Commonwealth of Massachusetts
Executive Office of Health and Human Services

THE **HI** WAY
MASSACHUSETTS HEALTH INFORMATION HIGHWAY

Health Information Technology Council
April Update

April 6, 2015

Agenda

Today's Agenda:

1. **Welcome**
   - March meeting minutes approval

2. **Participant Update : Partners HealthCare** [30 min] – Pam May

3. **Future Policy Discussion Topics** [30 min] – Micky Tripathi

4. **Operations Update** [30 min] – Darrel Harmer
   - Uptime/Downtime Update
   - Mass HIway Stabilization Sprint
   - HIway Participation and Use Update
   - New Participation and Use Goals
   - Transaction Analysis
   - DPH Registry Update
   - HISP-HISP Update
   - Query & Retrieve Update
   - Communications and Outreach Update

5. **Wrap up**
   - 2015 Meeting Schedule

Discussion Item 2: Partners HealthCare

Partners HIway Implementation

Presentation to the MA HIT Council
April 6, 2015

Partners Approach to MA HIway Implementation

- Focus on Direct implementation and meeting MU Stage 2 requirements
  - Implement and scale the ability to transmit and receive external documents
- Provider Directory
  - Publish individual providers in HIway Provider Directory
  - Import HIway Provider Directory, maintain in local repositories
  - Develop enhanced search capabilities
- Patient Consent Process
  - Implement operational processes to obtain and document patient consent
  - Capture/maintain consent data in Epic (NWH, MGH) and PHS EMPI
  - Two systems synchronized; consent information available for query

Technology Progress

- Current State
  - Ability to receive a CCDA, incorporate into the EHR and notify the provider
  - Ability to send a transition of care documents (TOC)
  - Ability for a patient to retrieve a clinical summary in Patient Gateway, and view, download, transmit
  - Public Health submissions
    - Immunizations
    - Syndromic Surveillance submissions
    - Reportable Laboratory Results (future)
  - Incorporation of MA HIway providers into local stores
  - Sensitive data management

Communication with hospitals & physician organization

- **PHS HIE Operating Committee**
  - Membership
    - Health Information Services, IS, Chief Medical Information Officers, physician champions, MU managers, legal, compliance, EHR and EMPI team from
    - 5 hospitals and physicians organizations represented
  - Develop standard forms, policies, procedures, communication and educational materials for all sites to use
- **Outreach to other hospitals through PHS Health Information Services Operating Committee**
- **Hospital Meaningful Use Committees**

PARTNERS HEALTHCARE | FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL AND MASSACHUSETTS GENERAL HOSPITAL

Enrollment

- Approved by CMO of Hospital and Physicians Organization
- Physicians notified
  - Closing the Loop on Outside Referrals with the Mass HIway
    - Registering with direct addresses
    - Receiving incoming CCDAs
      - Clinical Message
    - Sending CCDAs for transitions and referrals
      - Workflows developed and implemented
- Physician lists generated and verified
- Information provided to PHS access administrator

PARTNERS
HEALTHCARE
FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL
AND MASSACHUSETTS GENERAL HOSPITAL

Outreach to Practices

- Partners Community HealthCare (PCHI)
  - Management services organization for the Partners network of physician and hospitals.
  - Ambulatory Clinical Systems & Development Support Team
    - PCHI arm that supports the relationship with the practices using Partners Ambulatory EHR (LMR)

- Support Team Efforts
  - Divided Practices into tiers
    - Letters sent to practices
    - Provided information and materials for enrollment
  - Information about HIway shared at Community Physician Organization meetings and MU meetings
  - Assist practices with process
  - Deliver provider information to PHS Access Administrator for enrollment in state directory.

PARTNERS HEALTHCARE | FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL AND MASSACHUSETTS GENERAL HOSPITAL

Communication between Partners and MA HIway

- 'Team'
  - Project Manager for Partners HIE (HIway Access Administrator)
  - Project Manager from Health Information Services
  - HIway Account Manager – Len Levine
  - MAEHC Consultant – Murali Athuluri
- Weekly Meetings
  - Opportunities
  - Clarification on Partners practices
  - Assistance with communication with other participants
  - Provider Directory Guidance
- Weekly PCHI Meeting
  - Review practices that are on boarding
  - HIway Account Manager attends

PARTNERS HEALTHCARE | FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL AND MASSACHUSETTS GENERAL HOSPITAL

Partners Enrollment Numbers to Date

- Total Providers Enrolled 3155
  - Physicians 3052
  - Non – Physicians 103

- Breakdown Across Partners
  - MGPO   1651
  - BWPO   820
  - DFCI   145
  - NSPG   140
  - NWAS   69
  - Partners Community Physicians 330
    - 89 practices

PARTNERS HEALTHCARE
FOUNDED BY BRIGHAM AND WOMEN'S HOSPITAL
AND MASSACHUSETTS GENERAL HOSPITAL

Identifying Trading Partners

- Run report to see which PCPs and Referring Physicians receive highest volume of discharge summaries

- Analyze one year of discharge data

- Sort by physicians with highest volume

- Identify institution or affiliation

- Aggregate by institution/organization

- Identify top 10 organizations

- Cross reference with HIway membership

Partners HealthCare HIE Hub

Discussion Item 3: Future Policy Topics for Discussion

Future Policy Discussion Topics

We would like to have the HIT Council comment on key policy issues related to the HIway

Consent – there are many dimensions to this question.

- HIway consent
    – Direct Messaging
    – Relationship Listing Service
    – Query for record
    – Event notification (future service)
- HIV and Genetic Testing (State)
- Mass Chapter 111 70F HIV Privacy Protections (State)
- Substance Abuse CFR 42 Part 2 (Federal)
- Other?

Aside from Consent, are there other key policy areas that merit HIT Council consideration?
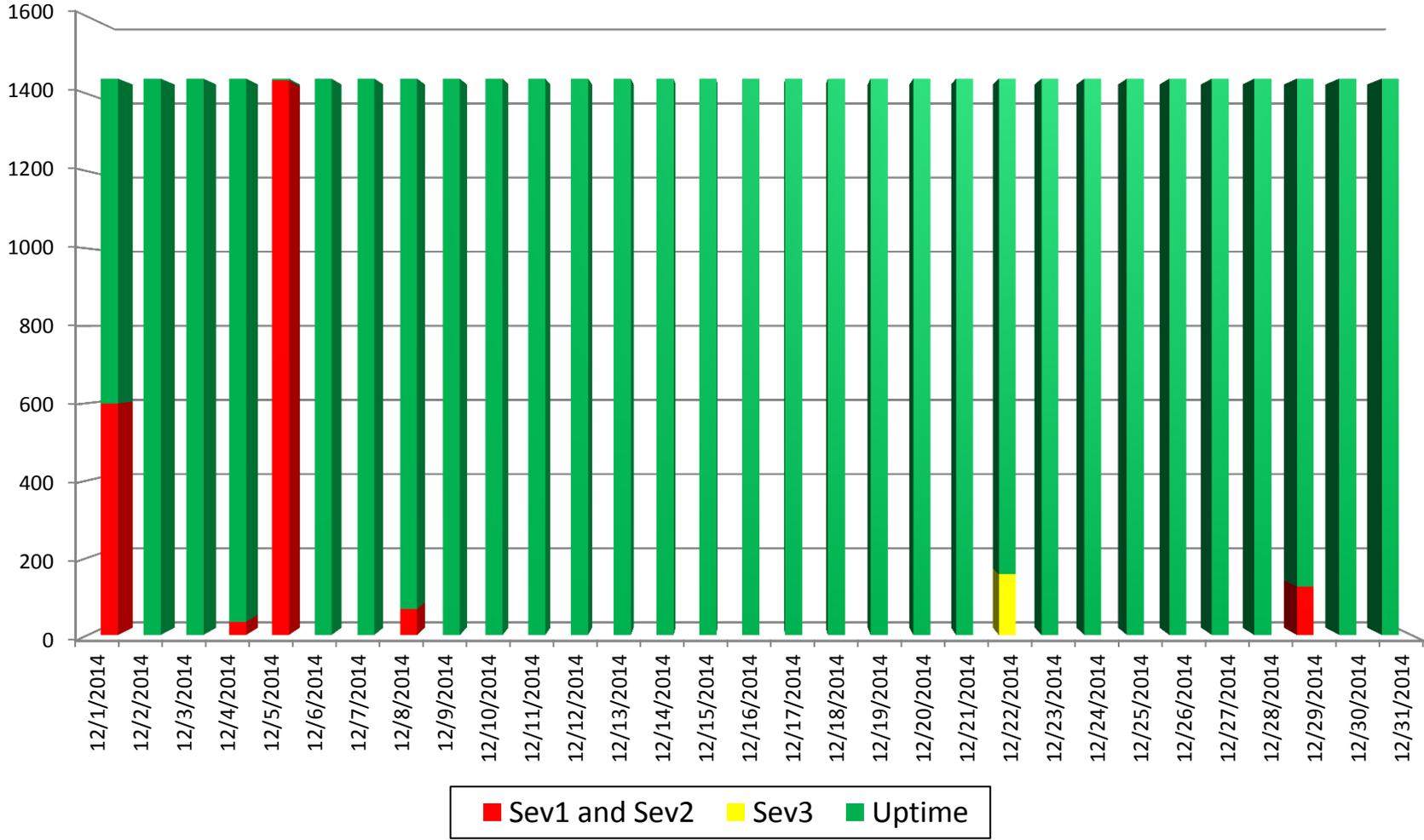
Discussion Item 4: HIway Operations Update

Sev1 and Sev2 – All / Most Mass HIway components impacted as a result of outage

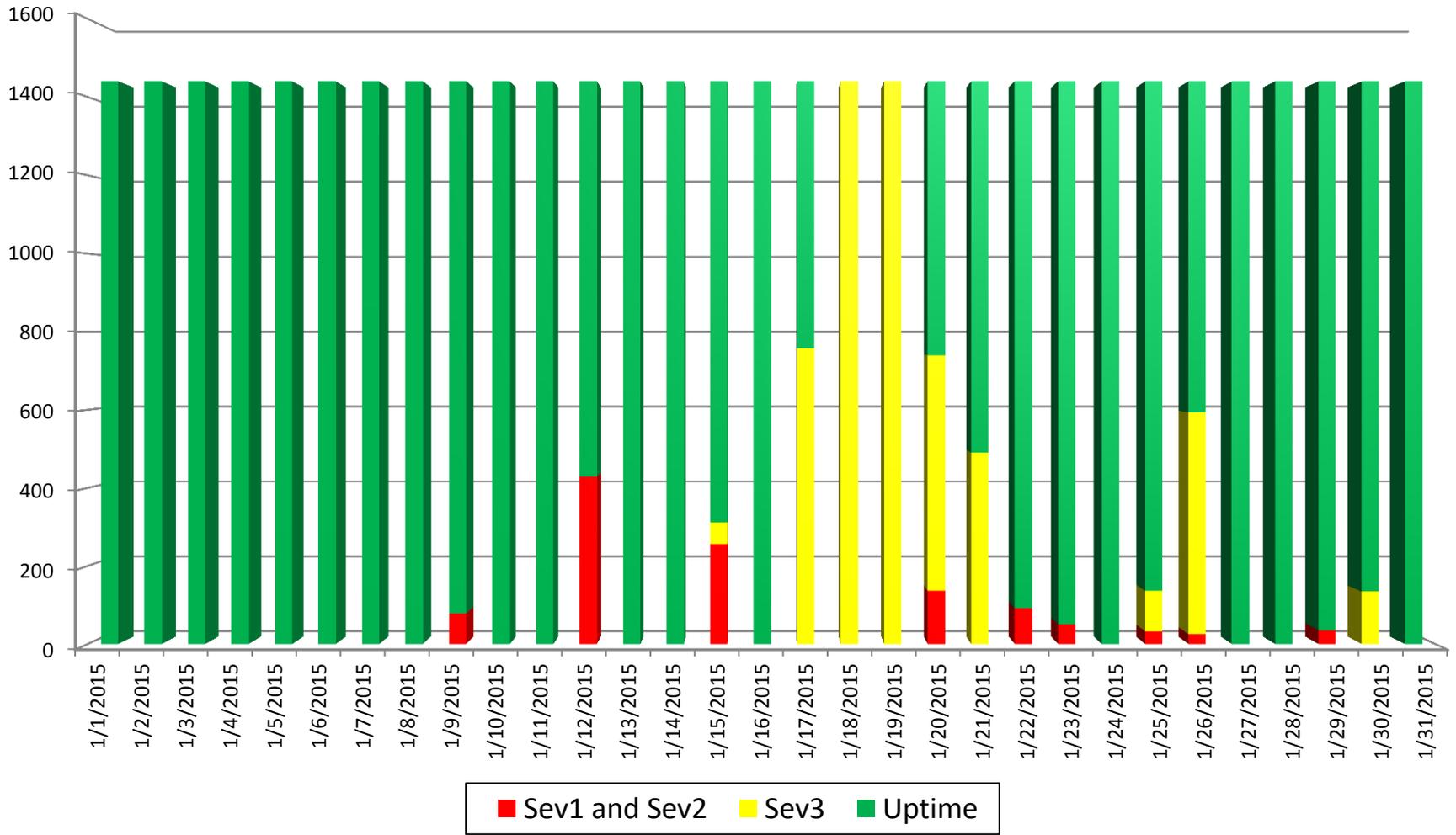*Sev3 – One Mass HIway component impacted as a result of outage*

Sev1 and Sev2 – All / Most Mass HIway components impacted as a result of outage

Sev3 – One Mass HIway component impacted as a result of outage

Stabilization Sprint Overview

Goal: Increase system reliability, performance, and client/participant confidence

- Review past incidents, identify root causes and implement real fixes, not work-arounds
- 6+ week Agile sprint to enhance maximum solution availability / stability
- 4 weekly releases through March with fixes and upgrades; releases rigorously tested and promoted from Dev → Stage → Provider Test →Production
- Orion and EOHHS teams working as one team, in collaborative Agile sprint cycles
- Implement comprehensive and proactive solution monitoring (LANDs, infrastructure, etc.)
- Hold daily noon calls with the entire team
    - Identify any implementations, solution changes, infrastructure changes, stability issues or other critical issues that need to be addressed
- Reallocated additional expert resources from across Orion's global organization
- Encompass software solution and hardware infrastructure components
- Focus on operations process improvement, back-up, recovery; improved security/change management/incident management maintenance and monitoring activities
- Include infrastructure upgrades, Rhapsody tuning, performance enhancement/management, Rhapsody and Webmail upgrades, environment handovers
- Transfer knowledge on pain points for EOHHS staff; resolve customer-indicated challenge areas and use cases
- Institute internal process and management changes and improvements

Stabilization Sprint Highlights

Increased monthly uptime from a low of 94.9% in December to 99.7% in March.

- **Rhapsody Error Queues – Corrections/Cleanup** (reduced disk usage & error queues, greater stability)

- **Rhapsody Upgrades – Direct Gateway (DG)/XPL/Clinical Gateway (CG)/LAND** (performance enhancements, issue fixes with product releases, greater stability)

- **DG Active/Active Setup – HSM and Trust Gateway Active/Active Clustering** (High Availability)

- **Update DG Connection Limit** (increased connection limit, reduced processing queue in Audit, XDR, and Routing)

- **TG Java and Tomcat Update** (upgrade for security, issues, and enhancements)

- **LDAP, DG and XPL Tuning** (duplicate message handling for XDR in DG, greater stability)

- **XDR Filter Upgrade to v2.9** (performance enhancements and issue fixes)

- **SEE Critical Fixes** (Lantana/SEE attachment file size limitation and XDR attachment viewing error resolved)

- **Underlying Stabilization Issues Addressed that Relate to 5 Critical Mass HIway Use Cases** (clears the way for implementation of functional changes to support these use cases)
  - BIDMC/LAND to MAeHC/LAND
  - Partners/LAND to DPH MIIS/CG Node
  - eCW/HISP to Meditech/XPL
  - Tufts/LAND to MetroWest/XPL
  - BID Plymouth/XPL to Webmail

General Improvements:

- **Implemented monitoring of all CG nodes and critical applications**
  - Alerts sent to team members for action
- **Reevaluated architecture of the Clinical Gateway Nodes**
  - fine tuning and implement best practices
- **Created Gold Code for Clinical Gateway components**
  - Embedding best practices into the templates.
- **Implemented automated Daily Health Checks – 7am, 2pm & 8pm.**
  - Any anomalies are immediately identified and corrected.
- **Upgrading Rhapsody to version 5.5.4 Hotfix 2 being applied to all CG nodes.**
  - improve system stability and performance

Clinical Gateway Modifications

- **MIIS CG Node – CDC standard WSDL deployed: a new webservice with CDC WSDL that allows providers to easily adopt and exchange information with MIIS systems**

- **OTP CG Node – Enhancements: lookup table values updated; additional business validations added; fixes to improve error handling; cleanup unwanted/unused logs**

- **E-Referral CG Node – Enhancements: SMIME capabilities**

- **MCR CG Node – Enhancements: new version of Rhapsody software installed to improve system stability and performance**

- **CLPPP CG Node – Enhancements: new version of Rhapsody software installed to improve system stability and performance**

- **Syndromic CG Node – Enhancements: fixes applied to address a few ACK-specific issues**

Infrastructure Modifications

- **Upgraded memory on database server**

- **Updated storage array - VNX HBA**

Sev1 and Sev2 – All / Most Mass HIway components impacted as a result of outage

Sev3 – One Mass HIway component impacted as a result of outage

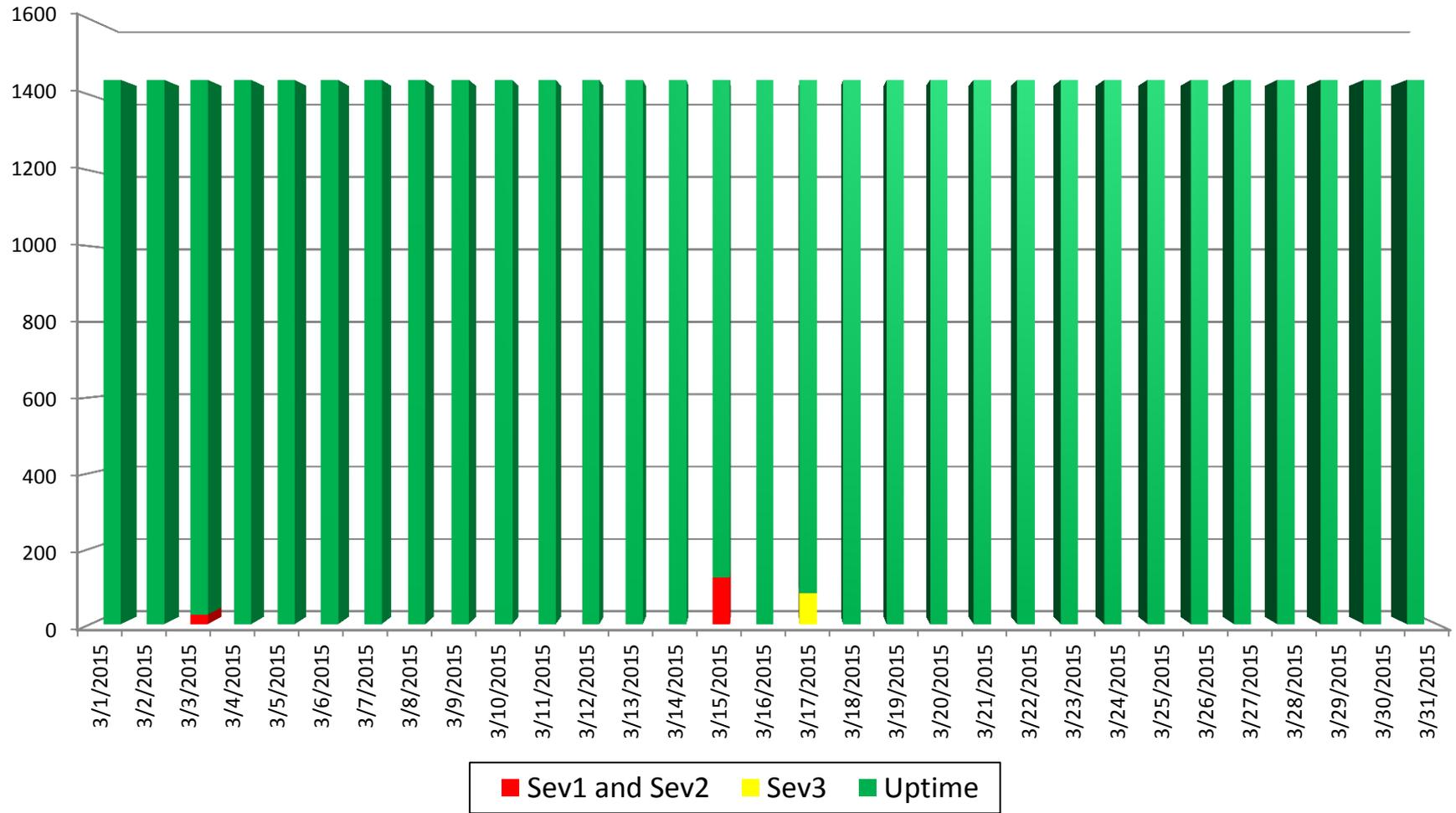# 2015 Mass HIway Incident Summary Dashboard
March 2015

Sev1 and Sev2 – All / Most Mass HIway components impacted as a result of outage

Sev3 – One Mass HIway component impacted as a result of outage

2015 Mass HIway Incident Summary Dashboard
Dec. 2014 to Dec. 2015

Monthly Mass HIway Availability Target: Less than 44 minutes of Sev1+Sev2+PEM outage (99.9% availability)

Sev 1 - All / Most Mass HIway components impacted as a result of outage

Sev 2 - Multiple Mass HIway components impacted as a result of outage in one of the shared service

	Severity 1 Issue			Severity 2 Issue			Proactive Emergency Maintenance (PEM)			Totals		
	#	Duration (minutes)	Availability (%)	#	Duration (minutes)	Availability (%)	#	Duration (minutes)	Availability (%)	Total #	Total Duration of Sev 1 Sev 2 PEM (minutes)	Total Monthly Availability (%)
December	0	0	100.0000	4	2260	94.9373	0	0.00	100.0000	4	2260	94.9373
January	1	256	99.4265	9	876	98.0376	2	150	99.6640	12	1282	97.1281
February	0	0	100.0000	1	57	99.8586	1	120	99.7024	2	177	99.5610
March	1	123	99.7245	1	25	99.9440	0	0	100.0000	2	148	99.6685
April			100.0000			100.0000			100.0000	0	0	100.0000
May			100.0000			100.0000			100.0000	0	0	100.0000
June			100.0000			100.0000			100.0000	0	0	100.0000
July			100.0000			100.0000			100.0000	0	0	100.0000
August			100.0000			100.0000			100.0000	0	0	100.0000
September			100.0000			100.0000			100.0000	0	0	100.0000
October			100.0000			100.0000			100.0000	0	0	100.0000
November			100.0000			100.0000			100.0000	0	0	100.0000
December			100.0000			100.0000			100.0000	0	0	100.0000
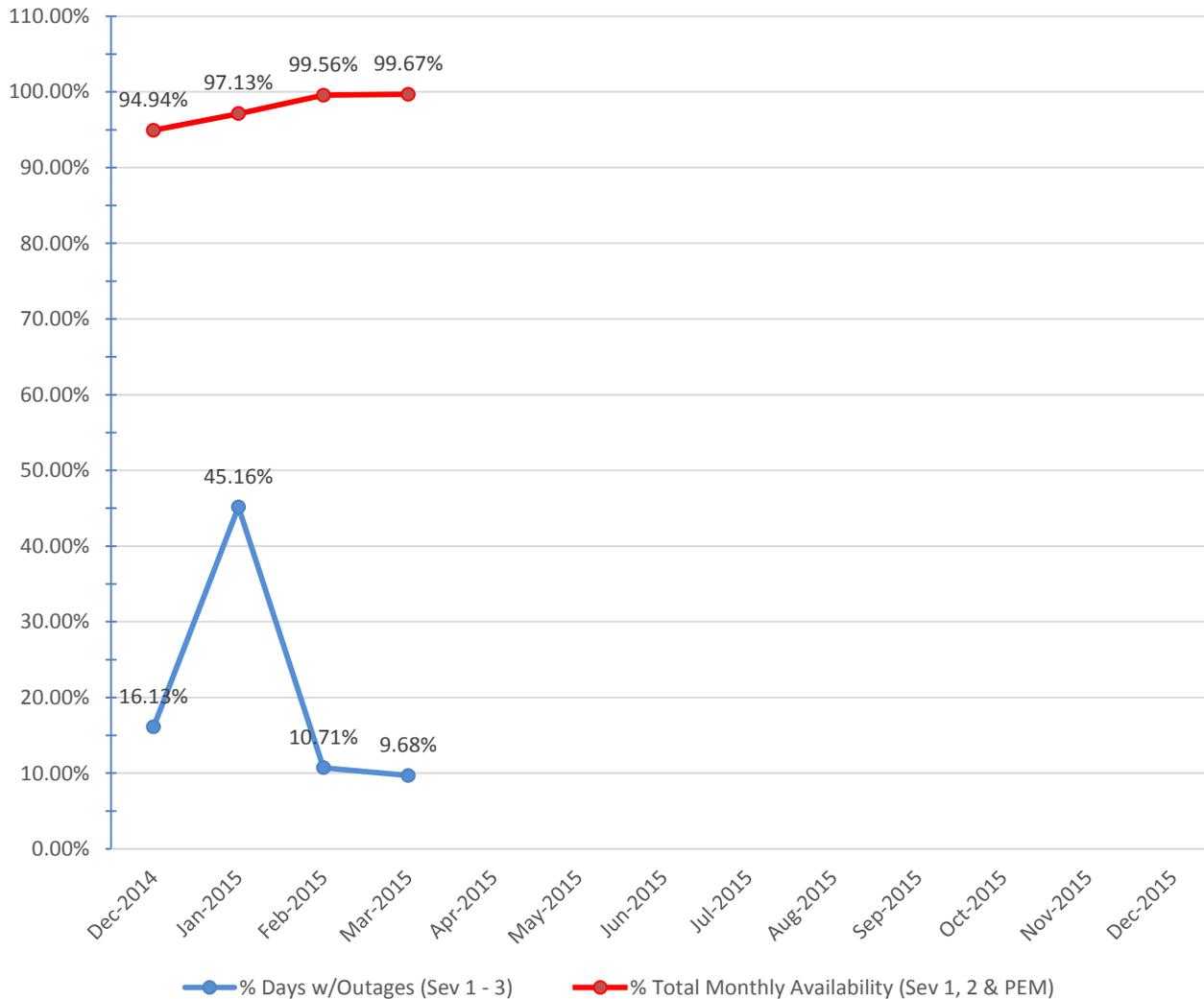
Metric Targets:

- "Total Monthly Availability" – no lower than 99.9% (downtime no more than ~44 minutes/month)

- "Days with Outages" – no higher than ~ 3% (1 day)

What's next?

Over the next 2 – 3 months…

- Complete stabilization "loose ends"

- Performance and load test HIway infrastructure and components

- Complete system management documentation for existing HIway environment

- Complete development and implementation of key system management processes

- Refine monitoring tools – dashboards, reports, etc. (on-going)

- Publish monthly uptime metrics on HIway web site

- Begin analysis and assessment of future options – i.e. Orion's multi-tenant Direct Secure Messaging solution

- Refocus on enhancing HIway functionality and simplifying the logistics/mechanics required for providers to connect to the HIway – process, technology, etc.

March Participation Activity

New Participation Agreements completed in March:

- Avner Aliphas – New England Ear, Nose & Throat
- Boston Common Podiatry
- Cape Regency Rehabilitation & Health Care Center
- Essex Inpatient Physicians
- Gleason & Greenfield Pediatrics
- HealthFirst Family Care Center

- Lazarou Urology Associates
- Mark Abensohn M.D. LLC. d.b.a. Medfield Internal Medicine
- Sal Markowitz M.D.
- Solomon Gabbay M.D. P.C.
- Steven Kornbleuth M.D.
- Mercy Hospital Inc. d.b.a. Mercy Medical Center
- Universal Pediatric Associates

March Connection Activity

New Connections completed in March:

- Avner Aliphas – New England Ear, Nose & Throat
- Boston Common Podiatry
- Cape Regency Rehabilitation & Health Care Center
- Community Health Programs Inc.
- Genesis Healthcare

- Gleason & Greenfield Pediatrics
- Lazarou Urology Associates
- Mark Abensohn M.D. LLC. d.b.a. Medfield Internal Medicine
- Sal Markowitz M.D.
- Solomon Gabbay M.D. P.C.
- Steven Kornbleuth M.D.

Setting new targets

Connection Status	Current Goal	New Goal	Actuals (As of Mar 19 2015)	Target (By Jun 30 2015)
Signed On	431	431	382	49
Connected	431	431	386	45
Actively Using	431	100	69	31

Goal Revision Contributors:

- Low turnaround of customers via another HISP (e.g. eCW shift in Direct strategy)
- Challenges and competing priorities for large health systems and/or hospitals in operationalizing internal workflows for sending Discharge Summaries and/or Transition of Care
- Longer than anticipated cycle times and complexities for interfacing and testing with multiple parties (HIway participants, vendors, DPH)
- Limited visibility into non-HIway HISP activity
- Resource shift to address stability concerns
- Limited usability of service of certain customer configurations (e.g. CCD rendering in Webmail, XDR <---> SMIME)

Setting new targets

New enrollments & Actively using Prospects	Pipeline Est.	Confidence Factor	New Actively Using
Current eClinicalWorks practices ready to onboard with existing Direct Strategy	120	5%	6
Actively using Hospital Hubs enabling respective trading partners (receivers)	134	15%	20
Constituents from IMPACT grant Webmail users	100	5%	5
NextGen Share HISP organizations	8	25%	2
Total			33

Confidence factor enablers:

- Obtained definitive practice list from various eCW constituents to connect to Mass HIway
- Improved response times and willingness from existing and new participants since completion of MU stage2 attestation deadline
- Improved response times from other new HISPs to enable connectivity with Mass HIway
- Pro-active objective engagements with Hospital HUBs to operationalize sending and enabling specific critical receiving trading partners

Progress Relative to SFY'15 With Revised Targets

			Mass Hiway HISP			Via another HISP		Total		SFY '15 Target	
Tier	SubTier	Universe (est)	# Signed on	# Connected	# Actively Using	# Connected	# Actively Using	# Actively Using	% Actively Using	# Actively Using	% Actively Using
Tier 1	Large Hospitals / Health Systems	29	25	19	13			13	45%	13	45%
	Health Plans	9	4	4	2			2	22%	3	33%
	Multi-entity HIE	5	3	1				0	0%	TBD	TBD
	Commercial Imaging Centers & Labs	TBD	1	1				0	0%	0	TBD
Tier 2	Small Hospitals	37	35	31	20			20	54%	20	54%
	Large ambulatory practices (50+)	11	7	6	4	5	1	5	45%	5	45%
	Large LTCs	8	1					0	0%	1	13%
	ASCs	63						0	0%	0	0%
	Ambulance/Emergency Response	39	1	1				0	0%	0	0%
	Business Associate Affilliates	5	1	1	1			1	20%	1	20%
	Local government, publichealth	TBD	1	1	1			1	0%	TBD	TBD
Tier 3	Small LTC	310	16	14	1			1	0%	10	3%
	Large behavioral health	10	2	2				0	0%	1	10%
	Large home health (Added to 4b)	Merged							Merged		Merged
	Large FQHCs (10-49)	10	14	8	4	1		4	40%	5	50%
	Medium ambulatory practices (10-4	365	14	10	1	3		1	0%	5	1%
Tier 4	Small behavioral health	90	18	12	1			1	1%	1	1%
	Home Health, LTSS	149	22	17	4	1		4	3%	10	7%
	Small FQHCs	29	4	1				0	0%	0	0%
	Small ambulatory practices (3-9)	1595	38	55		6		0	0%	6	0%
Tier 5	Small ambulatory practices (1-2)	4010	176	141	16	59	1	17	0%	20	0%
Grand Total		6774	383	325	68	75	2	70	1%	101	1%

31
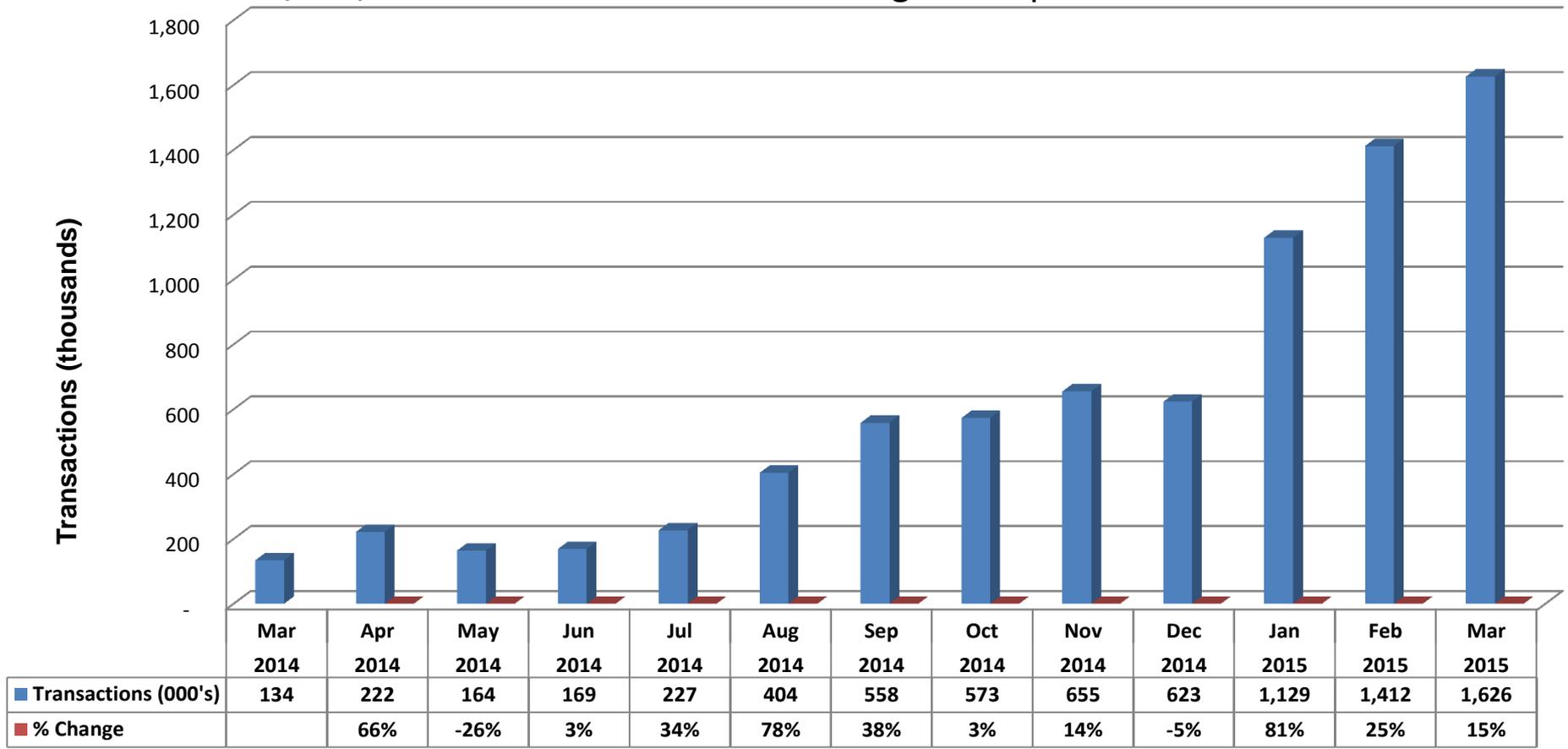
13 Month HIway Transaction Activity

1,625,725 Transactions* exchanged in March (2/21 to 3/20/2015**)

9,992,021 Total Transactions* exchanged inception to date

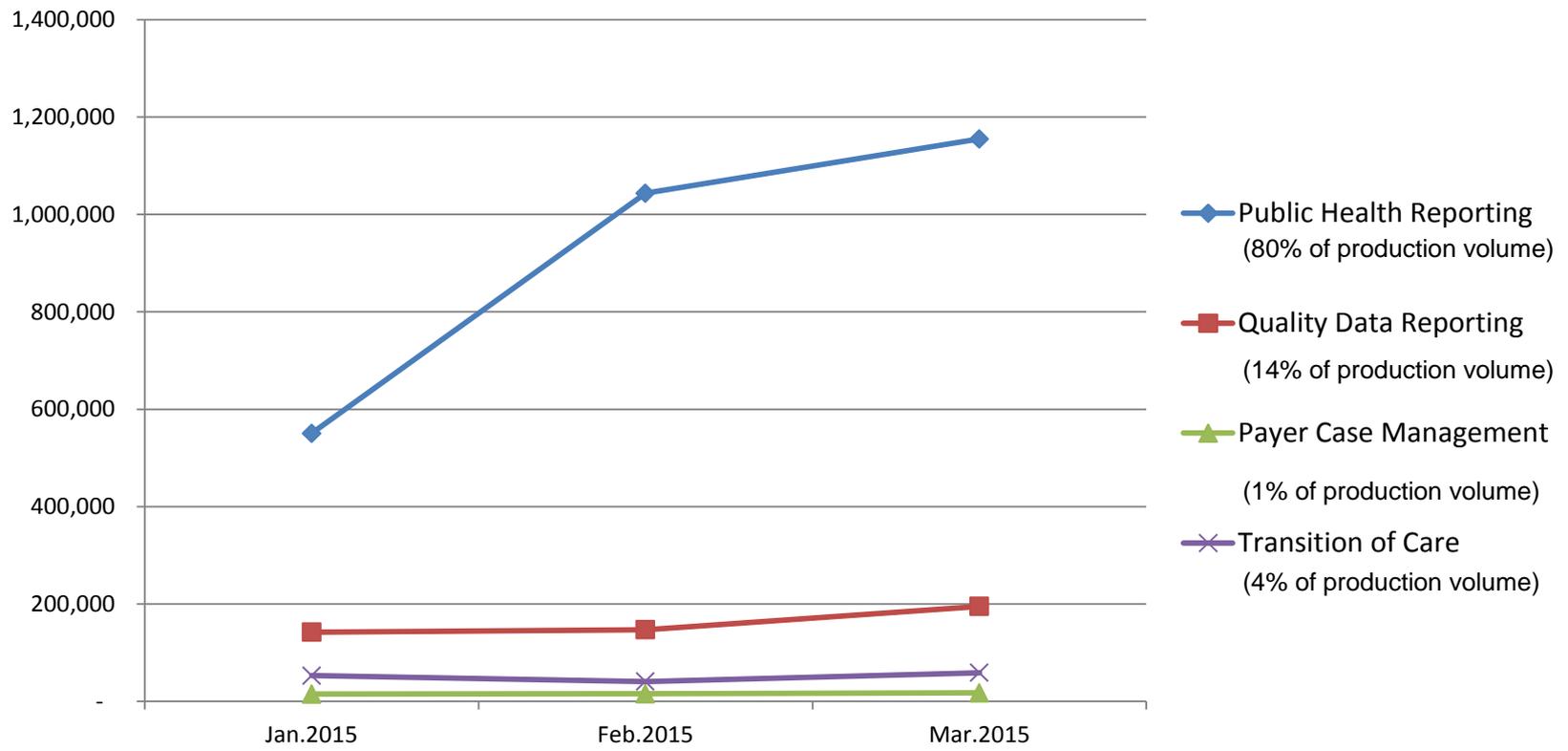|	Mar 2014	Apr 2014	May 2014	Jun 2014	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015
Transactions (000's)	134	222	164	169	227	404	558	573	655	623	1,129	1,412	1,626
% Change		66%	-26%	3%	34%	78%	38%	3%	14%	-5%	81%	25%	15%

Y-axis: Transactions (thousands)

Note: Includes all transactions over Mass HIway, both production and provider test
**Note: Starting 12/20/2014, reporting cycle is through the 20th of each month.*

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2015 HIway Production Transaction Trends by Use Case Type

82% of HIway activity year-to-date* is for production transactions

- Public Health Reporting (80% of production volume)
- Quality Data Reporting (14% of production volume)
- Payer Case Management (1% of production volume)
- Transition of Care (4% of production volume)

33

Note: Reporting cycle is through the 20th of each month.

DPH Registry Update

Currently Available Public Health Registry Connections:

- Massachusetts Immunization Information System (MIIS)
- Electronic Lab Reporting (ELR)
- Syndromic Surveillance (SS) *ED and EH only*
- Opioid Treatment Program (OTP)
- Massachusetts Cancer Registry (MCR)
- eReferral
- Childhood Lead Paint Poison Prevention Program (CLPPP)
- Occupational Lead Poisoning Registry (Adult Lead)

Connections in Progress:

- Children's Behavioral Health Initiative (CBHI) – April 2015

Future Development:

- Prescription Monitoring Program (PMP)

HISP to HISP Connectivity

#	HISP Vendor	Kickoff	Onboarding	Testing	HIway Prod Readiness	Live/Target Date
1	eLINC					✔ 2014-May
2	ADS/DataMotion					✔ 2014-Jun
3	Alere					✔ 2014-Jul
4	Inpriva					✔ 2014-Aug
5	Surescripts					✔ 2014-Oct
6	eClinicalWorks					✔ 2014-Oct
7	McKesson(RelayHealth)					✔ 2014-Dec
8	Allscripts(MedAllies)					✔ 2014-Jan
9	EMR Direct					✔ 2015-Mar
10	SES					✔ 2015-Mar
11	Aprima					2015-Mar
12	NHHIO					2015-Mar
13	NextGen Share					2015-Jun
14	Medicity					2015-Jun
15	athenahealth					TBD
16	Cerner					TBD
17	UpDox					TBD
18	MaxMD					TBD
19	Veterans Health Administration					TBD

Query and Retrieve Pilots

Pilot Site	Status	Estimated Go-live
BIDMC	Now using PatientSite (patient portal) for the first entry point where patients can opt-in or opt-out to the Mass HIway. The programming for that shift is in progress.	Summer 2015
Atrius	As of 3/20/2015 , 79,587 consent forms have been filed in Epic out of 330,979 requests for consent that have been given to patients. Additional ADT testing with the Mass HIway for patients that have a consent on file continues. Working on patient portal to capture patient consent.	Summer 2015
Tufts	Initial test transactions have been successfully completed. Weekly testing resumes during the month of March to confirm additional send/receipt of ADT submissions to the Mass HIway. Production status to be updated upon completion of testing. Testing revealed that when a patient changes their consent from yes to no the patient is still searchable in the RLS	TBD – Pending RLS update
Holyoke	The consent process has been finalized. Next steps are to operationalize the new process and anticipated workflow changes for efficient capture of patient consent preferences. Once complete, Holyoke is production ready.	TBD

RLS Unique Patients Count
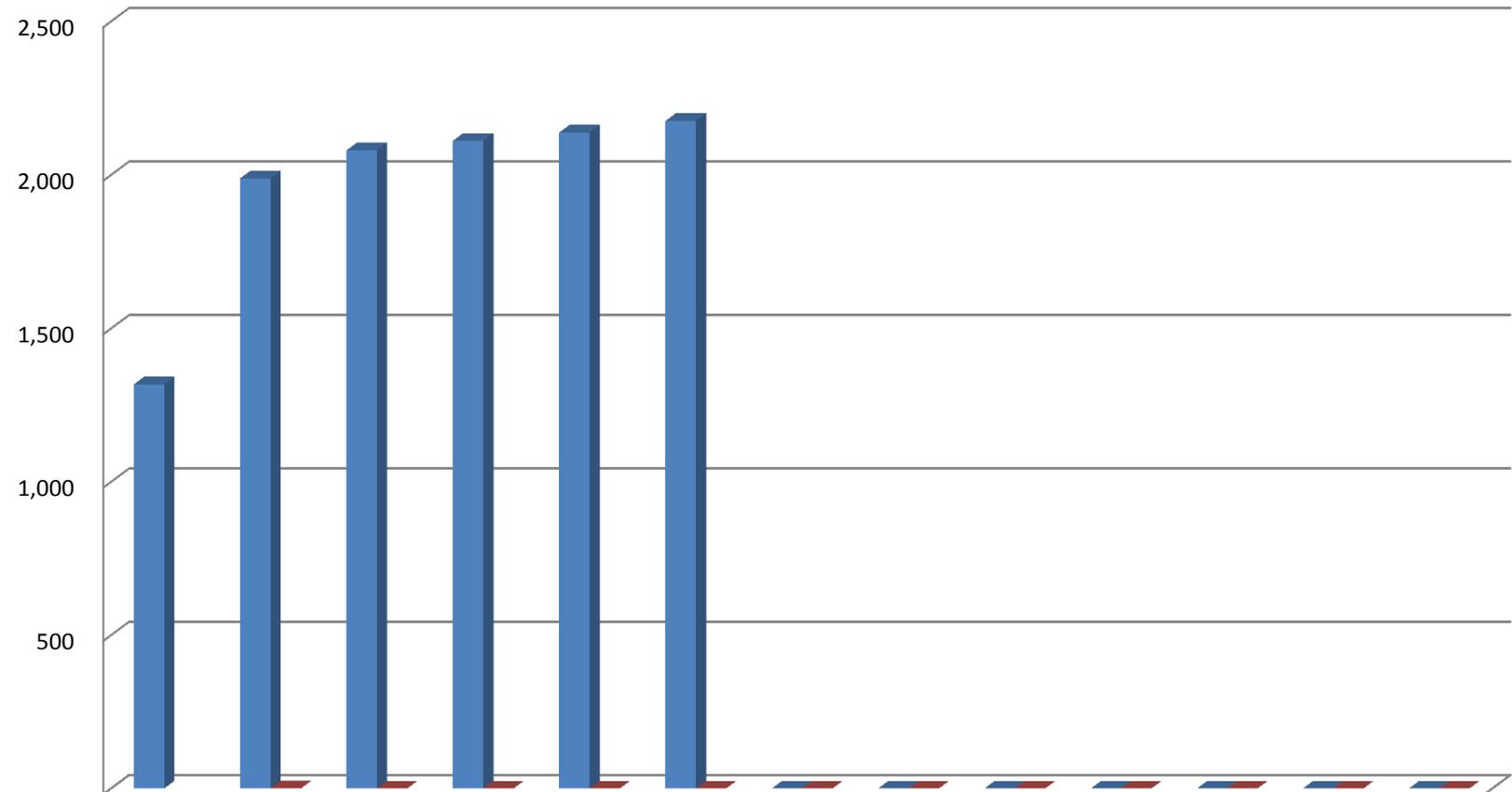
	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015
Unique Patients	1,318	1,989	2,080	2,111	2,138	2,176	-	-	-	-	-	-	-
% Change		51%	5%	1%	1%	2%	0%	0%	0%	0%	0%	0%	0%

Note: Starting 12/20/2014, reporting cycle is through the 20th of each month.

Communications & Outreach

- **Webinars**
  - Guide to Using Webmail Webinar 3/23/2015: 41 attendees
  - Mass HIway Overview 3/26/2015 : 25 attendees
  - Upcoming Webinar: Provider Directory Overview 4/9/2015

  Calendar, registration links, and previous presentations at:
  http://www.masshiway.net/HPP/NewsandEvents/Events/index.htm

- **Mass HIway Participant Newsletter- Sign up now at www.masshiway.net**
  - March: 685 sent with 29% unique open rate

Discussion Item 5: Wrap Up

HIT Council 2015 Meeting Schedule*:

2015 Meeting Schedule:
- ~~No meeting scheduled in January 2015~~
- ~~February 2~~ *- meeting cancelled*
- ~~March 2~~
- ~~April 6~~
- **May 4**
- June 1
- July 6
- August 3
- September 14 *(1st Monday of September is Labor Day)*
- October 5
- November 2
- December 7

*All meetings to be held from 3:30-5:00 pm at One Ashburton Place, 21st floor, Boston, unless otherwise noted

Appendix

Tier	SubTier	Universe (est)	# Signed on	# Connected	# Actively Using	# Connected	# Actively Using	# Actively Using	% Actively Using	# Actively Using	% Actively Using
Tier 1	Large Hospitals / Health Systems	29	25	18	13			13	45%	19	66%
	Health Plans	9	4	4	2			2	22%	3	33%
	Multi-entity HIE	5	3	1				0	0%	TBD	TBD
	Commercial Imaging Centers & Labs	TBD	1	1				0	0%	2	TBD
Tier 2	Small Hospitals	37	35	31	20			20	54%	30	81%
	Large ambulatory practices (50+)	11	7	5	4	5	1	5	45%	5	45%
	Large LTCs	8	1					0	0%	4	50%
	ASCs	63						0	0%	4	6%
	Ambulance/Emergency Response	39	1	1				0	0%	5	13%
	Business Associate Affilliates	5	1	1	1			1	20%	3	60%
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	Large behavioral health	10	2	2				0	0%	3	30%
	Large home health (Added to 4b)	Merged							Merged		Merged
	Large FQHCs (10-49)	10	14	8	4	1		4	40%	9	90%
	Medium ambulatory practices (10-4	365	14	9	1	3		1	0%	15	4%
Tier 4	Small behavioral health	90	19	12	1			1	1%	17	19%
	Home Health, LTSS	149	21	14	4	1		4	3%	15	10%
	Small FQHCs	29	4	1				0	0%	5	17%
	Small ambulatory practices (3-9)	1595	38	55		5		0	0%	80	5%
Tier 5	Small ambulatory practices (1-2)	4010	179	138	16	59	1	17	0%	200	5%
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