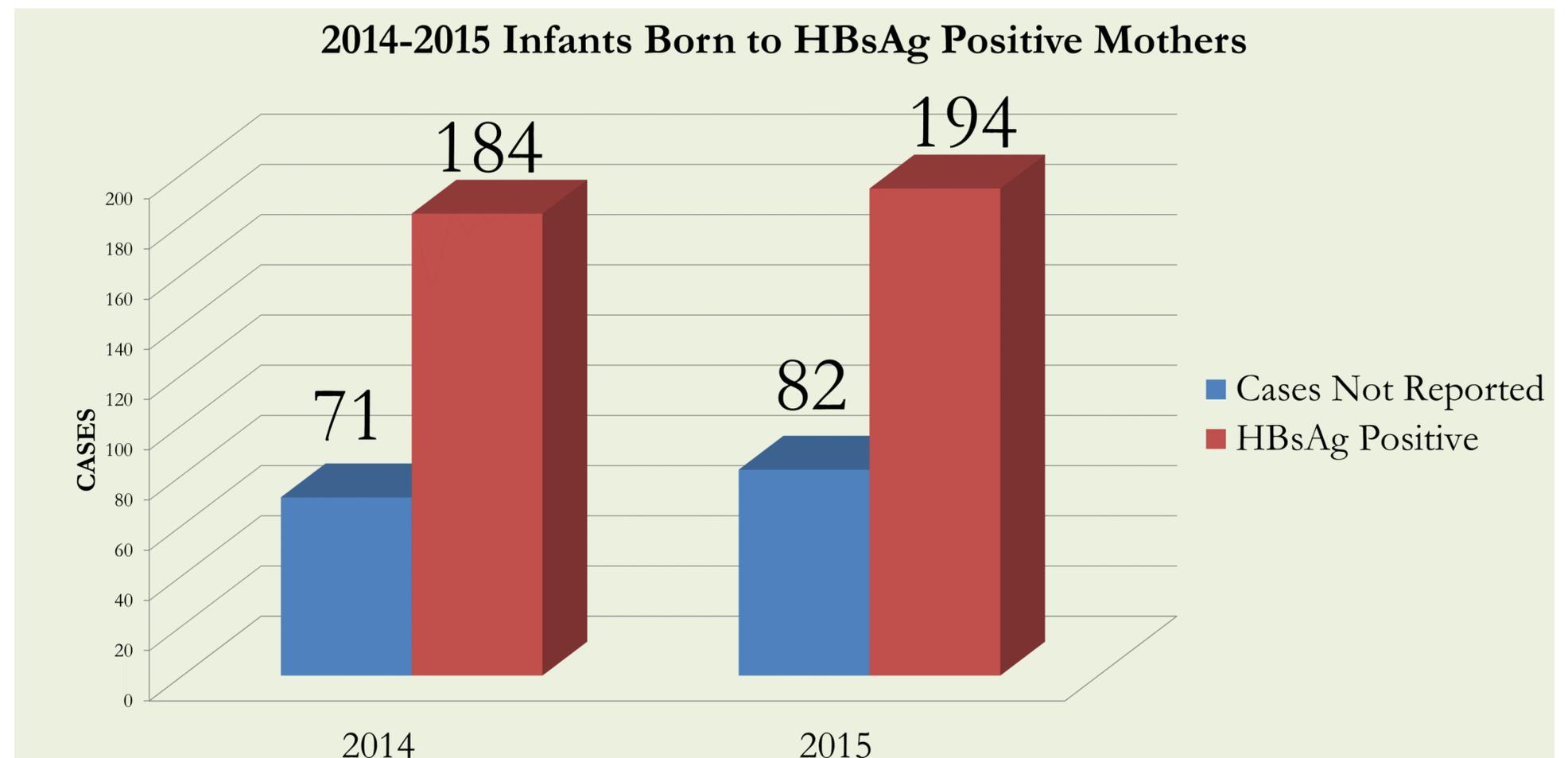


Figure 1: Observed Discrepancy Between Cases Reported and Not Reported

Part 3:
City of Houston 2018 Program Evaluation



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COH Context: 2014-2015



- Houston PHBPP has been conducting hospital audit every year
- December 31, 2015: **51 infants** born in 2014 were identified Vs. 301/412
- 2016 audit: 71 additional infants
- December 31, 2015:
76 infants born in 2015 were identified Vs. 255/422
- U.S. 11,157 infants Vs. 18,945/26,444
- **Note:** excluded out of jurisdiction cases

	2013	2014	2015
Before	37	51	76
After	----	122	158

Table 2. Number of Infants Identified Before and After 2016 Audit

PROGRAM EVALUATION: METHODS



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2016 Methodology:

- 24 Labor and Delivery hospitals in Harris County
- Evaluation period: 2014-2015
- Old Methodology
 - CDC Policy Survey
 - Record Review: Hepatitis B birth dose administration & HBsAg screening with CDC developed tool
- 2016 Methodology
 - Old methodology &
 - Review of ALL HBsAg positive mother-baby records (list provided by the hospitals)
 - Compare positive records with cases managed by the assessment date

2018 Methodology:

- 25 L & D
- Evaluation Period: 2016-2017
- Previous Method: 2016
- New Method:
 - 2016 methodology
 - Pharmacy/HBIG log

2016-2017 Record Review Results



Table 3. Positive HBsAg and Administration of HBIG

Hospital Code	Positive HBsAg Records		HBIG Given	
	2016	2017	2016	2017
19	1/56	4/57	1/1	3/3
13	15/71	15/70	20/20	19/19
10	4/57	4/53	6/6	4/4
3	9/65	10/68	9/10	10/10
9	10/68	9/58	12/13	9/9
5	1/50	4/61	1/1	4/4
6	Xxx	0/51	Xxx	
17	2/57	3/60	0/1	0/3
25	12/69	4/57	11/11	4/4
20	8/65	10/63	11/11	12/12
18	20/78	6/68	20/20	7/7
16	3/58	11/59	3/3	11/12
11	Xxx	1/54	Xxx	
15	3/61	3/56	1/3	3/3
8	10/67	7/64	10/10	7/7
2	14/85	21/81	15/15	25/25
22	3/58	1/61	3/3	1/1
7	2/60	1/55	2/2	1/1
21	26/86	20/76	26/26	20/20
14	9/66	8/65	9/9	8/8
4	14/72	13/73	13/13	16/16
24	11/62	19/57	13/13	20/21
23	40/113	28/88	49/49	39/39
12	0/57	0/57	1/1	
1	37/97	44/100	39/40	46/48
	254/1557	246/1612	275/281	269/276

60 additional infants identified from HBIG/pharmacy log :
27 (~10%) in 2016 &
33 (~12%) in 2017

Out of jurisdiction cases excluded, 2 out of 10 infants were not reported

Other Findings



- Policy issues (reporting to LHD not specified...)
- Mother's HBsAg status documentation
- Infant's records
- Vaccine & HBIG administration documentation

PROGRAM EVALUATION: LESSONS LEARNED



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Houston Program

- Policy and Procedures survey during record review
- Poor communication between program staff and hospitals
- Reporting Process is an issue
- Pregnancy status is not force field (usually not reported on the laboratory reports)
- Post audit feedback to the hospitals was very helpful to the hospitals

Hospitals

- Poor quality in data reported by hospitals
- Laboratory report Vs. L&D logs
- Pharmacy logs of HBIG administration Vs. Nursery logs Vs EMR data
- Inconsistency in reporting process
- Turn-over effect
- Shift/schedule effect
- Hospitals where delivery nurse is required to report +HBsAg mother, have low underreporting rates

PROGRAM CHALLENGES



- Low and late identification of HBsAg-positive mothers is a challenge nationwide
 - U.S. **11,157 infants** Vs. 18,945/26,444
- Pregnancy status on laboratory reports remains a big problem
- All laboratories are not reporting electronically
- Serving transient populations
- **Tourism effect** = high number of HBsAg-positive mothers move out of the country within 1-3 months after delivery (Growing problem)
- Policies focusing on Infants not mothers
- Chronic HBV surveillance
- Underfunded
- Providers' Knowledge & behaviors



- Develop Perinatal HBV toolkit for clinicians (completed)
- Implementing quarterly reporting of HBsAg-positive mothers
- Working with internal surveillance team to recruit more laboratories (in progress)
- Continue to review HBsAg-positive mothers during program evaluation:
 - Nursery log
 - Pharmacy log
 - Laboratory annual report
 - EMR data
- Plan to collaborate with surrounding counties for next audit

Recommendations



- Resource and labor intensive
- Consider partnership with colleges/universities
- Consider alternative audit schedule: one hospital every other month/ quarter
- Conduct post-audit session with the hospitals
- Provide incentives: certificates



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Thank You!



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