

# Implementing Real Time Bi-directional Data Exchange via Web-Services: Lessons Learned

Michelle Barber, Interoperability Director

Tracy Little, Data Exchange Analyst



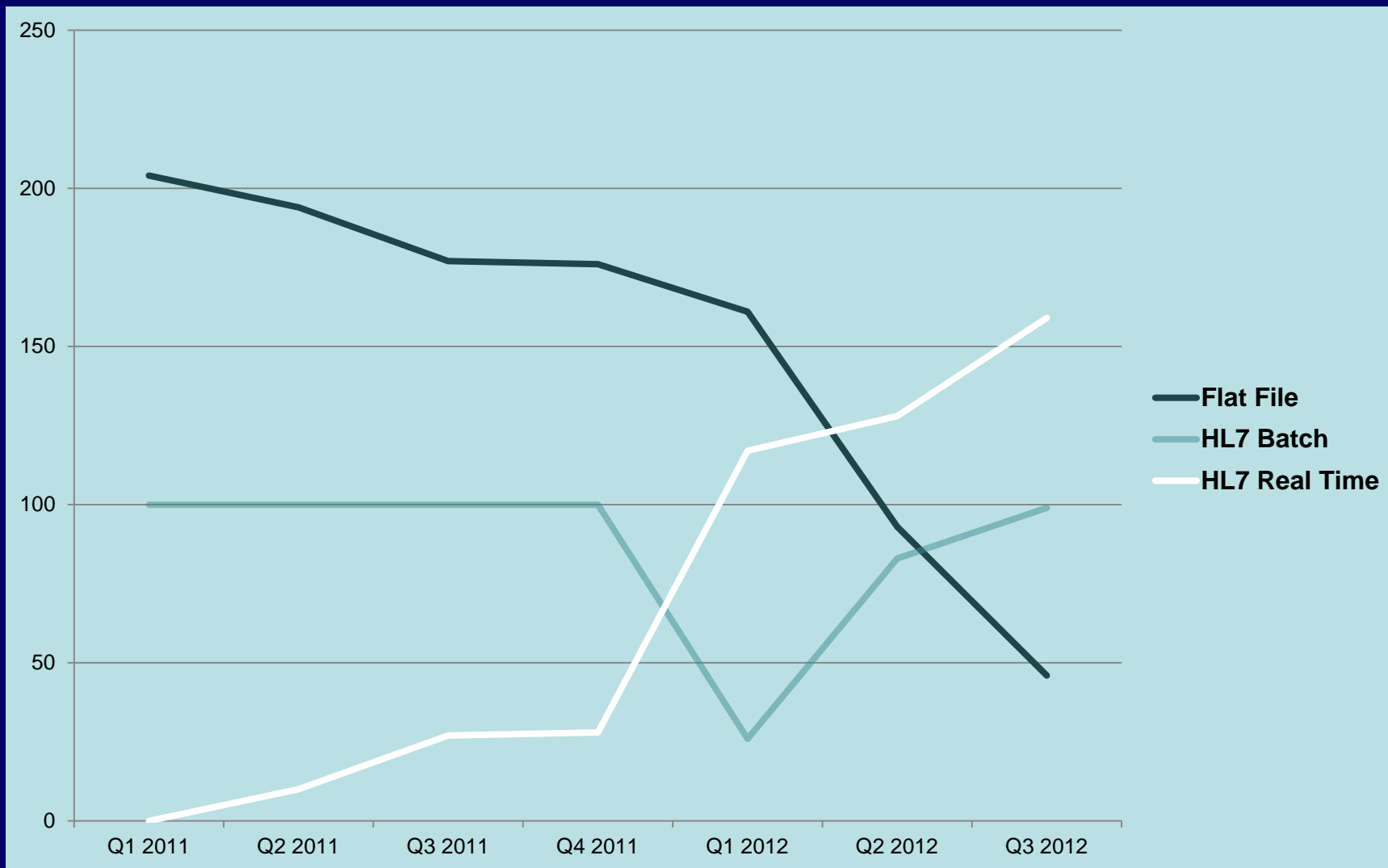
Oregon  
Health  
Authority

(Enter) DEPARTMENT (ALL CAPS)

(Enter) Division or Office (Mixed Case)

# Background - Implementation

- Launched SOAP web service in Spring 2011
  - Built, rolled-out, tested and enhanced at same time
  - Uni- and bi-directional functionality
  - HL7 2.4 (update and query messages)
- Started with 9 pilot sites, only 1 started with bi-directional exchange
  - 1 bi-directional
  - 7 uni-directional
  - 1 still testing
- Today 153 web service sites; 38 bi-directional
- October 2012 HL7 2.5.1



# Background – Staffing

- 1 FTE dedicated to on-boarding providers for real-time bi-directional data exchange
- 1.5 FTE focused on switching from flat file submission to HL7
- Working to get all IIS staff more comfortable with web services, HL7, and bi-directional data exchange
  - Drafted an SOP in Jun 2012 to standardize the on-boarding process
  - Attended Public Health Informatics Institute's On-boarding Process meeting in Aug 2012

# Implementation/Upgrades

- Context
  - Driving the car while building it
- Challenges
  - Testing inertia
  - Instability of web service
  - Inconsistency between data exchange business rules
  - Differences between test and production environments
- Lessons Learned
  - Set realistic timelines to on-board provider (on both sides)
  - Develop and implement standard testing protocols
  - Need to be transparent with providers

# On-boarding

- Issue
  - Providers' goals for submitting differ, technologies differ, vendor motivations, upgrades, third-party interfaces
- Challenges
  - No standard operating procedure (SOP) for on-boarding providers for HL7 data exchange
  - No in-house technical support for web services and certificate management
  - No SOP for response file or error handling
- Lessons Learned
  - Ensure that IIS staff are on the same page to meet IIS goals for on-boarding sites
  - Provide comprehensive documentation to providers and IIS staff
  - Consider on-boarding providers to HL7 batch as a first step towards HL7 real-time data exchange

# Identity Management

- Context
  - Mutually signed digital certificates required from provider for each environment to each ALERT IIS environment (i.e. production and test)
- Challenges
  - Off industry standard; providers (or EHRs) want to use existing credentials or one provided by vendor like Symantec (VeriSign)
  - Network expertise on provider side to create and install certificates
  - Changes in IIS server IP address means re-issuing certificates
  - Credentials, expiration dates, not stored in IIS, maintained on spreadsheet
- Lessons Learned
  - Identify and implement best practices to reduce burden of maintenance
  - Shared management of credential list

# Downtime

- Context
  - 24/7 system with a M-F, 8-5 support; limited access to web service application; limited in-house technical expertise
- Challenges
  - Unexpected downtime/system instability during off-business hours
  - Limited in-house technical expertise
  - Inadequate documentation on expected/unexpected errors (HL7 and SOAP faults)
  - Inconsistent recommendations on queuing and resending vs batching
- Lessons Learned
  - Coordinate with vendor for better up front communication about known outages
  - Over-estimate down-time
  - Increase IIS vendor support
  - Increase in-house technical support



# Data Quality

- Context
  - Expectation by providers that “go-live” means “all-good”
- Challenges
  - Testing may not be enough to find data quality issues
  - Changes in EHR or IIS impact data quality
  - Other Program functions have needs not adequately addressed in on-boarding (e.g., vaccine eligibility, billables)
- Lessons Learned
  - Clarify ongoing data quality processes
  - Partner with other Program staff (Provider Services Team) to aid in data review to work with operations analysts re: content
  - Set appropriate expectations on the provider side

# Summary – The Take Home

- Standardization in our practices is key
  - Fully implement an On-Boarding SOP
- Depth in staffing and technical expertise
  - All on-boarders need similar level of expertise
- Consider common WSDL
  - Additional methods make connectivity testing easier
- Simplify certificate management
- Documentation is key
  - Need to know what is expected

# Questions?

Tracy Little

Data Exchange Analyst

[Tracy.C.Little@state.or.us](mailto:Tracy.C.Little@state.or.us)

971-673-0304

Michelle Barber

Interoperability Director

[Michelle.Barber@state.or.us](mailto:Michelle.Barber@state.or.us)

971-673-1030