Interoperability– are we speaking the same language?

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STATE of ALASKA
Department of Health and Social Services

ALASKA DIVISION OF
Public Health

Disclosure

- Lura Daussat is an employee of OZ Systems, which contracts with the State of Alaska to provide their EHDI/NBMS database.

- Beth Kaplan, EHDI Program Manager, is an employee of the State of Alaska.

Alaska

Background and History

- SOA, Division of Public Health

- Section of Women's Children's & Family Health

- 2000 – Voluntary program – paper reporting

- 2005 – Database goes "live"

- 2006 – State law is passed mandating Newborn Hearing Screening, Tracking and Intervention

- January 2008 – law and regulations take effect

- 2008 – began importing NBMS results from the lab

Results

- Integrated child health record

- Submitter, obtained from NBMS specimens, assisted EHDI program in follow-up
  - Identified the Medical Home provider

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Results

- Decreased Lost to Follow-up!

- Provided data and eased data entry of Out of Hospital Births (6% of annual births)

  – Quarterly Reports

Integrated Record

- Both Outcomes
- Submitter information

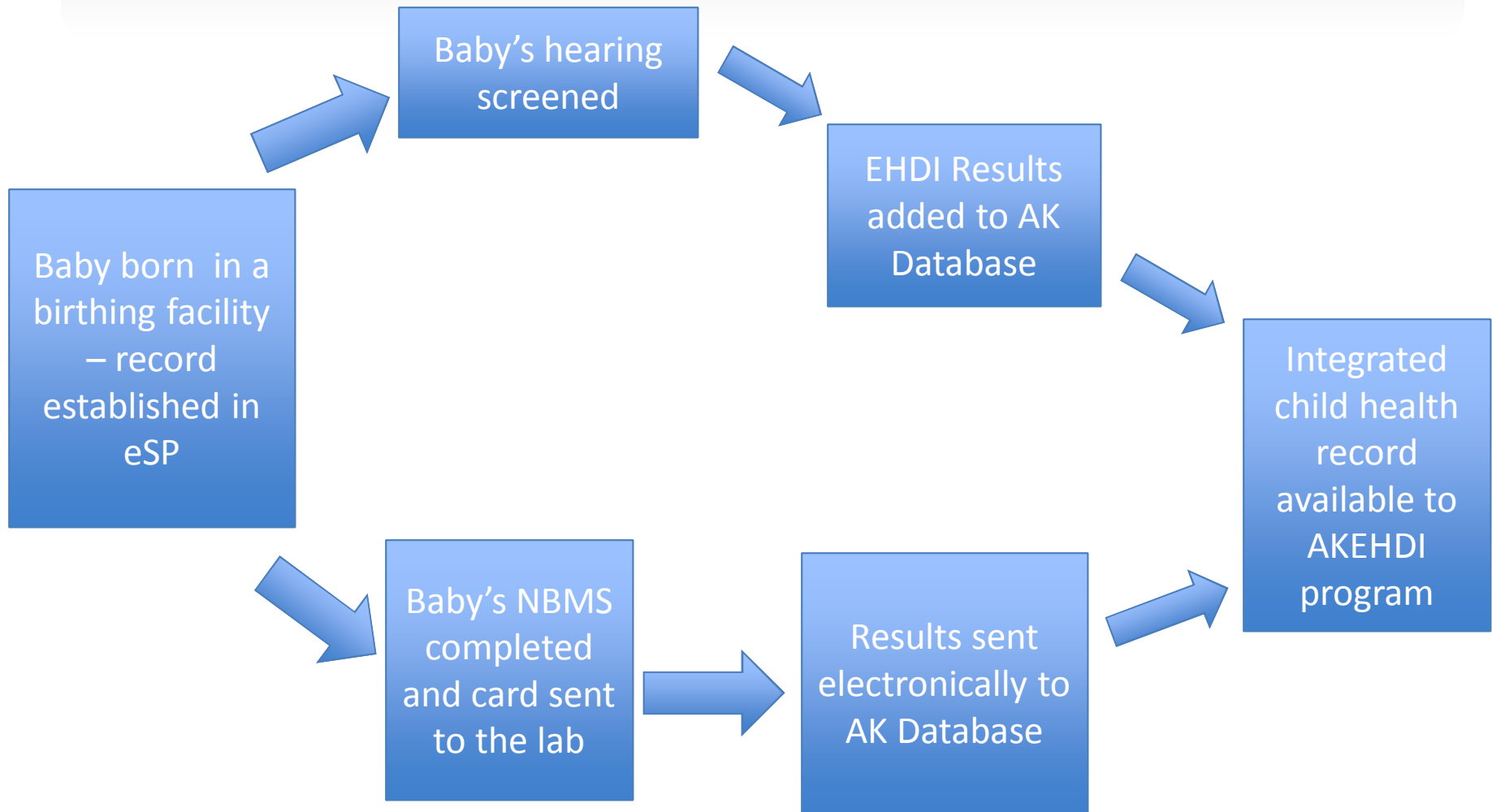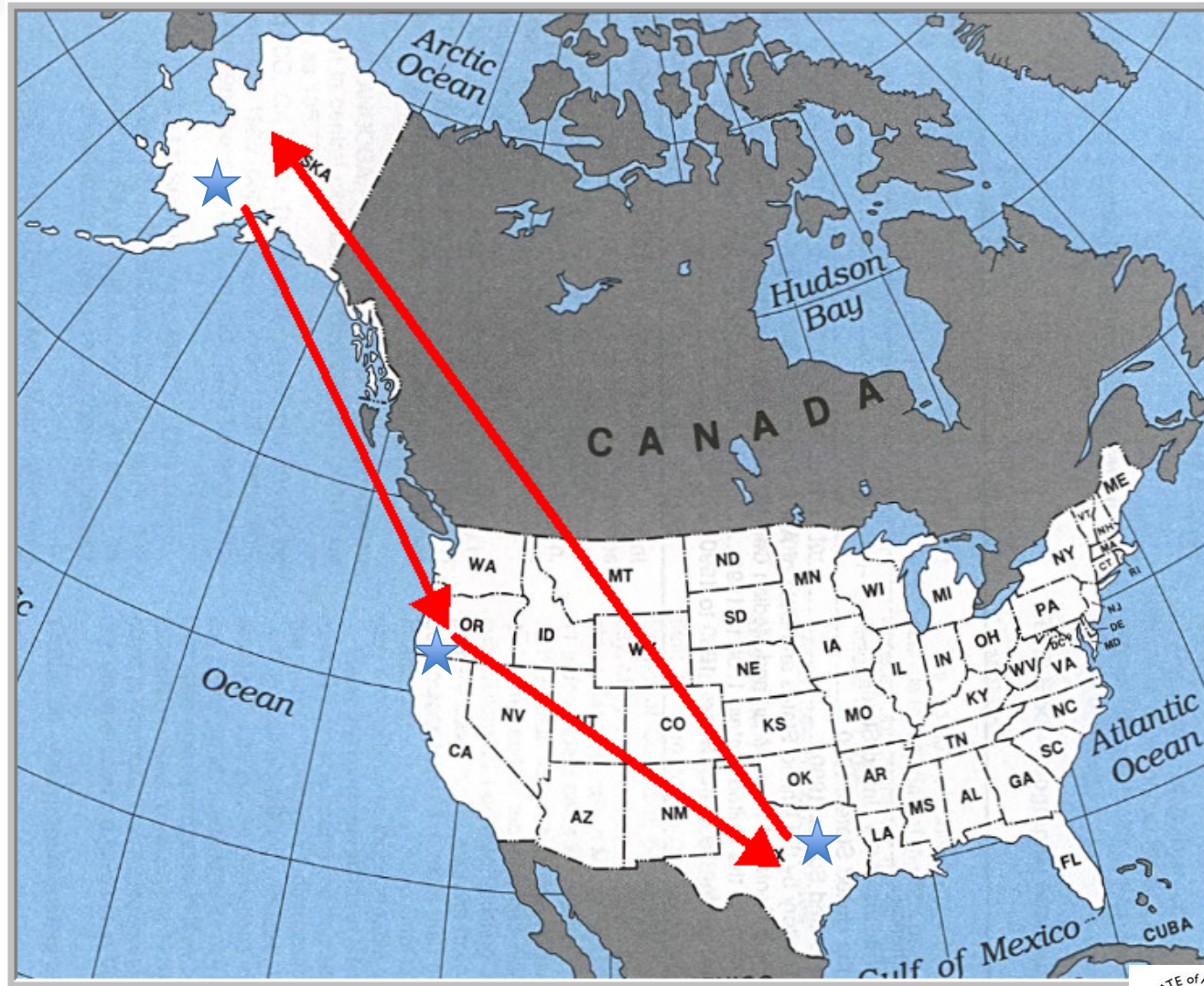|		Name	Service Type	Phone
		Professional Contacts:		
View	Remove	Samuel Simmonds Memorial Hospital	Birth Screen Provider	907-852-9111
View	Remove	KIM, DANIEL (Dr.)	Submitter	907-586-2434

Add Professional Contact

+ Hearing — Outcome: Normal Hearing

+ Metabolic — Outcome: Presumptive Positive

EHDI and NBMS

Baby born in a birthing facility – record established in eSP

Baby's hearing screened

EHDI Results added to AK Database

Integrated child health record available to AKEHDI program

Baby's NBMS completed and card sent to the lab

Results sent electronically to AK Database

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Data travels long distances!

April 2012

- Lab updates to HL7 messaging from XML

- Turns off XML feed

- No NBMS data available to Alaska in the Alaska integrated database

From This (XML)

```xml
<childRecord>
    <LNAME>SAMPLE</LNAME>
    <FNAME>BABY</FNAME>
    <BIRTHDT>2008-04-14</BIRTHDT>
    <BIRTHTM>1000</BIRTHTM>
    <BIRTHWT>3444</BIRTHWT>
    <TWIN />
    <MEDRECNO>T4-000001</MEDRECNO>
    <SEX>4</SEX>
    <RACE>1</RACE>
    <ANTIBIOT />
    <HISPANIC>6</HISPANIC>
    <hospital HOSPID="AK1115">
<NAME2>ATTN: LAB</NAME2>
        <ADDRESS1>2112 DON
```

To this (HL7 V2)

MSH|^~\&|ORDOH|ORDOH|OZ|AK|2014012
22213||ORU^R01^ORU_R01|2014012200
096|P|2.5.1|

PID|1||1117895^^^^MR||||201401131348
|M||1002-5^American Indian or Alaska
Native^HL70005|^^^^^AK020|||||||||||
U^Unknown^HL70189|

NK1|1|SAMPLE^SUGAR|MTH^Mother^HL700
63|^^ANCHORAGE^AK^99504|

Why the change?

- Standardized transmission of data, interoperability

- Accounted for the addition of analytes as a result of MS/MS testing

What did this mean?

- Alaska database had to wait for the NBMS results to be ready
  - Ready from the lab
  - Ready to be accepted by the database
  - AK Screening program was stuck in the middle

Implications for the EHDI Program

- Loss of additional contact of submitter
  - Increased the difficulty of finding babies for follow-up
  - Increased the length of time

- Increased work with the out of hospital births population

Implementation of HL7 Messages

- Implementation Guide
  - Newborn Dried Bloodspot Screening Implementation Guide for Laboratory Results by Public Health Informatics was implemented using HL7 V2.5.1 message
  - Working out specifics of details for HL7 message
    - Mapping of data elements
      - Sending system
      - Receiving system

Implementation of HL7 Messages

- 1st Phase - Demographic information
  - Patient Name
  - Date and Time of Birth
  - Submitter information
  - Birth Facility

Transmission of Tests

- 2nd Phase - Agreement on the language used to transmit test results
    - LOINC Codes
    - LOINC Value Sets
    - Multiple Resources

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Transpation of Tests

Transmission of Tests

- Currently no SDO approved Implementation Guide for NBMS
  - 7 IGs and Look-up tools that can be resources for NBMS messages
    - HRSA/NLM Guidance for Sending Electronic Newborn Screening Results with HL7 Messaging, version 5.2
    - 54089-8 Newborn Screening Panel American Health Information Community (AHIC)
    - Newborn Dried Blood Spot (NDBS) Screening HL7 Implementation Guides for Laboratory Orders and Results
      - » OMU^O21
      - » ORU^R01

Lessons Learned

- Agreed Implementation Guide
- Clear Communication
  - Expectations of each participant
  - Timelines
  - Changes
- Check your contract(s) -make sure to cover new work
- Testing Processes
- Everyone comes to the table – from the beginning

Lessons Learned

- Sharing data among programs, means any changes should be shared with all

- "Every action creates an equal and unequal opposite reaction" Einstein

- Silos reduced, but not eliminated

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Lessons Learned

- Expectation that there is an understanding of the same language

- Skill set of EHDI program managers

- Subject Matter Experts on newborn screening are being asked to work outside their area of expertise, on HIT

Challenges

- Interoperability is new and uncharted Territory
- You need more than an agreed upon language, you need a good map

Suggestions for Improvement

- Map out everyone who is involved in this change and MAKE SURE They come to the table early on

- Clarify expectations of public health and interoperability

- Provide tangible and real life guidance to EHDI coordinators and other stakeholders on the implementation of HIT.

Suggestions for Improvement

- Thorough Testing Strategy
  – Testing of messages from beginning to end before they are pushed to production

- Regular calls with the appropriate stakeholders and team leaders

- Fact check your assumptions

Questions?

Thank you!

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