Implementing an electronic birth notification system
(In select Indiana Hospitals)

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Indiana State
Department of Health

Overview

- Background info on NBS in IN
- Background info on INSTEP/MSRs
- Background info on electronic birth notification
- Data
- Barriers/Challenges
- Lessons learned
- Future goals

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Background: NBS in IN

- 3 mandatory newborn screens in IN:
  - Heelstick (45 conditions included on panel)
  - Universal Newborn Hearing Screen (UNHS)
  - Pulse oximetry screening for critical congenital heart disease (CCHD)

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Background: INSTEP

- Indiana Newborn Screening Tracking and Education Program
- Web-based application:
  - Built in-house
  - View NBS results
  - Report exceptions and monthly summary of births and screens
  - Edit child information
  - Other uses

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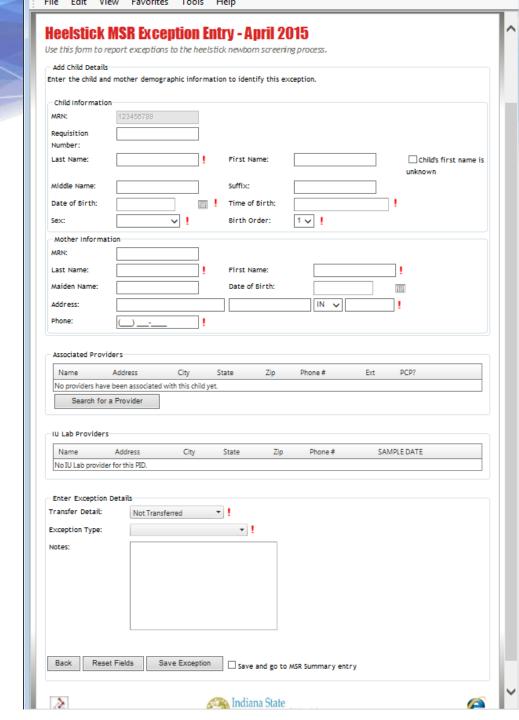Department of Health

Background: MSR Reporting

- Exception reporting by MSR users at hospitals/birthing centers
  - Transferred in/out
  - NICU
  - Initial screen next month
  - Deceased
  - Religious refusal (requires a signed waiver)
  - Discharged home without a screen
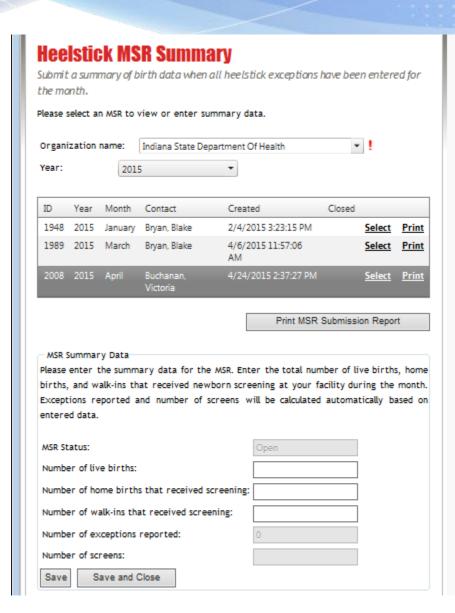- Currently have to enter demographic info

MSR Reporting

- Name
- DOB
- TOB
- Birth order
- Sex
- Mother's info
- Exception type

MSR Reporting

- Monthly summary including # of:
  - Live births
  - Home births that received screens
  - Walk-ins that received screens
  - Exceptions
  - Total screens

Background: MSR Reporting

- Dashboard allows ISDH NBS Follow-Up Coordinator to follow up with open cases (exceptions) to ensure babies are screened

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Background: Electronic Birth Notification

- ISDH contracts with OZ Systems
- When a baby is born, hospital creates an EMR
- Creation of an EMR sends notification to OZ through NANI (Newborn Admission Notification Information); OZ pulls demographic info from the EMR into a database
- ISDH pulls data from OZ database as needed (ie, daily)

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Electronic Birth Notification

- Gives a more accurate denominator (# of births at the hospital)

- Received daily rather than monthly (more timely)

- Demographic info rather than just a #. If a screen is missed without entering an exception, it's possible to see *who* is missed. (Safeguard to help ensure newborns are screened)

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Recruiting Hospitals

- Significant start-up costs for hospital
- Incentives (APHL funds) to help offset costs
  - $2500 per hospital
  - Additional $1000 for hospital system adding additional hospitals (ie, up to $3500 for a hospital system)
- (OZ) and special projects director at ISDH contacted each hospital through multiple emails/calls to assess eligibility and interest; notified of grant opportunity and encouraged to apply
- Implementation w/in 6 week timeframe
- Calls between hospital IT staff and OZ to discuss technical requirements
- When work completed (ie set-up complete and OZ receives the messages created by EMR), hospital is awarded the incentive

Data: Milestones

- ISDH contacted all birthing facilities in the state and sent a short, 1 page grant application (11/10/14)

- Agreement to participate signed by 3 hospital systems and 4 hospitals (2/28/15)

- NANI implemented at 2 recruited hospitals (4/22/15)

- Total of 10 hospitals submitting NANI data (4/22/15)

Data: Quality (11/30 milestone)

- Comparing NANI to filter paper card data fields:
  - Last name: 71%
  - First name: 40%
  - MRN: 97%
  - DOB: 100%
  - TOB: 81%
  - Mother last name: 97%
  - Address: 57%
  - City: 64%
- Match rate (successful linkage of NANI to INSTEP):
  - 98% for 6 of the 7 facilities
  - 43% for remaining facility

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Barriers/Challenges for Hospitals

- Significant costs to hospital to build interface
  - Lack staff time
  - Lack resources
  - Incentives do not completely offset costs (can cost ~$10,000 worth of staff time to set up)
- Competing priorities for hospital IT staff
- Hospitals do not see immediate benefit (long-term benefits vs short term costs)

Other Barriers

- Eligibility: must have EMR

  – Would not work for homebirths/ births where EMR not created

- Can't be completely automatic for exception reporting; will still require some hospital staff time (although this will be reduced)

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Lessons Learned

- It takes time, persuasion, and multiple attempts to 1) get in touch with hospital IT staff, and 2) convince hospitals to agree and build the interface. Plan accordingly!

- Once it is up and running, not a lot of problems.

- Probably worth it; still need to get additional hospitals on board

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Future Goals

- Increase number of hospitals using NANI
- Have all hospitals using NANI (if possible)
- Streamline MSR/exception reporting: Reduce burden on MSR users submitting data to us
- Improve data quality
- Improve timeliness of NBS
- Help ensure all newborns are screened
- Have NBS lab receive notifications too so they can be prepared if unusually high number of babies are born on a particular day

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