Challenges and Benefits of Implementing Electronic Messaging in Newborn Screening Laboratories

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MSH|^~\&|Neometrics.WA.Prod^2.16.840.1.113883.3.237.4.9^ISO|WADOHPHL^50D0661453^CLIA||WASHINGTON STATE HOSPITAL ^H0999&L |20140502103308344||ORU^R01^ORU_R01| 2014050200003|P|2.5.1|

PID|1||10056832^^^WASHINGTON STATE HOSPITAL &H0999&L^NR||BART SIMPSON||201401211614|M||2106-3^White^HL70005||||||||||||U^Unknown^HL70189||N|0|

NK1|1|SIMPSON^MARGE|MTH^Mother^HL70063|

ORC|RE|30432902^WASHINGTON STATE HOSPITAL^H0999&L|20140240127^WADOHPHL^50D0661453^CLIA ||||||||||WASHINGTON STATE HOSPITAL ^H0999&L |20140240127^WADOHPHL^50D0661453^CLIA ||]|123 SPRINGFIELD DR ^SPRINGFIELD^WA^98902|206^5758000|

OBR|1|30432902^WASHINGTON STATE HOSPITAL^H0999&L| 20140240127^WADOHPHL^50D0661453^CLIA|54089-8^Newborn screening panel American Health Information Community (AHIC)^LN|||201401220600|||| |||201401240800|||20140128|||F|

OBR|2|30432902^WASHINGTON STATE HOSPITAL^H0999&L| 20140240127^WADOHPHL^50D0661453^CLIA|57128-1^Newborn Screening Report summary panel^LN|||201401220600|||201401240800|||20140128|||F|

OBX|1|CE|57721-3^Reason for lab test in Dried blood spot^LN||LA12421-6^Initial screen^LN||||||F|||201401220600|

OBX|2|CE|57718-9^Sample quality of Dried blood spot^LN||LA12432-3^Acceptable^LN|||N|||F|||201401220600|

OBX|3|CE|57130-7^Newborn screening report - overall interpretation^LN||LA12428-1^All screening is in range for the conditions tested^LN|||F|||201401220600|

OBX|4|CE|57131-5^Newborn conditions with positive markers [Identifier] in Dried blood spot^LN||LA137-2^None^LN|||N|||F|||201401220600|

OBX|5|CE|57720-5^Newborn conditions with equivocal markers [Identifier] in Dried blood spot^LN||LA137-2^None^LN|||N|||F|||201401220600|

Getting Started

Washington State Department of Health
Challenge: Assemble the Team

- NBS SME
- Leadership
- LIMS Vendor
- Business Analyst
- HL7 Expert
- Informatics
- Network Architect
Challenge: Adapting the Implementation Guide
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- Use the IG to mimic paper results & orders
- Review current forms and reports
- One standard message?
- LIMS Changes
- Middleware?
- LOINC Mapping
- Create a program specific Implementation Guide
Challenge: Changing Laboratory Workflows

**Current Work Flow**

**Identify areas of change**

**New workflow**

- How will we review results?
- Will responsibilities shift?
- What do we do if the data doesn’t match?
- What happens when we make a correction?
- Will specimens be accessioned differently?
- Staff buy-in
Example: Result Reporting Workflow
Challenge: The Data Exchange Pathway
Example:
Direct Data Exchange
What is an HIE?

Pass through

Facilitator

Hub

Data warehouse
Example:
Statewide HIE
Example: Integration Engine
What is an Integration Engine?

- Automate Message workflow
- Translate Messages
- Filter Messages
- Pathway between LIMS and HIE
- Transform Messages
Example: Integration Engine
Challenge: Resource Intensive
Challenge: Resource Intensive

- Estimating Costs
  - Development
  - Implementation
  - Onboarding
  - Maintenance

Plan for the long-term

Agency Resources already in place

Creative Funding
  - Meaningful Use
  - Grants
  - CMS

Potential for cost savings?
Additional Challenges – The Unknown
Benefits

- Improved TAT
- Expedited Access
- Reduce Carbon Footprint
- Build Relationships
- Reduce Transcription
- Improved Accuracy
- Reduce Data Entry
- Saving Babies

Washington State Department of Health
Thank You!!

Washington State Newborn Screening

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