

# Preparing for Electronic Labs: Defining Processes and Accountabilities for Shared Practice Management

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# Disclosures

Presenters perceive no conflict of interest with this presentation.

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# Objectives

- ✓ Introduce Stonechurch Family Health Centre
- ✓ Highlight OSCAR our EMR system
- ✓ Describe our current paper lab management process
- ✓ Provide an overview of the OSCAR inbox
- ✓ Discuss our go live planning and communication strategy
- ✓ Present our final inbox plan
- ✓ Discuss lessons learned



# An Introduction to our Clinic ...



**STONECHURCH**  
FAMILY HEALTH CENTRE

 Hamilton Health Sciences

McMaster  
University  
HEALTH SCIENCES



Department of  
**Family Medicine**  
McMaster  
Family Health Team

# An Introduction to our Clinic ...

- ✓ Provide primary care for approximately 15,000 patients in Hamilton and surrounding area.
- ✓ Clinical teaching unit affiliated with McMaster University and Hamilton Health Sciences
- ✓ Three teams of family doctors, nurses, allied health professionals and support staff
- ✓ Academic and community physicians
- ✓ Teaching and research



# OSCAR McMaster: Our EMR System

- ✓ Scheduling, E-charting, prescribing
- ✓ Billing functions
- ✓ Chronic disease management tools, disease registry
- ✓ Preventions module
- ✓ Registration and rostering management
- ✓ Referral system
- ✓ Decision alerts
- ✓ Secure messaging
- ✓ Reminders/task assigning



# An Introduction to our Team ...

- ✓ Team A:
  - ✓ 6 academic physicians
  - ✓ 3 community physicians
  - ✓ 4 part-time locum physicians
  - ✓ 21 Residents ( 6-9 full-time at any time)
  - ✓ 4 RN(EC)
  - ✓ 2 RPN
  - ✓ 8 Support Staff
- ✓ 2010-2011 - 26,000 encounters



# Test Results Management Guiding Principles

- ✓ Vital to quality patient care
- ✓ Failure to follow-up can lead to harm
- ✓ Results managed in a complex health care system
- ✓ Good communication is fundamental
- ✓ Well defined process and accountabilities
- ✓ Patients must be appropriately informed



# System Requirements

- ✓ Electronic or paper-based systems:
  - ✓ Systems for follow-up in place
  - ✓ Record all tests ordered
  - ✓ Record all results reviewed
  - ✓ Identify high risk patients
  - ✓ Communicate clinically significant results
  - ✓ Record patient follow-up



# Lab Management

## Current Paper Based Process

Team based approach

MRP accountabilities

Resident accountabilities:

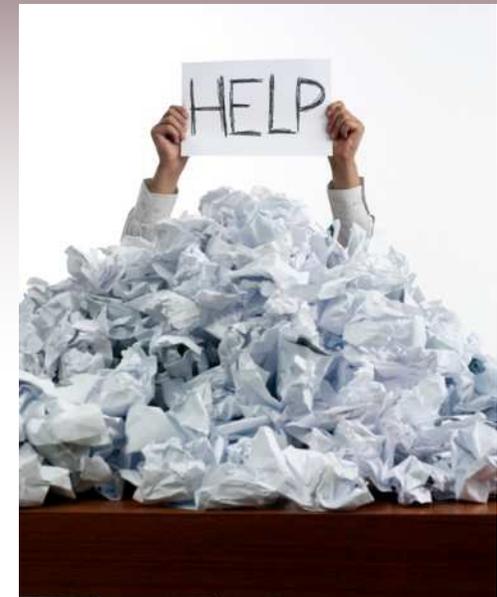
First review, follow-up and sign off

Nursing accountabilities:

Practice coverage, scan for urgent results

Support staff roles:

Preventions, scanning, call backs





# OSCAR Inbox: System Overview

Lab Reports Page 1

oscarcmcmaster.org https://stonechurch.oscarcmcmaster.org:11042/oscar\_sfhc/dms/inboxManage.do

New Lab Reports for Kati Ivanyi Page : 1

Search Close Forwarding Rules Default View Forward File Docs HL7 Normal Abnormal Not Assigned About OLIS Search HRM Status/Upload Create Lab HL7 Lab Upload Doc Upload Change view Pending Docs

Health Number	Patient Name	Sex	Result Status	Date of Test	Order Priority	Requesting Client	Discipline	Report Status	Ack #
<input type="checkbox"/> 8632551522		F		2011-10-14 12:13:48	Routine	K.E. IVANYI	MICROBIOLOGY	Final	1 (1)
<input type="checkbox"/> 8914989556		F Abnormal	2011-10-13 18:49:59	Routine	DR. SUSAN O'TOOL	CYTOPATHOL...	Final	1	
<input type="checkbox"/> 5456410058		F Abnormal	2011-10-13 15:13:51	Routine	M. LUTHRA	CHEMISTRY	Final	1 (2)	
<input type="checkbox"/> 9652209835		F	2011-10-13 00:00:00	----	DR. K. E. IVANYI	MICROBIOLOGY	Final	1	
<input type="checkbox"/> 6619585729		M Abnormal	2011-10-12 18:09:43	Routine	K.E. IVANYI	CHEMISTRY	Final	1	
<input type="checkbox"/> 7542728196		M Abnormal	2011-10-12 00:00:00	----	DR. K. E. IVANYI	HEMATOLOGY	Final	0	
<input type="checkbox"/> 7268405318		F Abnormal	2011-10-07 18:39:43	Routine	K.E. IVANYI	CHEMISTRY/...	Final	0	
<input type="checkbox"/> 7002352255		F Abnormal	2011-10-06 03:30:59	Routine	DR. K. IVANYI	HEMATOLOGY...	Final	0 (1)	
<input type="checkbox"/> 5467109202		F Abnormal	2011-10-05 13:23:01	Routine	K.E. IVANYI	CHEMISTRY/...	Final	1	
<input type="checkbox"/> 7413898375		F	2011-10-05 00:00:00	----	DR. K. E. IVANYI	MICROBIOLO...	Final	1 (1)	
<input type="checkbox"/> 7927751672	F Abnormal	2011-09-27 03:30:51	Routine	RN-EC HEATHER FR	HEMATOLOGY...	Final	1		
<input type="checkbox"/> 7559834416	F Abnormal	2011-09-22 00:00:00	----	DR. K. E. IVANYI	CYTOLOGY	Final	0		
<input type="checkbox"/> 9401305637	M Abnormal	2011-08-12 17:04:36	Routine	K.E. IVANYI	CHEMISTRY/...	Final	0		

Search Close Forwarding Rules Default View Forward File Docs HL7 Normal Abnormal Not Assigned Docs

Done

# OSCAR Inbox: System Overview

oscarcmcmaster.org https://stonechurch.oscarcmcmaster.org:110427/oscar\_srnc/lab/CA/ALL/labDisplay.jsp?segmentID=88561&providerNo=224&se

Acknowledge Comment Forward Close Print Msg Tickler E-Chart Req# Next Appointment:

**Detail Results: Patient Info.**

**Patient Name:** [Redacted]  
**Date of Birth:** [Redacted]  
**Age:** [Redacted]  
**Health #:** [Redacted]

**Results Info**

**Date of Service:** 2011-10-05 10:39  
**Date Lab Received:** 2011-10-06 09:07  
**Report Status:** Final  
**Client Ref. #:**  
**Accession #:** 64-45234718

**Requesting Client:** K.E. IVANYI **cc: Client:**

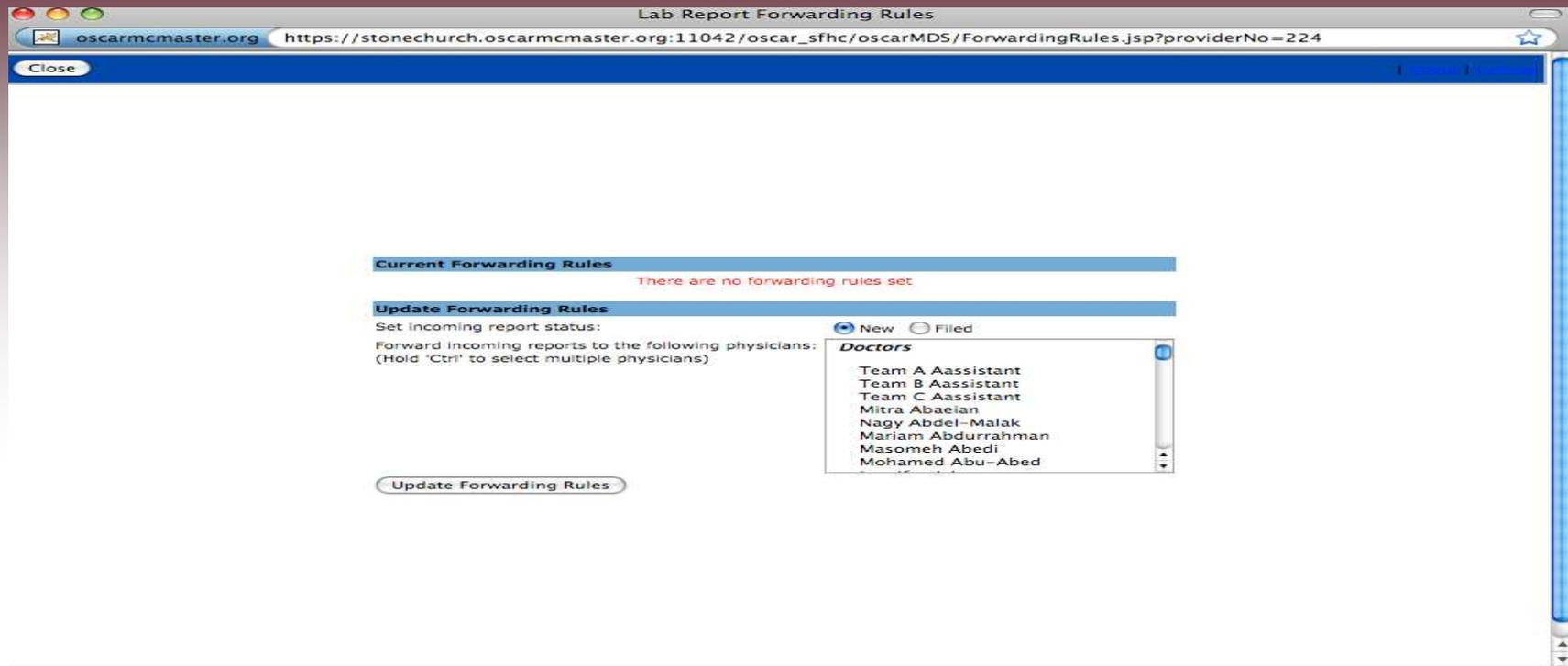
Kati Ivanyi : Not Acknowledged no comment  
Tanya Grieci : Acknowledged 11-Oct-11 15:14, no comment

**CHEMISTRY**

Test Name(s)	Result	Abn	Reference Range	Units	Date/Time Completed	Status	Annotation
<b>GLUCOSE SERUM FASTING</b>	7.9	H	3.6 - 6.00	mmol/L	2011-10-05 18:32:43	F	
3.6 - 6.0 NORMAL FASTING GLUCOSE 6.1 - 6.9 IMPAIRED FASTING GLUCOSE >6.9 PROVISIONAL DIAGNOSIS OF DIABETES MELLITUS							
<b>CREATININE</b>							
<b>CREATININE</b>	82	N	50 - 100.00	umol/L	2011-10-05 18:32:43	F	
<b>eGFR</b>	58	L	>=60. mL/min /1.73m**2		2011-10-05 18:32:43	F	
Consistent with moderate chronic kidney disease if result result\,br\ Consistent with moderate chronic kidney disease if result confirmed by repeat measurement, with persistence for 3 months or more. For African Americans, the reported eGFR should be multiplied by a factor of 1.21 and re-interpreted accordingly.							
<b>CHOLESTEROL</b>	3.73	N	<= 5.19	mmol/L	2011-10-05 18:32:43	F	
<b>TRIGLYCERIDES</b>	1.59	N	<= 2.29	mmol/L	2011-10-05 18:32:43	F	
<b>HDL CHOLESTEROL</b>	1.25	L	1.3 - 99999.00	mmol/L	2011-10-05 18:32:43	F	
<b>LDL CHOLESTEROL CALC.</b>	1.75	N		mmol/L	2011-10-05 18:32:43	F	

Done

# OSCAR Inbox: System Overview



# OSCAR Inbox: System Overview

The screenshot shows a web browser window with the URL `https://stonechurch.oscarmcmaster.org:11042/oscar_sfhc/oscarMDS/SelectProvide`. A modal dialog box titled "Select Provider" is open, containing a search field and two lists: "Favorites" and "Forward List". Below these lists are navigation arrows (>> and <<) and a "Submit" button. The text "Double click a Provider to remove from list" is also present.

In the background, a table of test results is visible. The table has columns for Test Name(s), Result, Abn, Reference Range, Units, Date/Time Completed, Status, and Annotation. The following table represents the data shown in the screenshot:

Test Name(s)	Result	Abn	Reference Range	Units	Date/Time Completed	Status	Annotation
MCH	28.2		27.5 - 33.0	pg	2011-10-05 08:42:00	Final	
MCHC	338		305 - 360	g/L	2011-10-05 08:42:00	Final	
RDW	14.7	HI	11.5 - 14.5	%	2011-10-05 08:42:00	Final	
PLATELET COUNT	224		150-400	x E9/L	2011-10-05 08:42:00	Final	
<b>HEMATOLOGY II</b>							
ABSOLUTE: NEUTS	3.2		2.0 - 7.5	x E9/L	2011-10-05 08:42:00	Final	
(A) LYMPH	2.9		1.0 - 3.5	x E9/L	2011-10-05 08:42:00	Final	
(A) MONO	0.7		0.2 - 1.0	x E9/L	2011-10-05 08:42:00	Final	



# OSCAR Inbox: System Overview

Lab Results

oscarcmcmaster.org https://stonechurch.oscarcmcmaster.org:11042/oscar\_sfhc/lab/CA/ON/labValues.jsp?testName=CREATININE&demo=

Detail Results: Patient Info.

Patient Name: [REDACTED]  
 Date of Birth: [REDACTED]

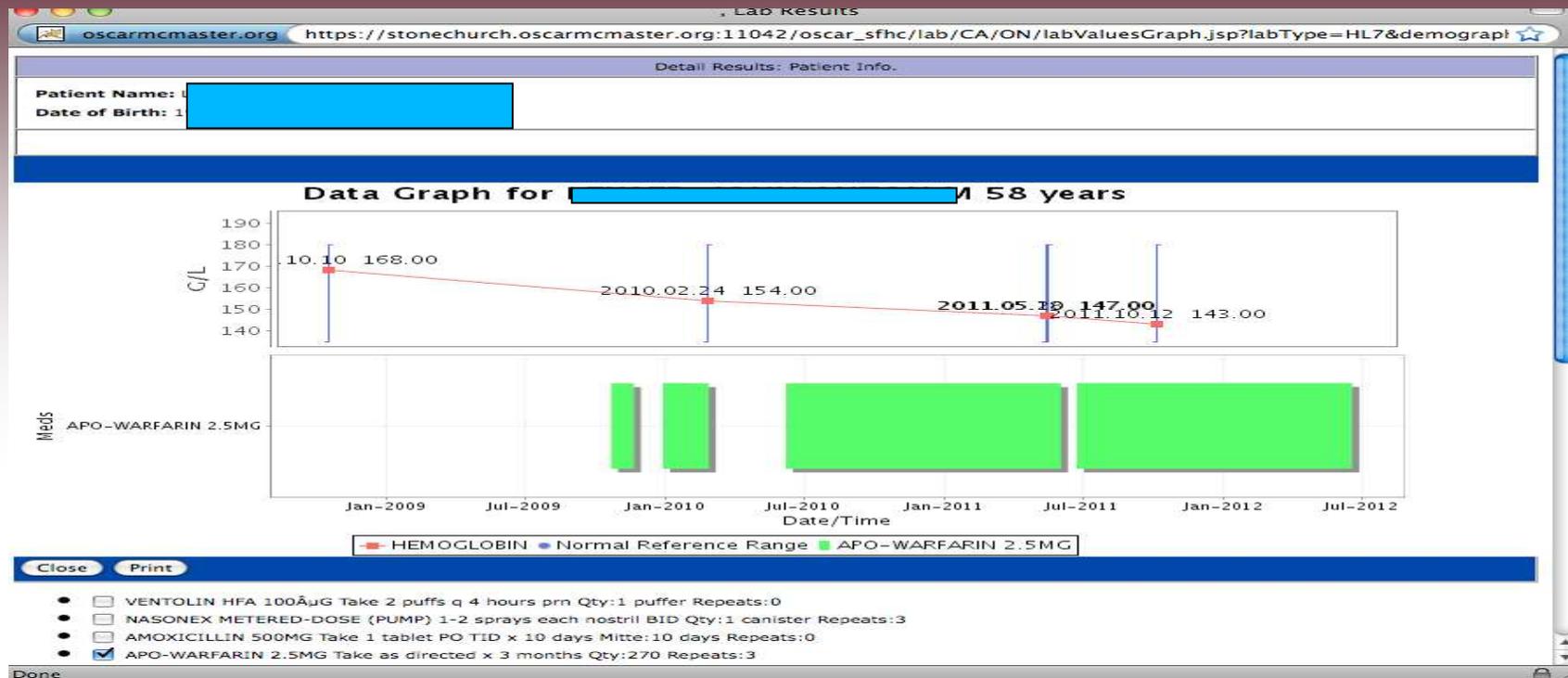
Test Name(s)	Result	Abn	Reference Range	Units	Date/Time Completed
CREATININE	112		60-115	UMOL/L	2008-07-10
CREATININE	110		60-115	UMOL/L	2009-01-12
CREATININE	104		60-115	UMOL/L	2009-01-16
CREATININE	106		60-115	UMOL/L	2009-03-24
CREATININE	124	A	60-115	UMOL/L	2009-06-23
CREATININE	129	A	60-115	UMOL/L	2009-07-21
CREATININE	133	A	60-115	UMOL/L	2009-10-26
CREATININE	133	A	60-115	UMOL/L	2009-11-24
CREATININE	117	A	60-115	UMOL/L	2009-12-23
CREATININE	115		60-115	UMOL/L	2010-02-25
CREATININE	135	A	60-115	UMOL/L	2010-03-25
CREATININE	159	A	60-115	UMOL/L	2010-09-28
CREATININE	182	A	60-115	UMOL/L	2011-05-05
CREATININE	164	A	60-115	UMOL/L	2011-07-07
CREATININE	189	A	60-115	UMOL/L	2011-07-29
CREATININE	185	A	60-115	UMOL/L	2011-08-11
CREATININE	201	A	60-115	UMOL/L	2011-09-13
CREATININE	193	A	60-115	UMOL/L	2011-09-15

Close Print Plot

Done



# OSCAR Inbox: System Overview



# Electronic Inbox: Team Process Plan

- ✓ Lab review process
  - ✓ MRP
  - ✓ Residents
  - ✓ Nursing
  - ✓ Locum physicians
- ✓ Acknowledging labs defined
- ✓ Lab review follow-up and communications
- ✓ Labs ordered by Specialty Programs
- ✓ INR follow-ups
- ✓ Inbox coverage plans



# Electronic Inbox: Go Live Planning and Communication Strategy

- ✓ Ensure all physicians / NPs receiving e-labs ( assumption #1! )
- ✓ Familiarize all clinical staff with the "inbox", start to use the e-labs already streaming - Lifelabs and CML
- ✓ Adding Gamma-Dynacare to electronic labs being received
- ✓ Purging everyone's inbox, to be able to start prospectively
- ✓ Starting process-mapping on each team: Inbox management/ coverage/ forwarding rules
- ✓ In-services, hands-on training (depending on individual needs)



## Electronic Inbox: Go Live Planning and Communication Strategy

- ✓ Once supervisors comfortable, involving learners - all staff doctors adding full-time residents to their forwarding rules, so they can start receiving and managing labs from their supervisor's practice
- ✓ Training all support staff with scanning/uploading using the new improved process
- ✓ Committing to a date when we turn off the paper for CML/Lifelabs/Gamma and go LIVE with our electronic labs (Had been May 1!! )



## Electronic Inbox: Go Live Planning and Communication Strategy

- ✓ Other patient results/consults/radiology reports which we receive on paper NOT affected at this point
- ✓ Once this phase completed, we can start seeing exactly how much scanning/uploading is left
- ✓ Start next stage of process-mapping - scanning/uploading everything FIRST, with clinicians reviewing all patient results electronically
- ✓ Stay tuned!!



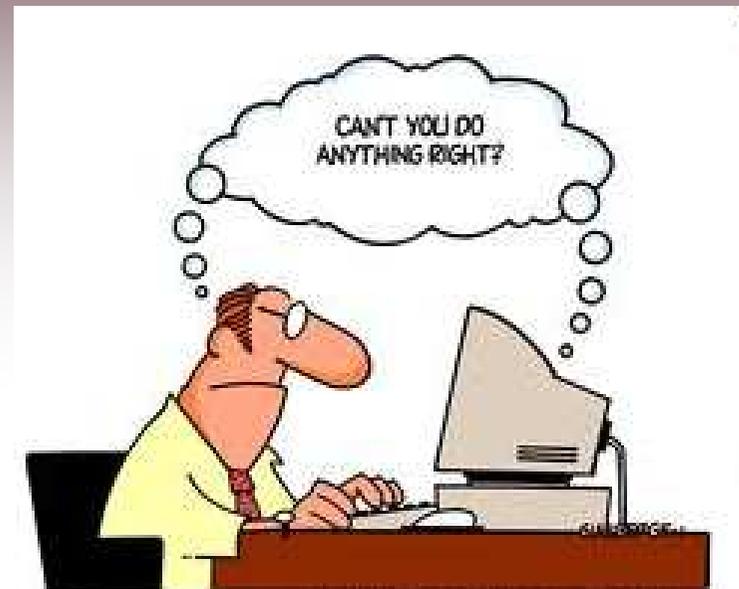
# Electronic Inbox: Quality Assurance Review

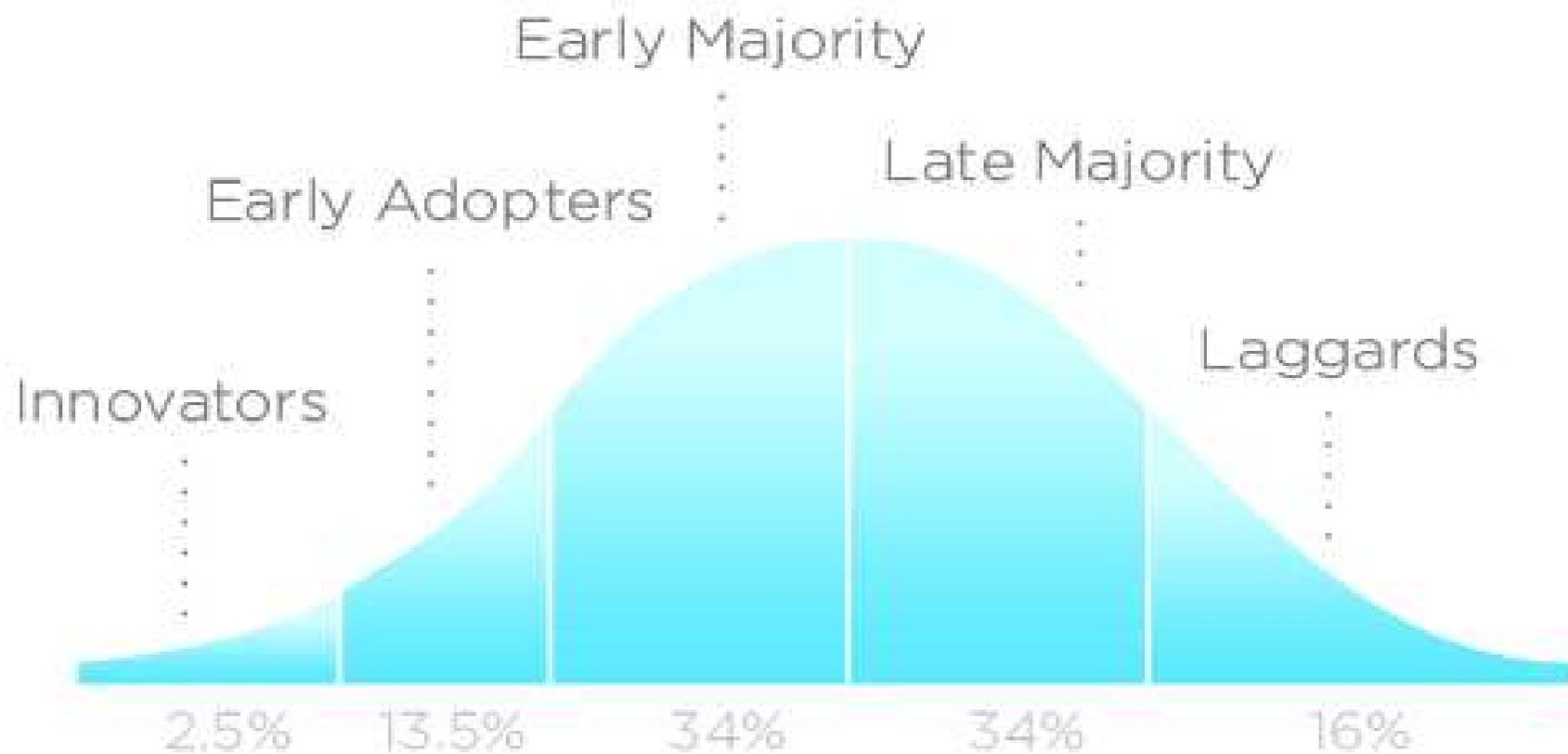
- ✓ All clinicians receiving e-labs?
- ✓ Updates required for going live, to ensure practice management/communication?
- ✓ All e-labs being received?



# Electronic Inbox: Lessons Learned

- ✓ Timeline ...
- ✓ Never assume ...
- ✓ The best allies ...
- ✓ An iterative loop ...





## **INNOVATION ADOPTION LIFECYCLE**

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TO BE COMPATIBLE WITH ITS NEW SOFTWARE."

# Thank You!

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