

**Quality Orders = Quality Data = Quality Process**

# **QUALITY LAB ORDERS START IN THE DOCTOR'S OFFICE**





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# WHAT WE'LL COVER TODAY

- **The Benefits Of Clean Lab Orders Today**
  - To the lab
  - To the clinic
- **Adoption Challenges In The Practice**
- **Emerging ACOs – How They'll Change Order Requirements**
- **Methods Of Adding Order Intelligence To The EMR (CPOE)**

# CPOE/ORDERS: LAB BENEFITS

- Lab Receives “Clean and Complete” Orders
  - Minimize call-backs to the Dr’s office  
(saves time, money, and doesn’t aggravate the Dr’s staff)
  - Reduces Medicare write-offs (validated for medical necessity)
  - Billing becomes automated (DFT directly to billing system)
  - Clinical information is complete  
(Fasting, source of specimen, collection method, ....)
  - Tests are sent to the right lab/rad
  - Results back to clinic are more reliable
- Happier Practice
  - After all, this is your primary customer

# THE ROI OF CLEAN ORDERS

- Single hospital lab
- 70,000 Accessions per month
- 20% of lab tests covered by Medicare

Total Yearly Savings	\$405,000
Reduced Medicare write-offs (assuming 3% are written off)	\$149,040
Fewer order errors	\$69,000
Reduced Medicare callbacks	\$44,160
Reduced IT maintenance of lab interfaces	\$4,800
Reduced data entry	\$138,000



# AN ROI WORKSHEET YOU CAN USE.....

- Plug in your lab's numbers
- Helps your practice customers see the value

Lab Savings Calculator for EMR-Link Lab Orders

Total lab orders per month

65000

% of lab orders covered by Medicare

20

Number of lab orders covered by Medicare

13000

Average hourly wage for lab staff

\$18

Lab Savings

Per month

Per year

Total dollars saved

\$14,700

\$363,600

Total hours saved

817

9800

How to Use

Fill in black values for your lab. Gray values are automatic.

			Amount of activity		Activity time		Minutes per month	Hours per month	Hours per Year	
Reduced data entry	% of lab orders that have to be hand-entered at accessioning	40	Number of hand-entered lab orders	26000	Minutes to enter one lab order	1	26000	433	5200	\$36,360
Fewer order errors	% data entry errors	5	Number of data entry errors	1300	Minutes to correct one error	2	2600	43	520	\$3,360
Reduced Medicare callbacks	% Medicare lab orders missing diagnosis requiring callback	10	Number of Medicare lab orders requiring callback	1300	Minutes for one clinic callback	12	15600	260	3120	\$56,160
Reduced IT maintenance of lab interfaces	Number of clinics with connectivity	20			Hours per month to support each clinic	4		80	360	\$17,280
Reduced Medicare writeoffs	% of Medicare lab requisitions written off due to missing diagnosis	3%	Number of Medicare insured reqs that are written off.	390	Avg cost of one lab req	\$40			Yearly savings from reduced Medicare write-offs	\$187,200

# CPOE/ORDERS: PRACTICE BENEFITS

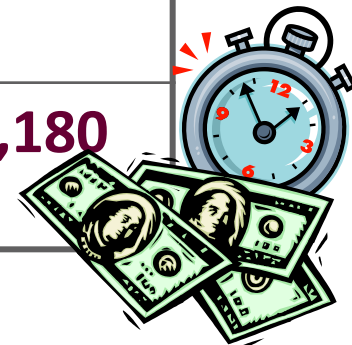
- Real-time ABN check: Reduced calls back to the clinic requesting justifying diagnoses
- No calls from lab-to-clinic asking for more patient or insurance information.
- “Almost” 100% chart match for the result
- Matches a result to the right ordering provider (instead of “responsible” provider)
- Reconciles (autocompletes) the EMR order status
- One ordering category, not one category per lab
- One workflow for multiple labs
- Auto splitting of the tests (based on test or specimen)
- Routing to the right lab (based on insurance rules)

# ANNUAL PRACTICE SAVINGS

- 10 physician group
- ~200 orders per physician



	Hours Saved	Dollars Saved
Medical Records (matching/routing errors)	150	\$1,500
Clinical Staff (result tracking and order status updates)	480	\$7,200
Billing-Reduction of Tracking down DX	540	\$6,480
<b>Total</b>	<b>1170</b>	<b>\$15,180</b>





# EMR ORDERS ADOPTION – IT’S TOUGH.....

- EMR orders are tough to adopt. It’s an industry wide challenge
- Industry average for full orders-results deployment and integration.....~15%
- Adoption is rising with Meaningful Use .....however,
  - Requirement is simple to record the order
  - Rules are not required .....yet
- With enough workflow benefits, clinics will adopt orders (but not all clinics)
- Many doctors ignore ABN checks
  - The alerts are disruptive
  - “It’s the lab’s problem, not mine”
- ACOs will put more pressure on order adoption



# About EMR Vendors

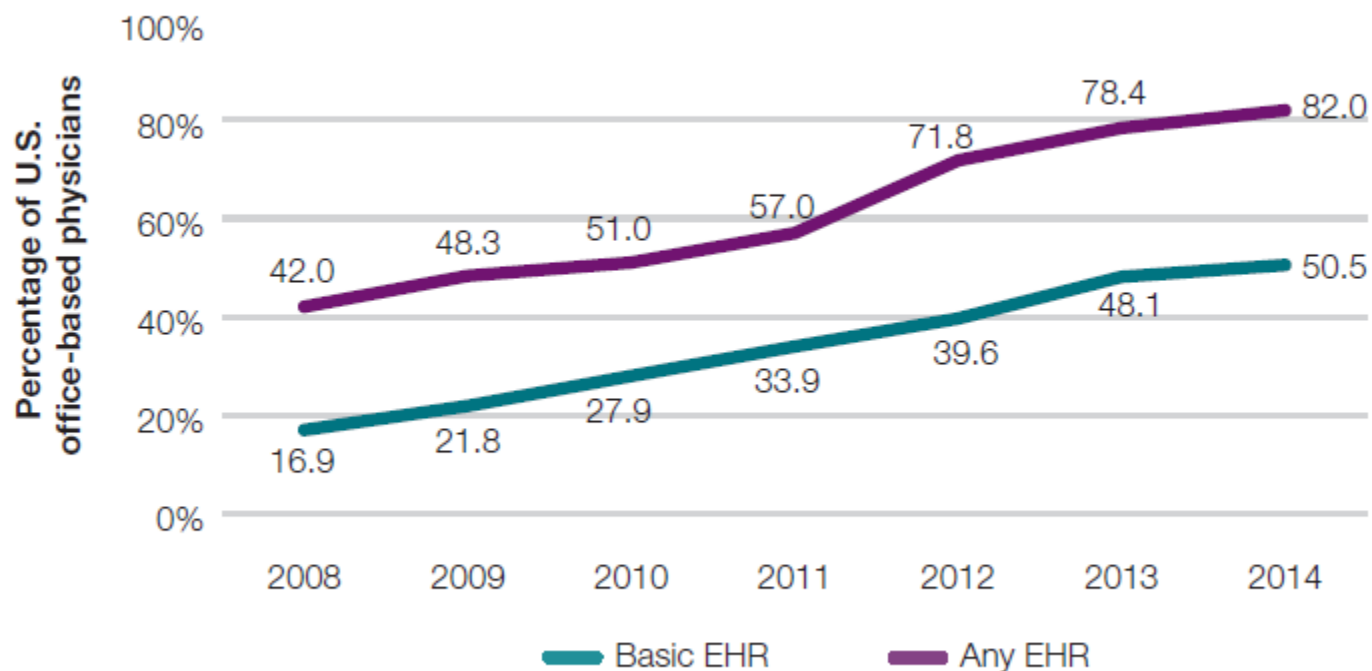
# WHO ARE THOSE EMR VENDORS?

EHR Vendor Market Share by Practice Size							
Rank	Vendor Name	Number of Physicians in Practice					
		1 to 3	4 to 10	11 to 25	26 to 40	41+	Overall
1	Epic Systems Corporation	9.1%	20.1%	32.5%	41.8%	53.7%	11.6%
2	eClinicalWorks	10.7%	8.6%	5.4%	3.8%	0.0%	10.2%
3	Allscripts	8.1%	11.1%	11.5%	8.7%	7.4%	8.7%
4	Practice Fusion	8.0%	1.3%	0.2%	0.0%	0.0%	6.7%
5	NextGen Healthcare	4.9%	8.2%	9.2%	2.7%	4.1%	5.5%
6	General Electric Healthcare IT	3.0%	6.1%	6.6%	11.0%	8.3%	3.6%
7	Cerner Corporation	3.0%	5.1%	8.6%	11.0%	8.3%	3.5%
8	Athenahealth, Inc	3.6%	2.2%	1.0%	0.4%	0.8%	3.3%
9	McKesson Provider Technologies	3.4%	2.5%	2.4%	5.7%	3.3%	3.2%
10	AmazingCharts.com, Inc.	2.8%	0.4%	0.0%	0.0%	0.0%	2.3%
11	Greenway Medical Technologies, Inc.	1.7%	3.4%	2.1%	0.0%	1.7%	2.0%
12	e-MDs, Inc.	1.9%	1.3%	0.4%	0.8%	0.0%	1.8%
13	Care360, Quest Diagnostics	2.1%	0.4%	0.2%	0.0%	0.0%	1.7%
14	Vitera	1.6%	2.1%	1.3%	0.0%	0.0%	1.7%
15	MEDITECH, Inc.	1.4%	2.3%	3.6%	4.6%	0.8%	1.6%
16	Office Ally	1.4%	0.2%	0.0%	0.0%	0.0%	1.2%
17	Community Computer Service Inc.	1.0%	1.5%	0.7%	0.0%	0.0%	1.1%
18	BioMedix Vascular Solutions	1.1%	0.3%	0.0%	0.0%	0.0%	0.9%
19	NexTech Systems, Inc.	1.0%	0.5%	0.0%	0.0%	0.0%	0.9%
20	AdvancedMD	1.0%	0.2%	0.1%	0.0%	0.0%	0.9%
21	All Other Vendors (499)	29.1%	22.2%	14.0%	9.5%	11.6%	27.6%
	<b>Grand Total:</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: SK&A, January 2015.

# EMR ADOPTION

Exhibit 5: **EHR Adoption Among U.S. Office-Based Physicians, 2008–2014**



Source: National Center for Health Statistics. *NAMCS EHR Supplement*, 2014.



## What makes an EMR easy to work with?

- Functionality
- Competent resources
- Ability to make customizations and do development
- Standard HL7 spec
- ORM/ORU support
- History of lab integration
- Clinic users willingness to adapt their workflow and use EMR-Link for:
  - Medical Necessity Checking
  - Insurance routing
  - AOE's
  - Complete/clean order (patient demographics, test codes, dx codes, auth provider, etc)
- Other....

# EMR Scorecard

A report card, for a sampling of some popular EMRs:

EMR Vendor	Results	Orders	Connect	Rules Routing	Med Nec Checking	Clean Orders	Notes
Amazing Charts	✓	✗	FC	✗	✗*	✗*	Hosted at the practice; EMR is pretty hands-off; limited functionality and no development; requires competent on-site support
Aprima	✓	✓	FC	✗	✗*	✗*	EMR resources are good; EMR has some customization options, but not willing to develop
Athena	✓	✗*	API	✗	✗*	✗*	They make it difficult to have any tight integration; our partnership is relatively weak
Centricity (GE)	✓	✓	API	✓	✓	✓	Tight workflow integration; we wish other EMR's would copy this model.
DigiChart	✓	✗	FC	✗	✗*	✗*	EMR resources are good; EMR has some customization options, no dev
eCW	✓	✓	VPN	✗	✗*	✗*	Their team is outsourced and communication is always a challenge
Greenway	✓	✓	VPN	✗	✗ ✓*	✗ ✓*	*When users go to EMR-Link, they gain the Medical Necessity feature
Sigmund Software*	✓	✓	API	✓	✓	✓	We have tight integration; we wish other EMR's would copy this model; their dev team is quick to respond and address issues

\*As a stand-alone, most EMR's DO NOT regularly perform AOE's, medical necessity checking, or ensure clean orders; if users incorporate EMR-Link's Order Review into their workflow, they get these features/capabilities!!

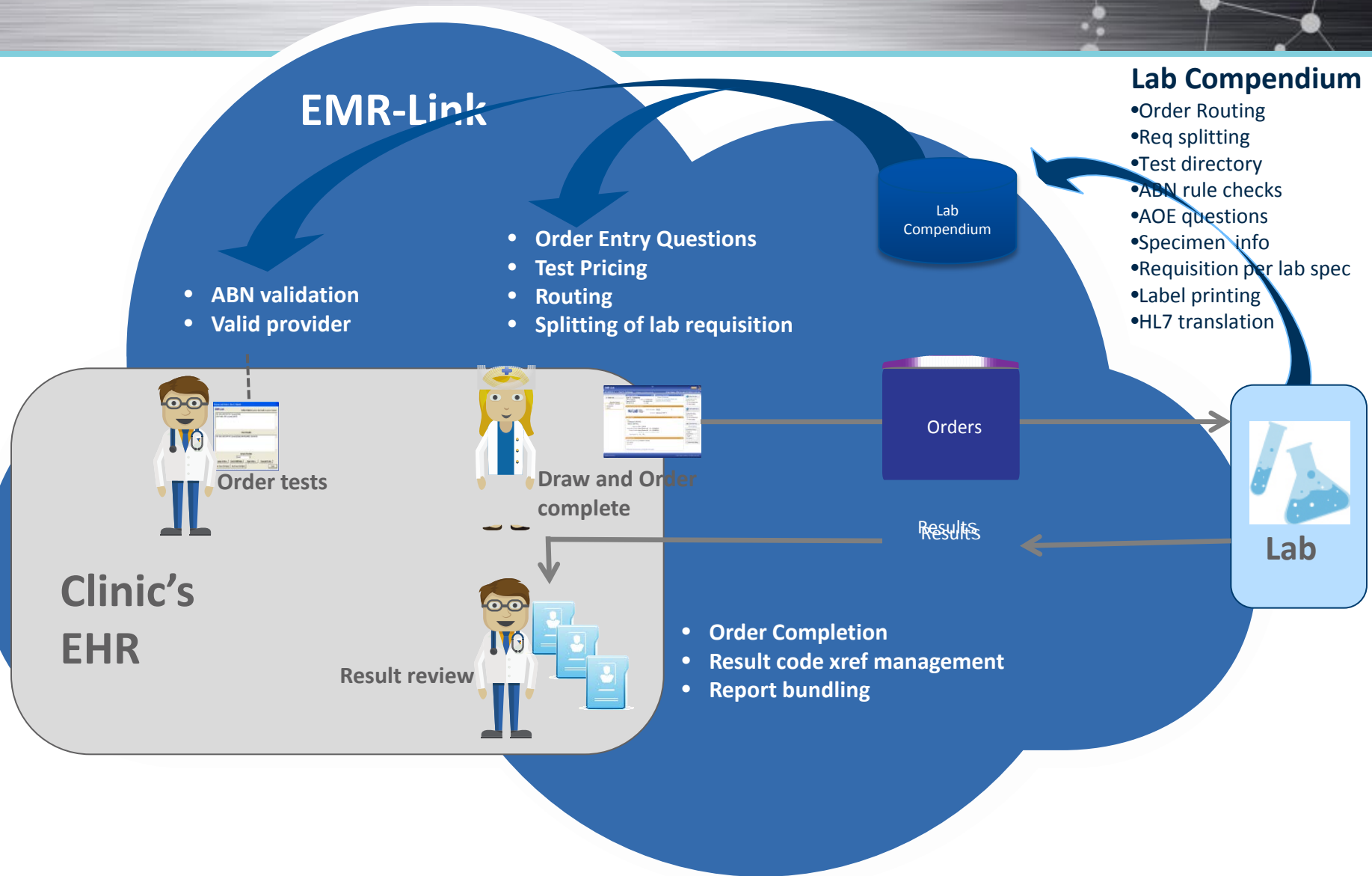
# LONG TERM CARE EMRS

Liaison provides order/result integration for 80% of all LTC facilities

LTC EMR Vendor	Results	Orders	Connect	PDFs / Images	Med Nec Checking	Clean Orders	Notes
Answers On Demand (AOD) – bought by MatrixCare	✓	✓	API	✓ / ✓	✗	✓	<ul style="list-style-type: none"> <li>Fully-functional orders &amp; results, lab &amp; rad</li> <li>Best scheduled/recurring orders</li> <li>Best results review features</li> <li>Projects move slowly due to continuing AOD development, complex insurance model, limited AOD implementation staff</li> </ul>
SigmaCare	✓	✗	VPN	✗ / ✗	✗	✗	<ul style="list-style-type: none"> <li>Results only for lab, one special-case rad</li> <li>Least user-friendly results user interface</li> <li>Results exported from EMR-Link via VPN</li> </ul>
PointClickCare	✓	✗	API	✓ / ✓	✗	✗	<ul style="list-style-type: none"> <li>Results only for lab &amp; rad</li> <li>Hundreds of facilities live with lab integration today</li> <li>Phase 1 orders solution in testing, pilot with Trident/DL delayed, not expecting mass roll-out due to limited functionality</li> </ul>

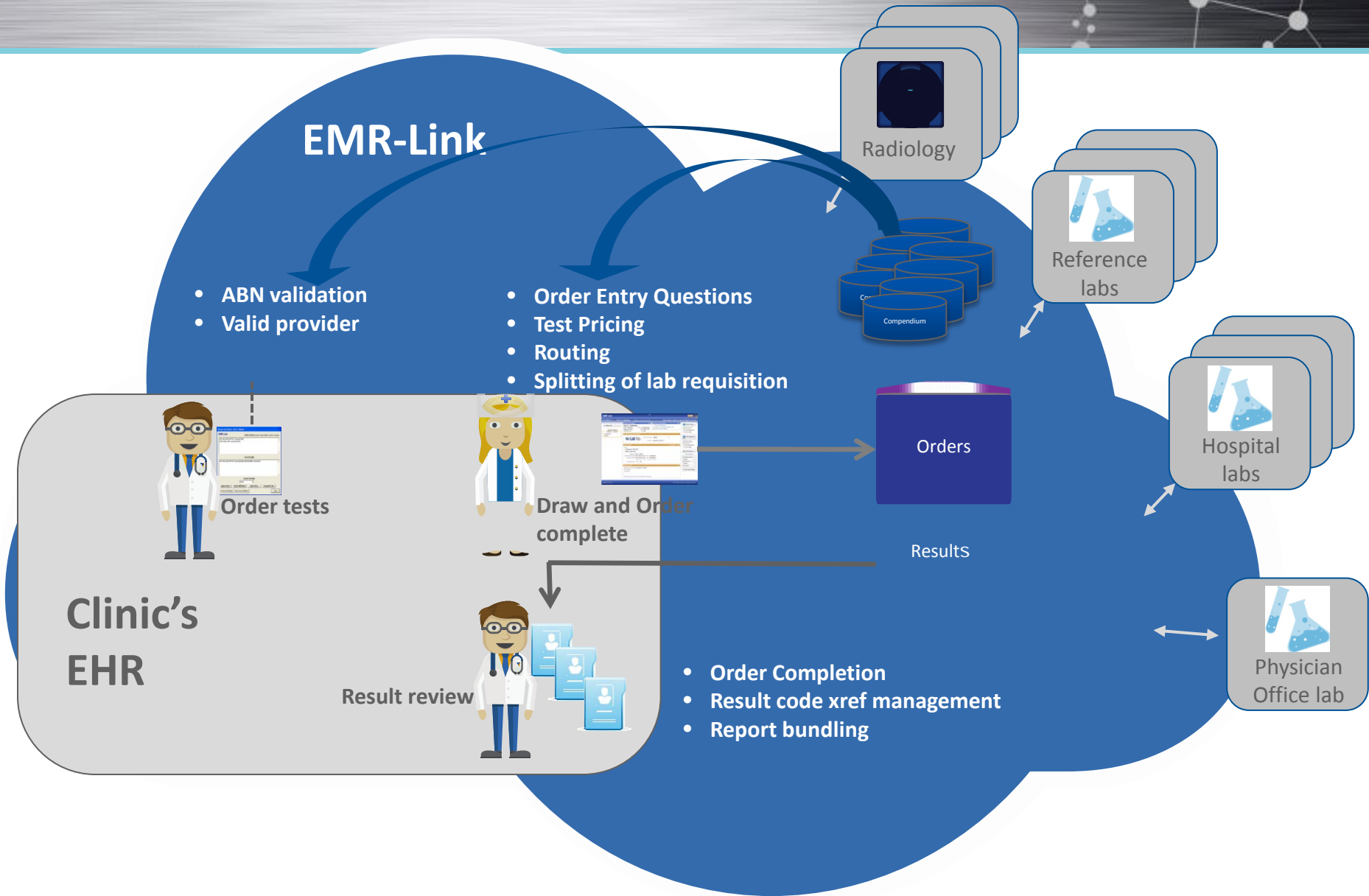
80% of the LTC facilities in the US use the same Liaison HUB for lab integration

# Bringing Lab Rules To The Practice Workflow





# Over 300 Labs and Imaging Centers



# Dealing With The Different EMR Types

## *Four Models For EHR Integration*

### 1. EMR with Workflow Integration:

- Best workflow for practice adoption
- Creates clean and complete orders for you, the lab
- Work in partnership with the EHR vendors
- More and more partners signing up for this

### 2. EMR Is Healthy

- EHR can create clean and complete orders and distribute results well.
- Only 3-4 in the industry do this well (EPIC, Allscripts, eCW, ....NextGen..)

### 3. Simple EMR

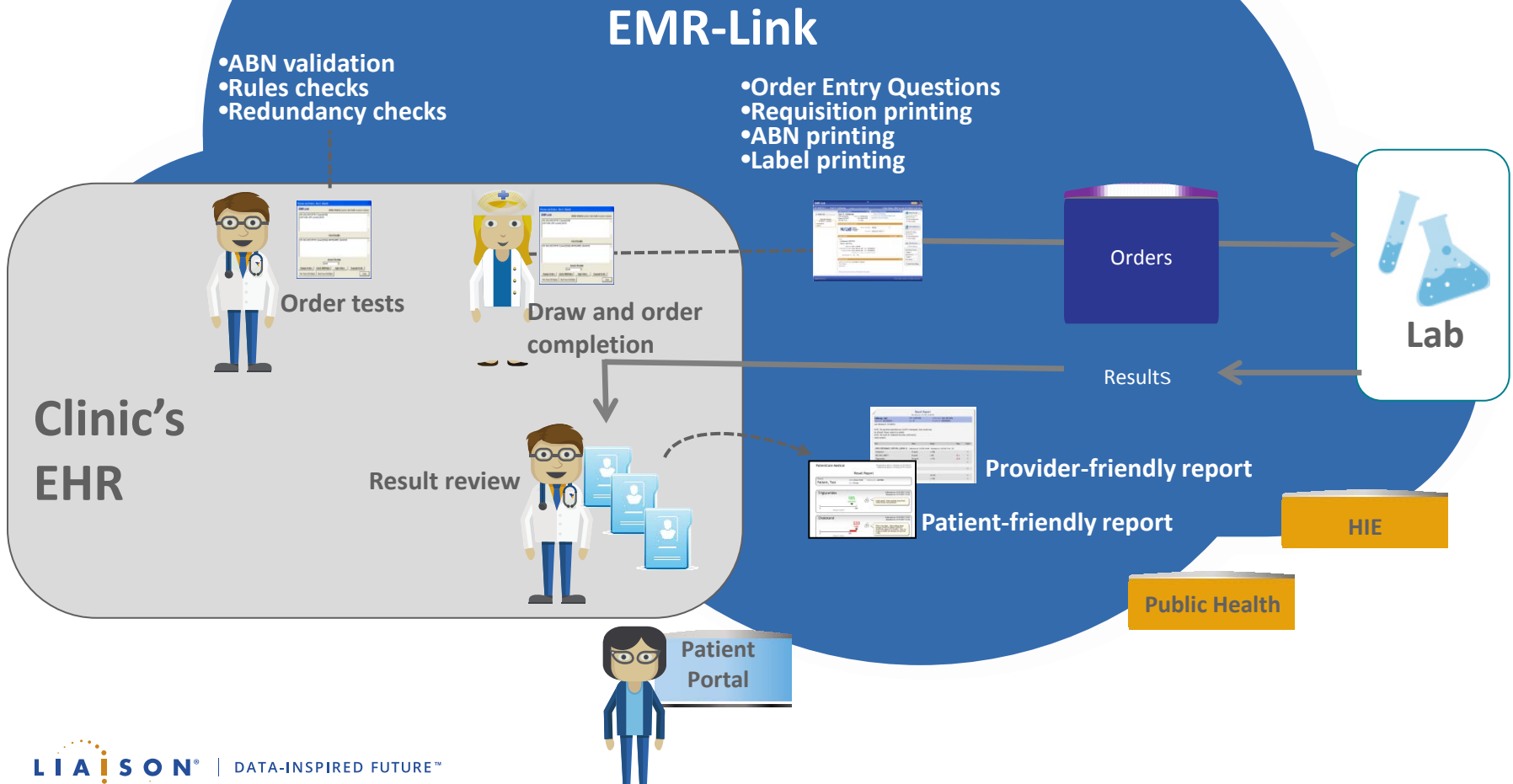
- Creates “simple” orders, but not clean and complete
- EMR-Link performs ABN checks, AOE queries, requisition printing

### 4. EMR missing CPOE functionality

- Will use EMR-Link CPOE orders
- Button may launch EMR-Link CPOE
- EMR-Link adds functionality (creates HTML, bundles results

# Model 1: EMR with Workflow Integration

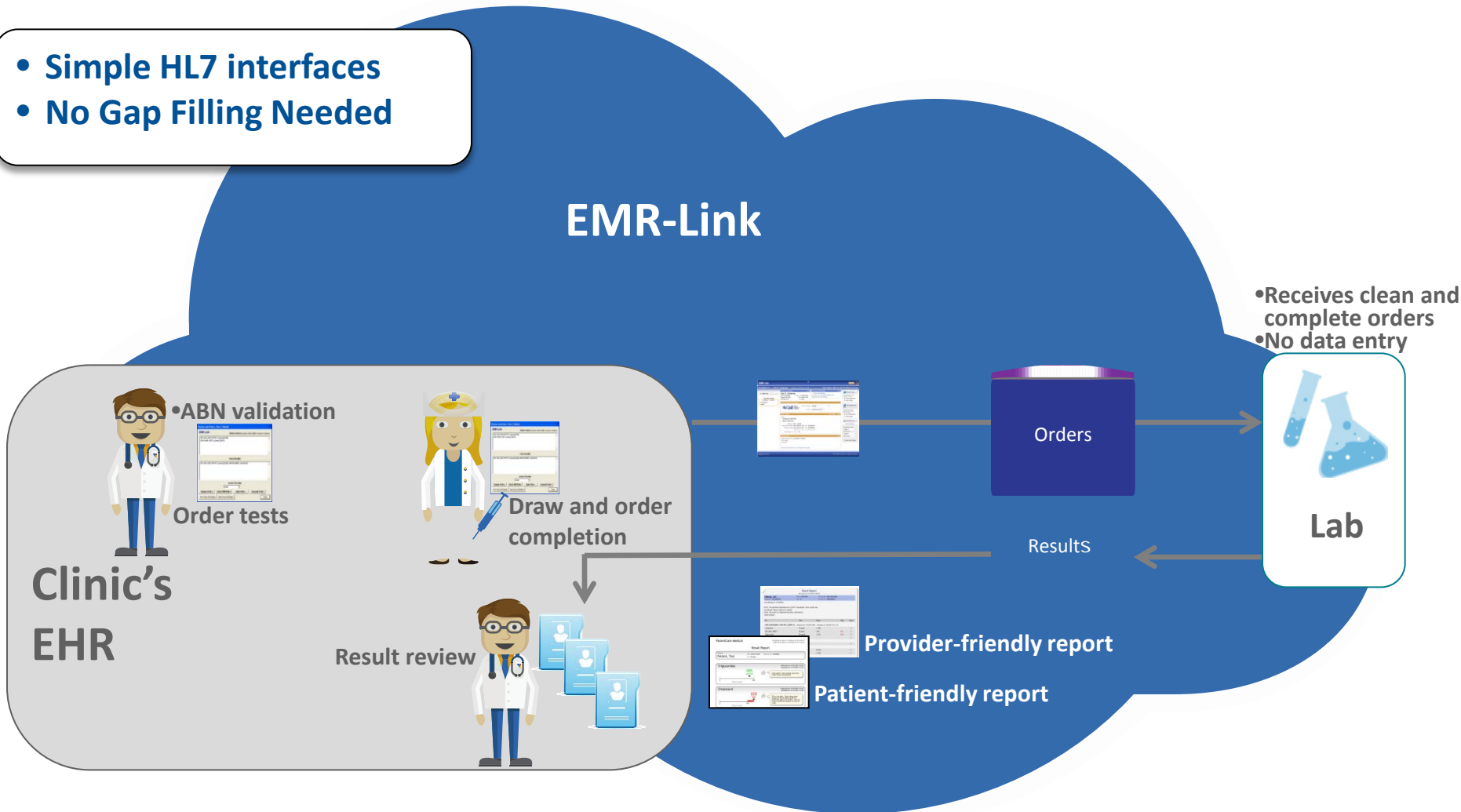
- ABN checked in the background
- One click to draw in EMR-Link
- Link to patient friendly lab reports



# Model 2: EMR with Complete Ordering Capability

- Simple HL7 interfaces
- No Gap Filling Needed

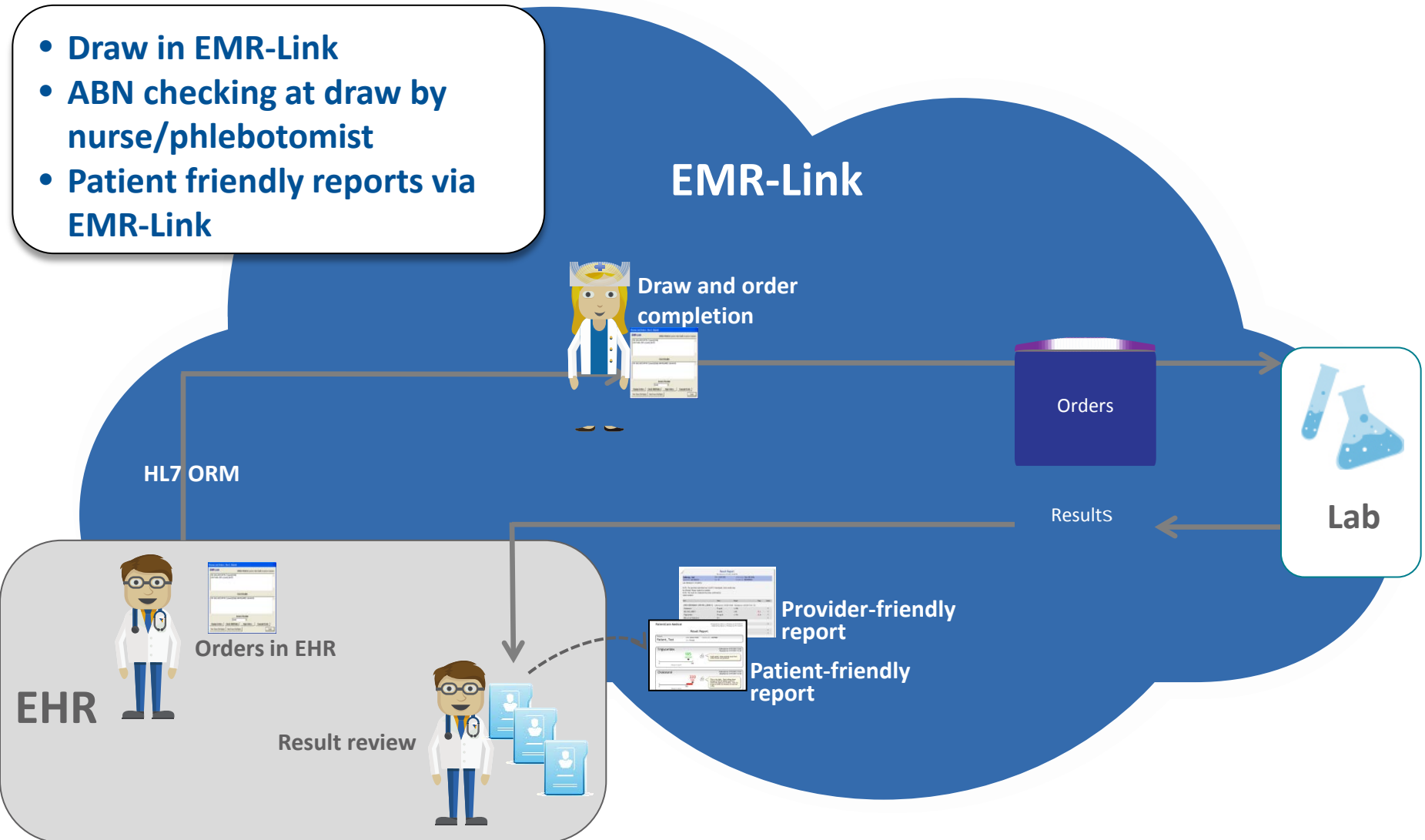
## EMR-Link



# Model 3:

## EMR that orders but lacks rules/AOEs

- Draw in EMR-Link
- ABN checking at draw by nurse/phlebotomist
- Patient friendly reports via EMR-Link



# Model 4: EMR Without an Orders Module

- Order in EMR-Link
- Draw in EMR-Link
- Patient friendly reports in the portal

EMR-Link



Orders entered in  
OrdersAnywhere



Draw and order  
completion



Orders

- Receives clean and complete orders
- No data entry



Lab

Results



EHR

Order  
Labs  
Button

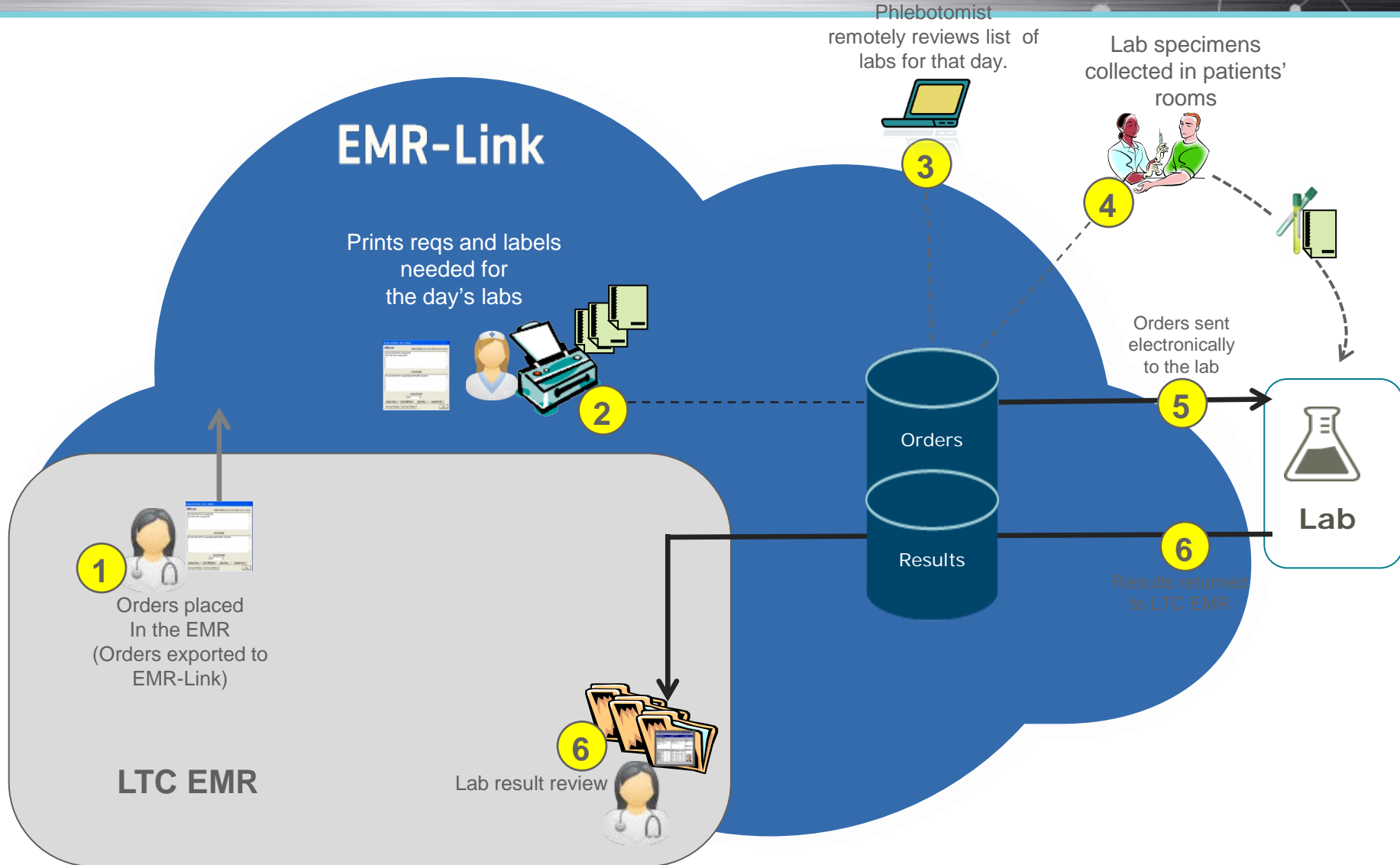
Result review



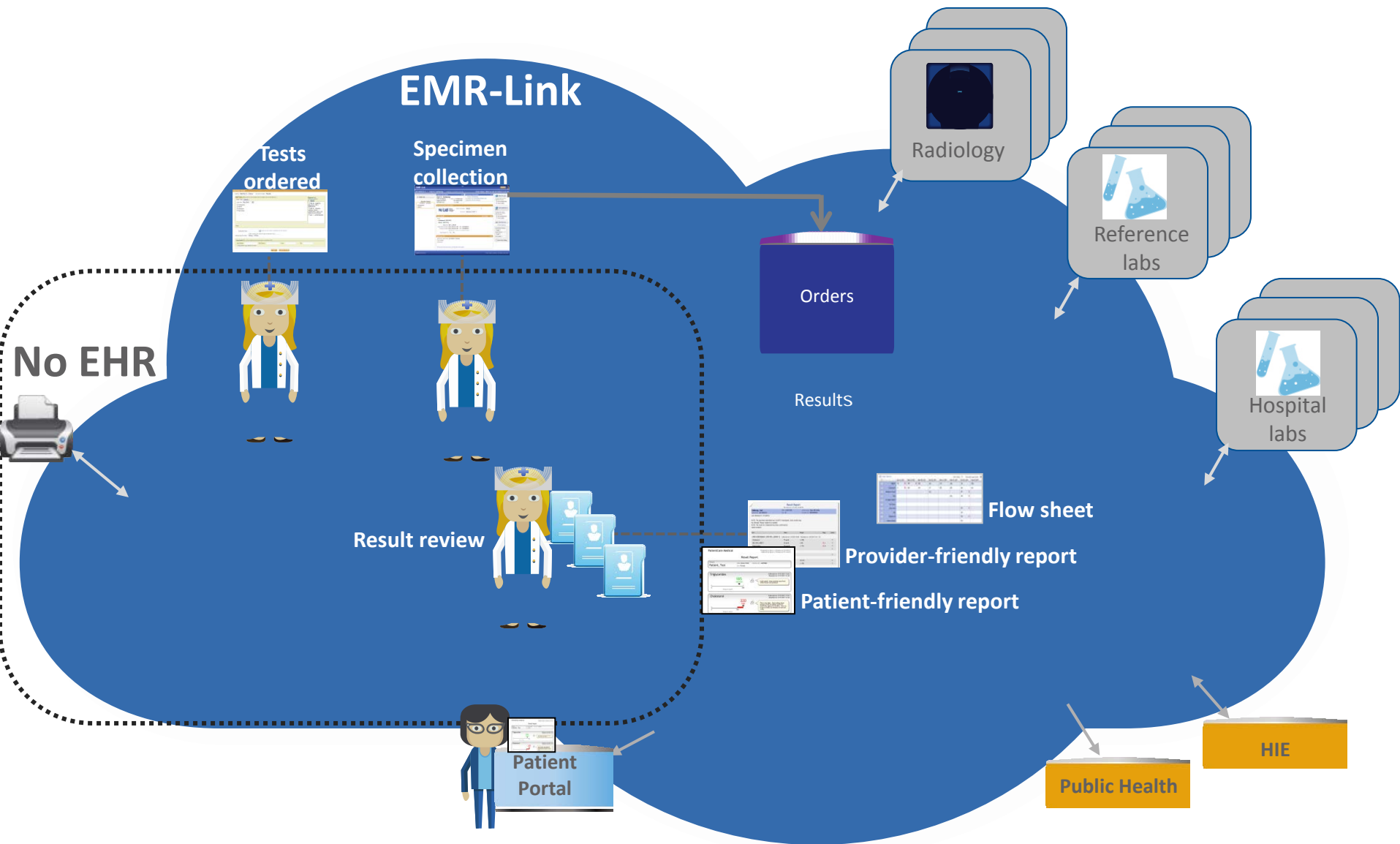
Provider-friendly  
report

Patient-friendly  
report

# Long Term Care EMR Workflow



# If no EMR..... A Portal Works





# THE ABN CHECK.....IDEALLY WITHIN THE EMR

- Dr. Stays In The EMR
- Check is in the background.
- “Zero” clicks

The screenshot shows an EMR interface with two main tabs: 'Assessment' and 'Plan'. The 'Assessment' tab is active, showing sections for 'Status of Existing Problems', 'New Problems', 'Impressions', and 'Preventive Care Reminders'. The 'Plan' tab is also visible, showing sections for 'New Prescriptions/Refills', 'Updated Medication List', 'New Orders', and 'Order Status'. A red circle highlights the 'Order Status' section, which displays a message: 'Pats clinic labs: Order checked: 001453 -- HgA1C -- ABN required due to diagnosis. (CPT: 83036)'. The 'Order Status' section also includes buttons for 'Send for Draw' and 'Standing Orders...'. The 'Updated Medication List' section shows a list of medications: MEVACOR TAB 40MG (LOVASTATIN) 1 po qd, NITROSTAT SUB 0.4MG (NITROGLYCERIN) 1 sl prn c/p, max of 3 in 15 min. The 'New Orders' section shows a list of orders: HgA1C [CPT-83036], Cholesterol [CPT-82465], and Urinalysis [CPT-81000]. The 'Order Status' section also includes a button for 'Enter Orders...'. The 'Internal Note' section is empty. The 'Disposition' field is at the bottom, with a dropdown menu and a 'Close' button.

# SPLITTING RULES FOR LABS

## Multiple tests ordered in The EMR

Orders: ☒ This update ☐ Open ☐ All Primary Coverage: MC (MC2205) [Set Coverage...](#)

!	Date	Description	Status	Diagnoses
	05/18/2016	HgA1C	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	Cholesterol	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	Pap Smear	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	CT ANGIO CHEST	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	Urinalysis	In Process	DIABETES MELLITUS, NONINSULIN D

Auto-splits into separate  
requisitions

5 tests -> 4 requisitions

Order List

Today's Orders

- #114346331 5/18/16  
Urinalysis WAITING
- #114346257 5/18/16  
CT ANGIO CHEST WAITING
- #114346256 5/18/16  
Pap Smear WAITING
- #114346255 5/18/16  
HgA1C WAITING  
Cholesterol WAITING

Messages

- This order has missing data for some required fields.  
**required** - indicates field required before using 'Send Specimen to NuLab' button.

Patient Information

**Bonnie E. Cramer**  
2104 SW Hall Street  
Beaverton, OR 97005  
503-643-9137  
Email:  
LOC: SOUTH

Patient ID: 142-  
TEST011  
DOB: 02/26/1919  
Sex: Female

Insurance Information

Primary: Medicare  
Guarantor: Bonnie E. Cramer

Service Provider Information

NuLab Clinical Laboratory Services

Service Provider: NuLab  
Account: test acct: 6677

Order Details

Tests:  
Pap Smear [009100]

# And Route To The Right Lab ...or Rad

Office Laboratory Services

CENTER FOR DIAGNOSTIC IMAGING  
CDI

NuLAB Clinical Laboratory Services

Office Laboratory Services

Order List

Today's Orders

#114346331 5/18/16

Urinalysis

WAITING

#114346257 5/18/16

CT ANGIO CHEST

WAITING

#114346256 5/18/16

Pap Smear

WAITING

#114346255 5/18/16

HgA1C

Cholesterol

WAITING

Messages

This order has missing data for some required fields.  
**required** - indicates field required before using 'Send Specimen to NuLab' button.

Patient Information

EDIT

Bonnie E. Cramer

2104 SW Hall Street  
Beaverton, OR 97005  
503-643-9137

Patient ID: 142-  
TEST011  
DOB: 02/26/1919  
Sex: Female

Email:  
LOC: SOUTH

Insurance Information

Primary: Medicare  
Guarantor: Bonnie E. Cramer

Service Provider Information

NuLAB Clinical Laboratory Services

Service Provider: NuLab  
Account: test acct: 6677

Order Details

REMAP

Tests:

Pap Smear [009100]

ICD-10 [ICD-9] Dx: E11.9 [250.00]

Authorizing Provider: Harry Winston MD ID: 4235498761

Copy Results To: Fax: ID:

Specimen Info

Collection Date/Time: Defaults to current date/time when 'Send Specimen to NuLab' butt

Tech Initials/ID:

Comments for Lab:

# ASK AT ORDER QUESTIONS

- Driven by the lab's order codes
- But if insurance rule chose a different lab

Orders: ☒ This update ☐ Open ☐ All Primary Coverage: MC (MC2205) [Set Coverage...](#)

!	Date	Description	Status	Diagnoses
	05/18/2016	HgA1C	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	Cholesterol	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	Pap Smear	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	CT ANGIO CHEST	In Process	DIABETES MELLITUS, NONINSULIN D
	05/18/2016	Urinalysis	In Process	DIABETES MELLITUS, NONINSULIN D



(Leave date or time blank to use current date/time)

Collection Date:  Time:  [< Set to Now](#)

Tech Initials/ID:

Comments for Lab:

## Questions for: Pap Smear [009100]

Collection Vial: \*

Gyn Source: \*

Collection Technique: \*

Hysterectomy: ☐ Yes ☐ No ☒ Not Answered

LMP: \*

Other:

Post Menopausal Bleeding: ☐ Yes ☐ No ☒ Not Answered

Pregnant: ☐ Yes ☐ No ☒ Not Answered



(Leave date or time blank to use current date/time)

Collection Date:  Time:  [< Set to Now](#)

Tech Initials/ID:

Comments for Lab:

## Questions for: Pap Smear [3525]

**SOURCE:**

**CLINICAL INFORMATION:**

**LMP:**

**PREV. PAP:**

**PREV. BX:**

[OK](#) [Cancel](#)

# THINGS WILL CHANGE WITH ACOS.....



- Bundles Payments; Per patient per disease type
- Entire ACO Coordinates To Control Costs  
(Physician offices, Labs, Imaging Centers,
- Larger patient co-pays
- Where Can Orders Help?
  - Reduce redundant testing
  - Apply ACO rules to high cost tests, similar to ABN checks
  - Test cost comparisons for the patient's copay decisions

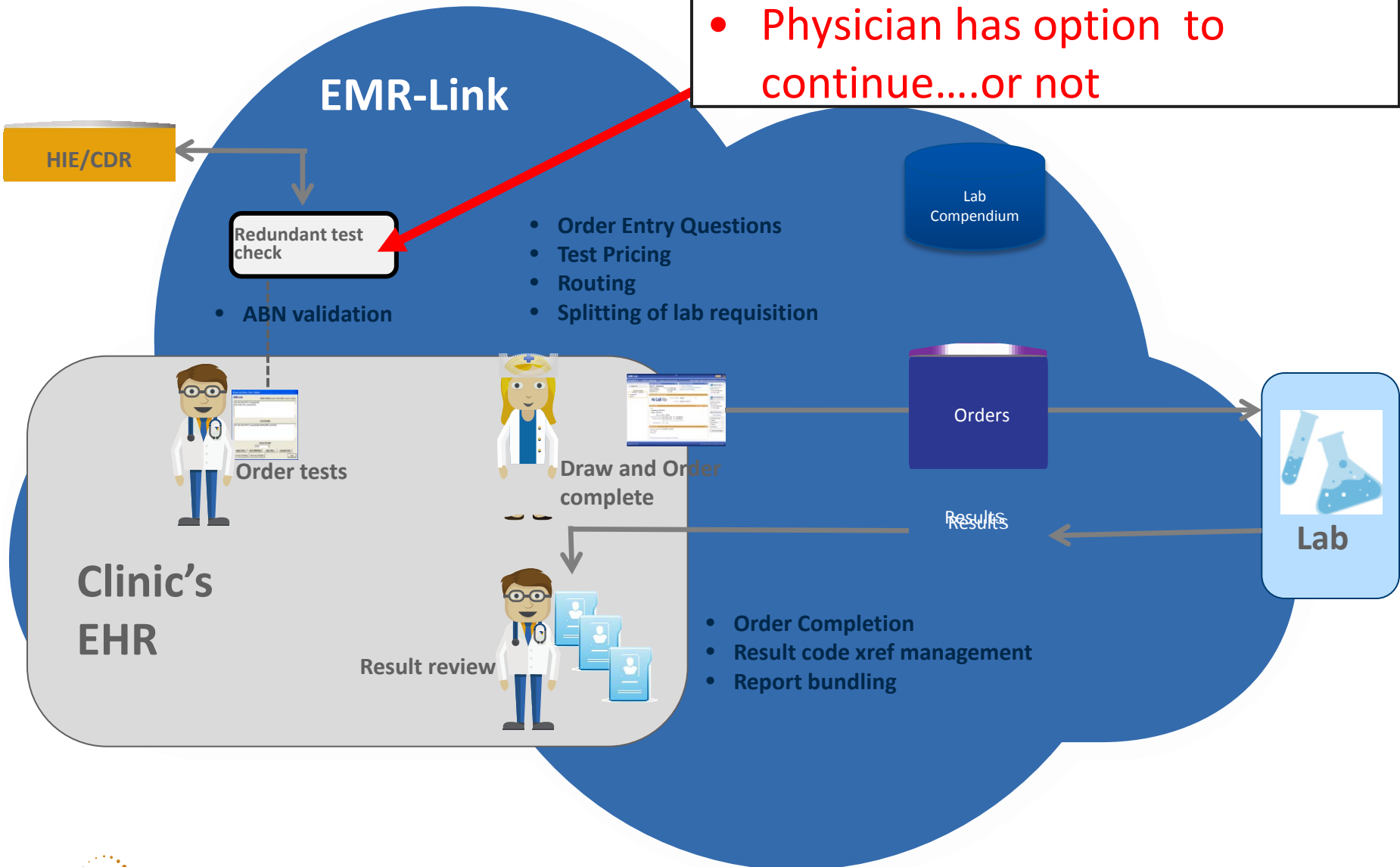
# ACOS: WILL WORK TO REDUCE REDUNDANT TESTS



- In some cases, up to 30% of testing is redundant
  - CHI Solutions Study, 2014.
- University of Mississippi Medical Center
  - With “duplicate test” alerting in their EMR, reduced test volume by 42%

# Checking For Redundant Tests

- Presented inside the EMR
- Physician has option to continue....or not



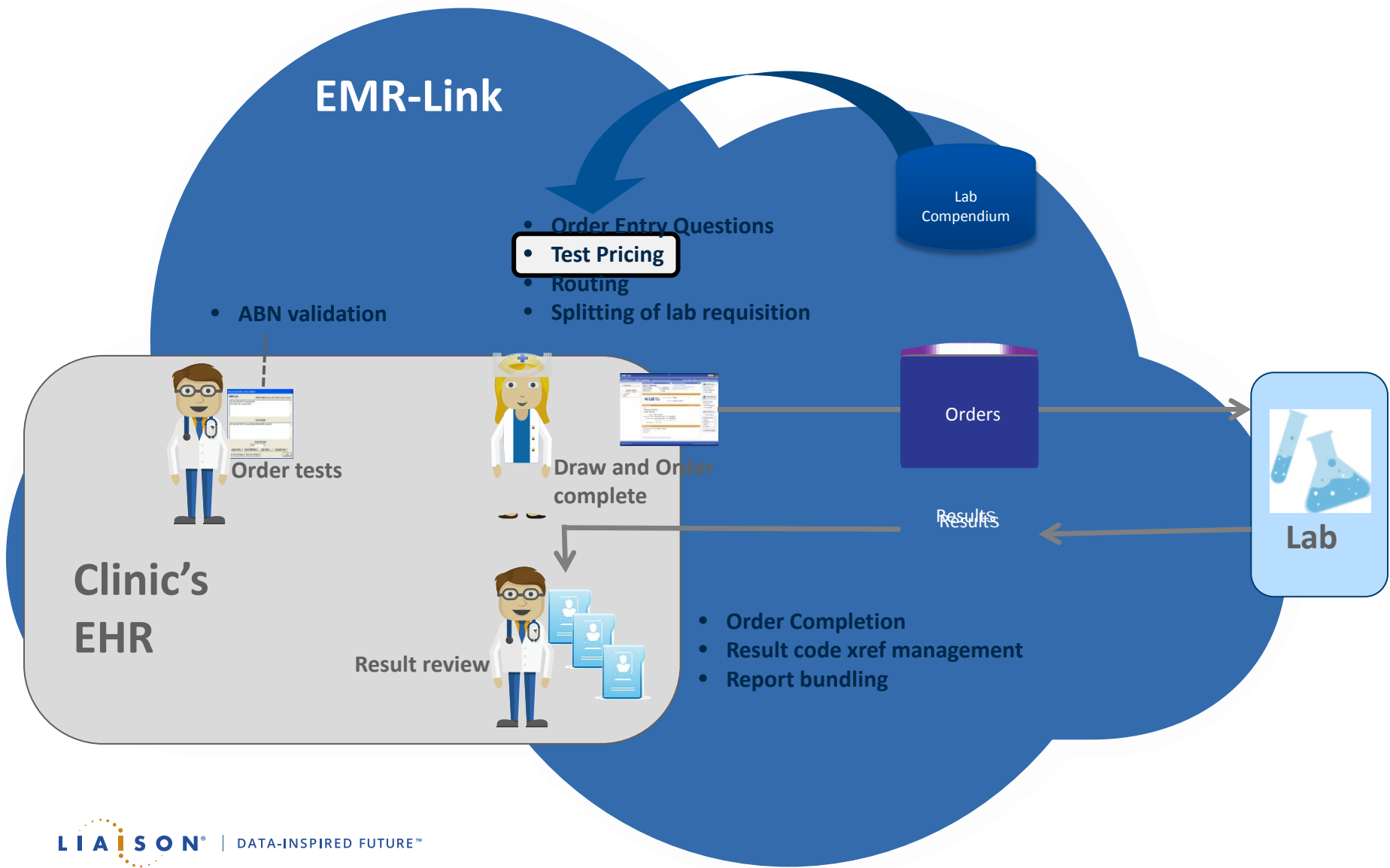
# REDUNDANT TEST CHECK



- Must have access to a full database of recent test result history
  - Wherever that patient was seen
  - Could be in a CDR, an HIE, an EMR, or a lab repository
- Result codes MUST be harmonized
- Patient IDs must be harmonized (an eMPI)
- Real time queries must be at the point of order consideration  
(\* In the EMR \*)



# ACOS: Will Have High Patient Deductibles



# GIVE PRICING OPTIONS TO THE PATIENT


\$34

or

\$48

Service Provider Information

Office Laboratory Services



Service Provider: 

Office Lab

Account: 

OFFICELAB: 989898

Order Details

REMAP TESTS

SPLIT ORDER

EDIT

Tests:

- HgA1C [041]

\*\* ABN required due to diagnosis (CPT: 83036) \$34
- Cholesterol [120]

check time, route to Marshfield if after 3:00pm

Total Cost Estimation: \$34


ICD-10 [ICD-9] Dx: I10 [401.1]

Authorizing Provider: Harry Winston MD ID: 4235498761

Copy Results To: Fax: ID:

Service Provider Information

NuLAB Clinical Laboratory Services



Service Provider: 

NuLab

Account: 

test acct: 6677

Order Details

REMAP TESTS

SPLIT ORDER

EDIT

Tests:

- HgA1C [001453]

\*\* ABN required due to diagnosis (CPT: 83036) \$48
- Cholesterol [247282]

check time, route to Marshfield if after 3:00pm

Total Cost Estimation: \$48

ABN Status: 

ABN Status required

ICD-10 [ICD-9] Dx: I10 [401.1]

Authorizing Provider: Harry Winston MD ID: 4235498761

Copy Results To: Fax: ID:

Specimen Info

EDIT

# SMART ORDERS CONCLUSION

- Orders benefit both the lab and the practice
- Orders are not being adopted in droves (but there are ways to improve adoption)
- Done right, orders have an ROI for the practice.
- ACOs will turn up the pressure

# THANK YOU!!

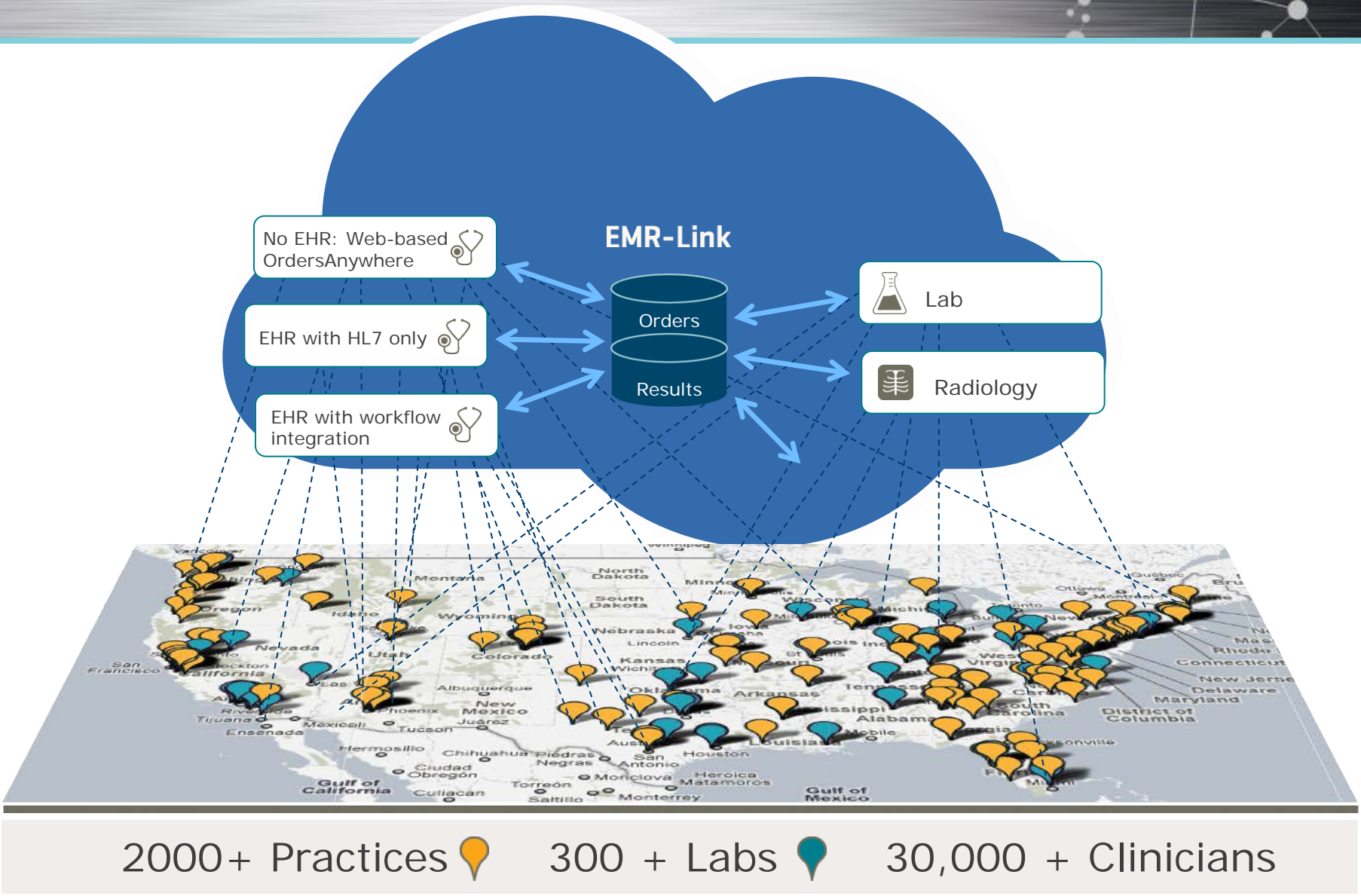


.....Questions?

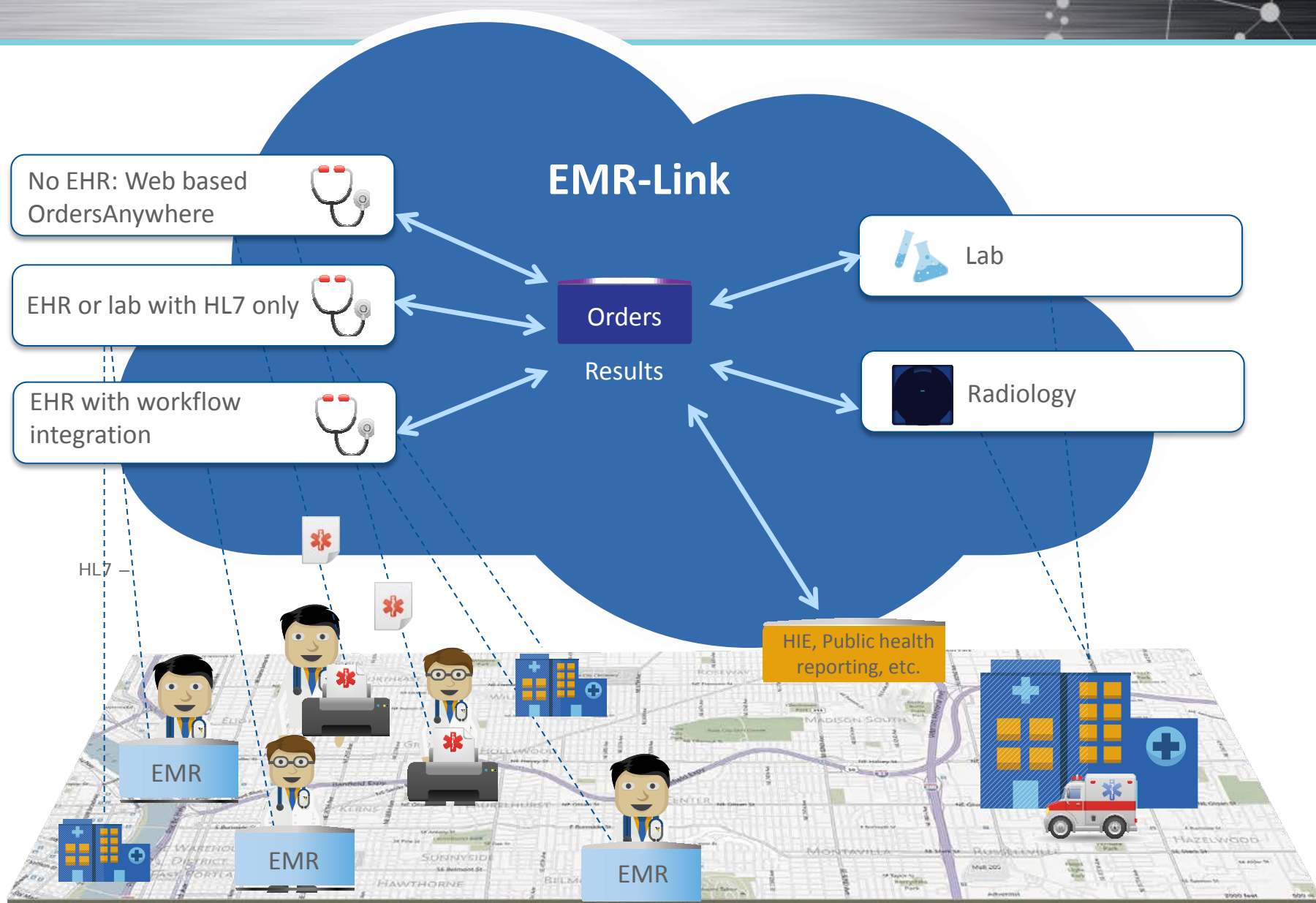
Pat Wolfram  
Liaison Healthcare

Director EMR-to-Lab Integration

# Liaison Works With ALL EMRs



# EMR-Link Hub Connects the Community



# MEANINGFUL USE 3 -- CPOE

Stage 3 is optional for EPs in 2017 and required by 2018.

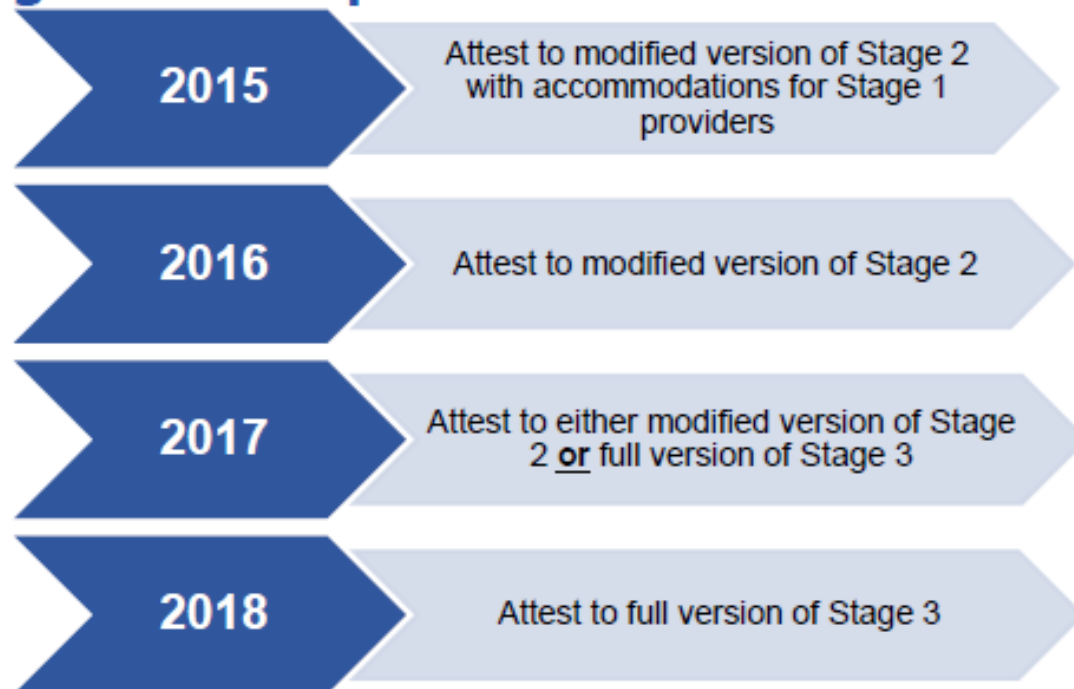
An EP must meet all three measures in order to meet this objective:

- Measure 1 – **More than 80%** of medication orders created by the EP during the EHR reporting period are recorded using CPOE;
- Measure 2 – **More than 60%** of laboratory orders created by the EP during the EHR reporting period are recorded using CPOE; and
- Measure 3 – **More than 60%** of diagnostic imaging orders created by the EP during the EHR reporting period are recorded using CPOE



# MEANINGFUL USE TIMELINE UPDATE

## Changes to Participation Timeline





# OUTLINE

Lab testing from the ambulatory environment:

The data that impacts lab operations

The ROI of receiving good data

- ROI in the lab
- ROI in the clinic - -why should you care
  - o Think of efficiency outside the walls of your lab. An efficient clinic becomes a loyal customer.
  - o If you provide this to the clinic, you gain the loyalty of that clinic.

Challenges with clean orders from the clinic.

The business imperatives aren't there. It's the lab that gets penalized if the order is not clean/complete.

However, you can make "using orders" a benefit to the clinic as well.

- Eliminates result matching problems  
(unsolicited results have an error rate of 3%)
- Reduces the lab phone calls
- "Can" synchronize the the medical records Orders tracking. Middle-ware can take care of this.
  - o Graphic of how 5 orders in the EMR equate to 2 reqs to the lab. When this is coordinated, then EMRs can auto-reconcile the

EMRs don't make this a priority.

Profile of the major EMRs out there.

- Some are strong at orders, others aren't.
- Show the summary
- Show the detailed categories.

Tools to make those EMRs more effective:

Interface engines

HIEs

Middle-ware

All middle-wares are not the same. Some lean to the