National Health Information Exchange and Interoperability Landscape

HIE & Interoperability Update

Health Information Exchange Activity

- Office-based Physicians & Hospitals
  - Overall Trends and Patterns
  - By Type of Data and Transitions
- Individuals
- State HIE Program Grantees

Interoperability and Future Measurement

Key Takeaways

Baseline prior to Stage 2 of Meaningful Use shows variation in exchange activity and capability:

- Physician exchange activity with outside providers was limited in 2013.

- Hospital exchange activity has grown significantly since 2008.

- Exchange of data during transitions is limited for hospitals and physicians, as evidenced by survey data and early Stage 2 MU data.

- A significant number of individuals experience gaps in information sharing though a significant portion of individuals who obtain access to their health information do view, download and share their data.

- State HIE grantees report increased capabilities for query-based and directed exchange, as well as increased ability to support exchange through the provision of key services.

Data show growth in exchange capability and activity, but also show there is substantial room for improvement. Interoperability measurement will be a key focus going forward.

Data Sources

- Meaningful Use data

- National survey data
    - National Electronic Health Record Survey
    - NCHS Workflow survey
    - AHA Health IT Supplement
    - ONC Survey of Clinical Laboratories

- Self-reported data by State HIE program grantees

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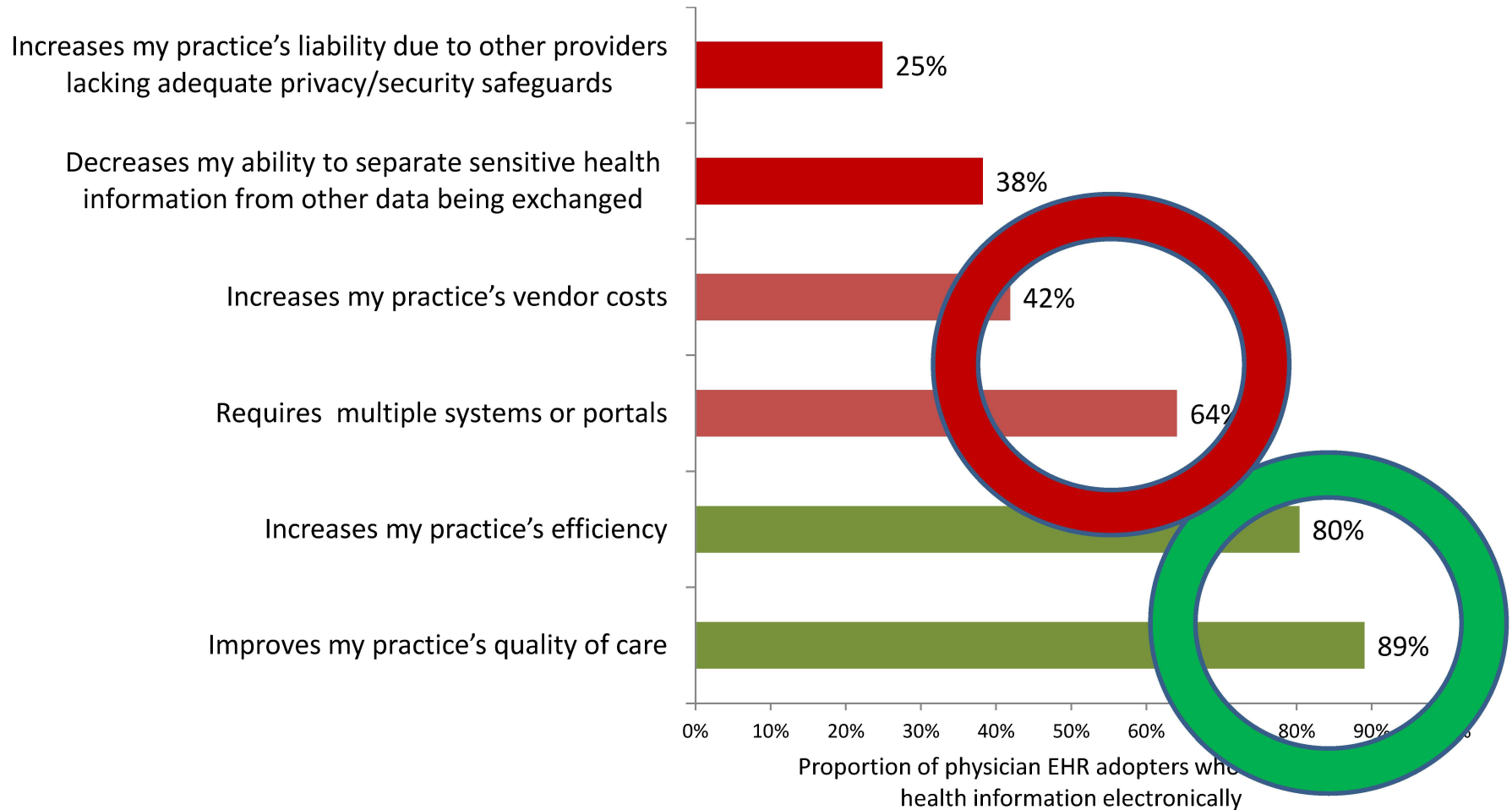- – Individuals
- – State HIE Program Grantees

Interoperability and Future Measurement

Prior to Stage 2 Meaningful Use, 4 in 10 physicians electronically exchange- however outside exchange is limited

ONC analysis of 2013 National Electronic Health Records Survey: Furukawa M. et al Health Affairs, Aug, 2014
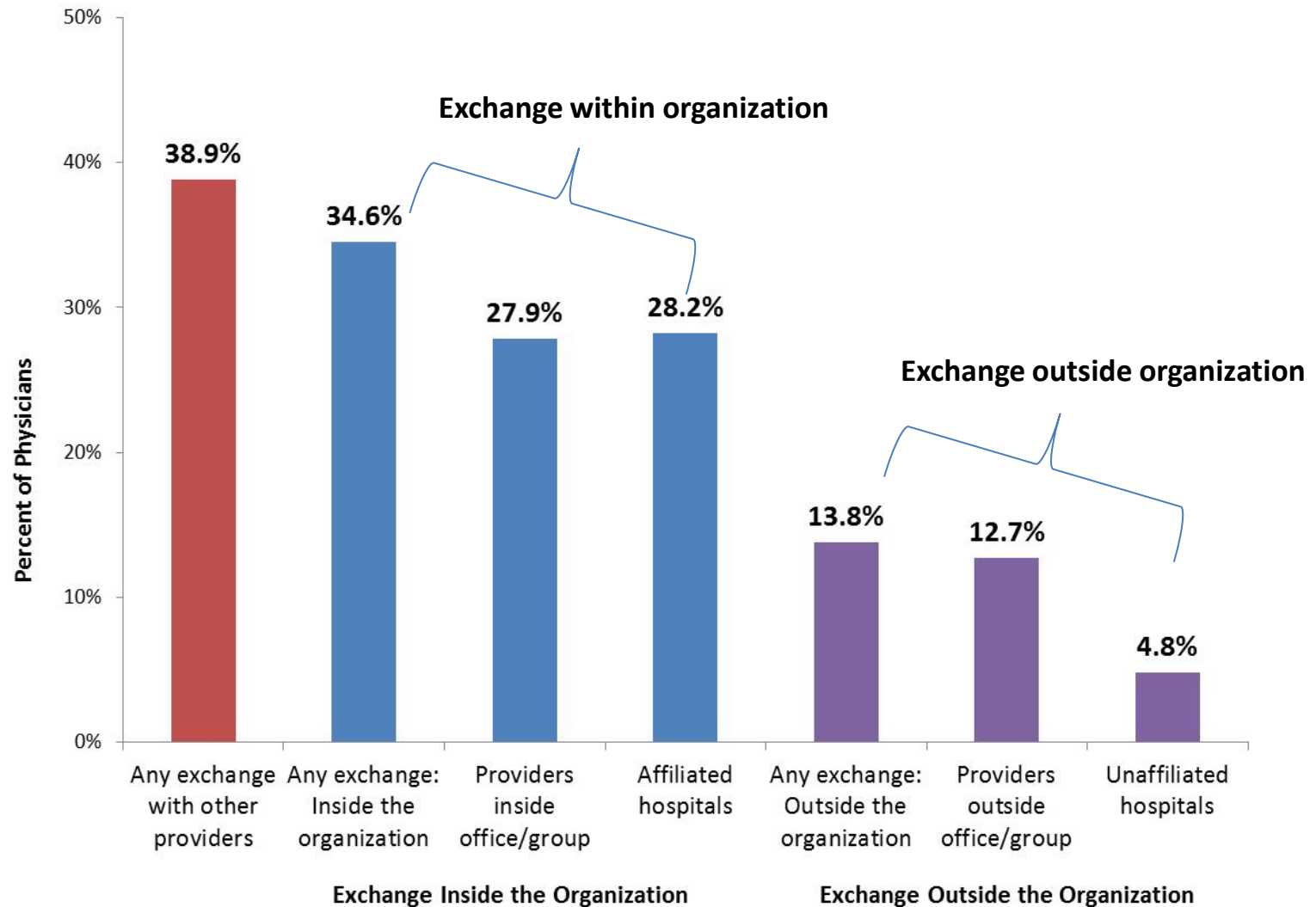
Majority of physicians who electronically exchange data with other providers report quality and efficiency benefits

Increases my practice's liability due to other providers lacking adequate privacy/security safeguards — 25%

Decreases my ability to separate sensitive health information from other data being exchanged — 38%

Increases my practice's vendor costs — 42%

Requires multiple systems or portals — 64%

Increases my practice's efficiency — 80%

Improves my practice's quality of care — 89%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90%

Proportion of physician EHR adopters who ... health information electronically

Hospital exchange with outside providers has grown significantly since 2008

Percent of non-federal acute care hospitals that electronically exchanged laboratory results, radiology reports, clinical care summaries, or medication lists with outside providers and hospitals: 2008-2013
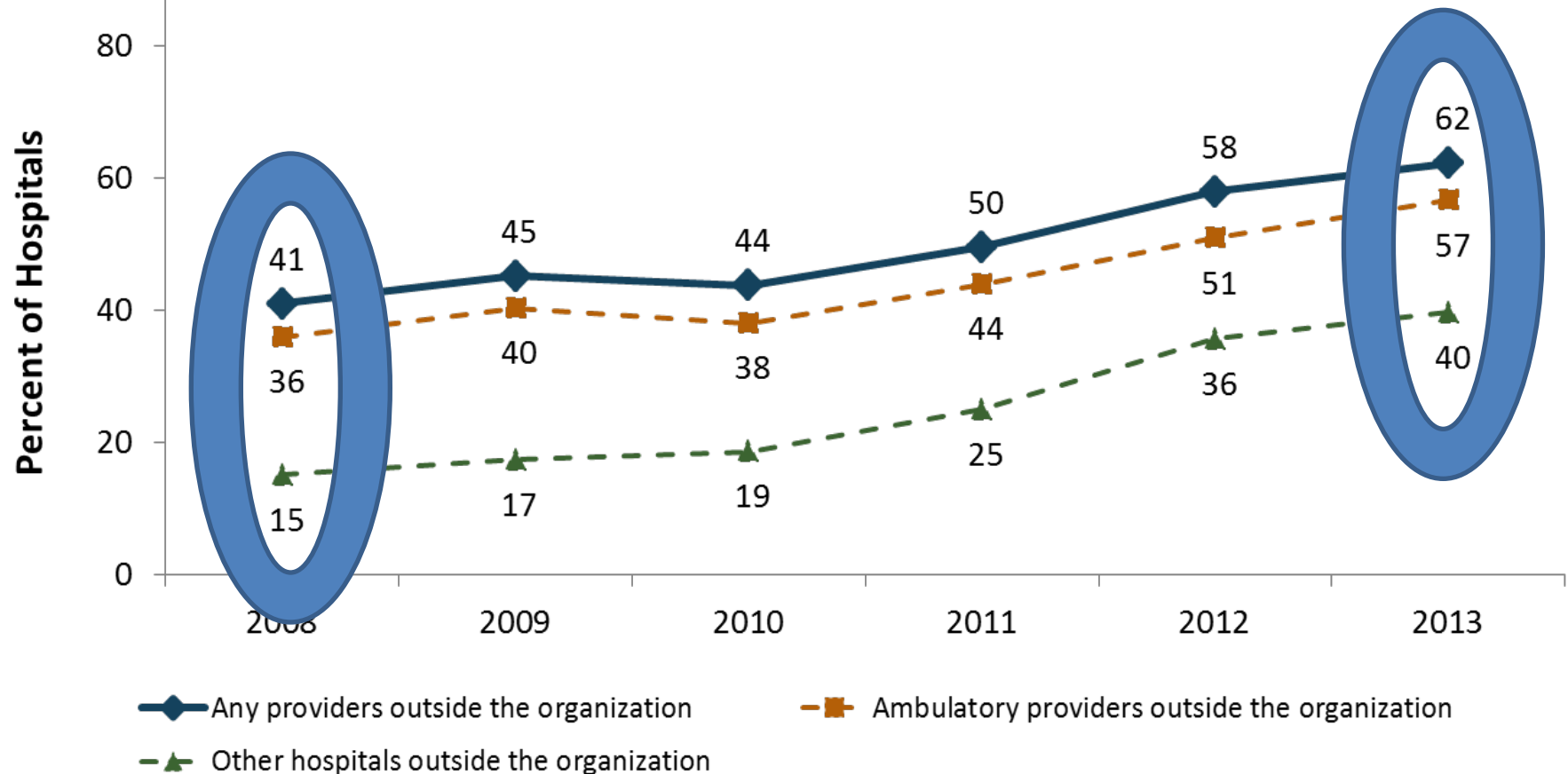
Any providers outside the organization: 41, 45, 44, 50, 58, 62

Ambulatory providers outside the organization: 36, 40, 38, 44, 51, 57

Other hospitals outside the organization: 15, 17, 19, 25, 36, 40

Years: 2008, 2009, 2010, 2011, 2012, 2013

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Prior to Stage 2, 40-50% of hospitals had the capability to query and send secure messages

51% able to query patient health information electronically

41% able to send and receive secure messages containing patient health information to and from external sources

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Baseline prior to Stage 2 indicates electronic exchange of different types of data was limited, including during transitions

In 2013, about one-third of physicians exchange different types of data
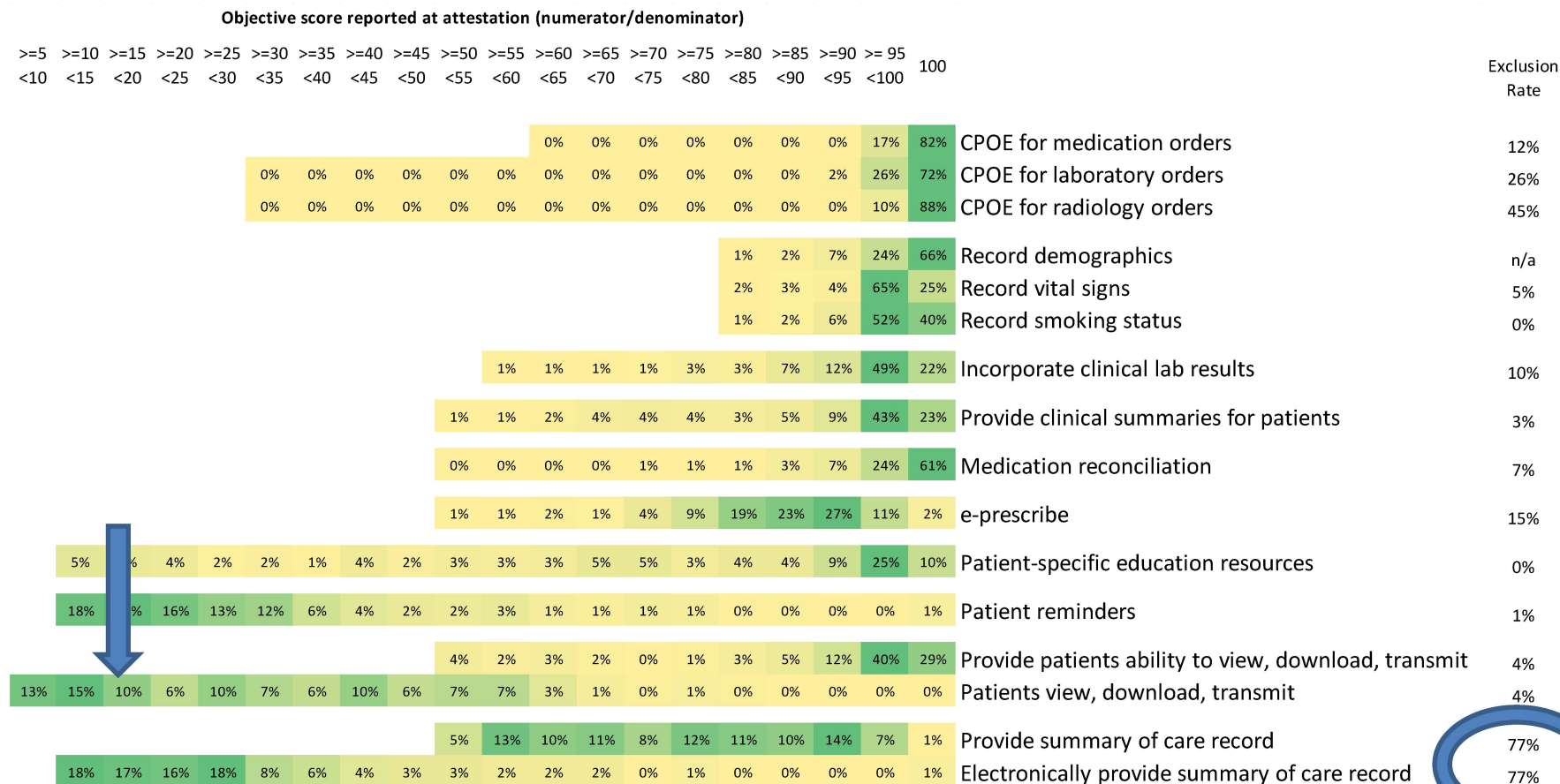
- Lab results: 36%
- Imaging reports: 34%
- Problem lists: 33%
- Medication lists: 34%
- Med allergy lists: 34%

In 2012, 5 in 10 receive discharge summaries routinely, but only 25% receive it electronically
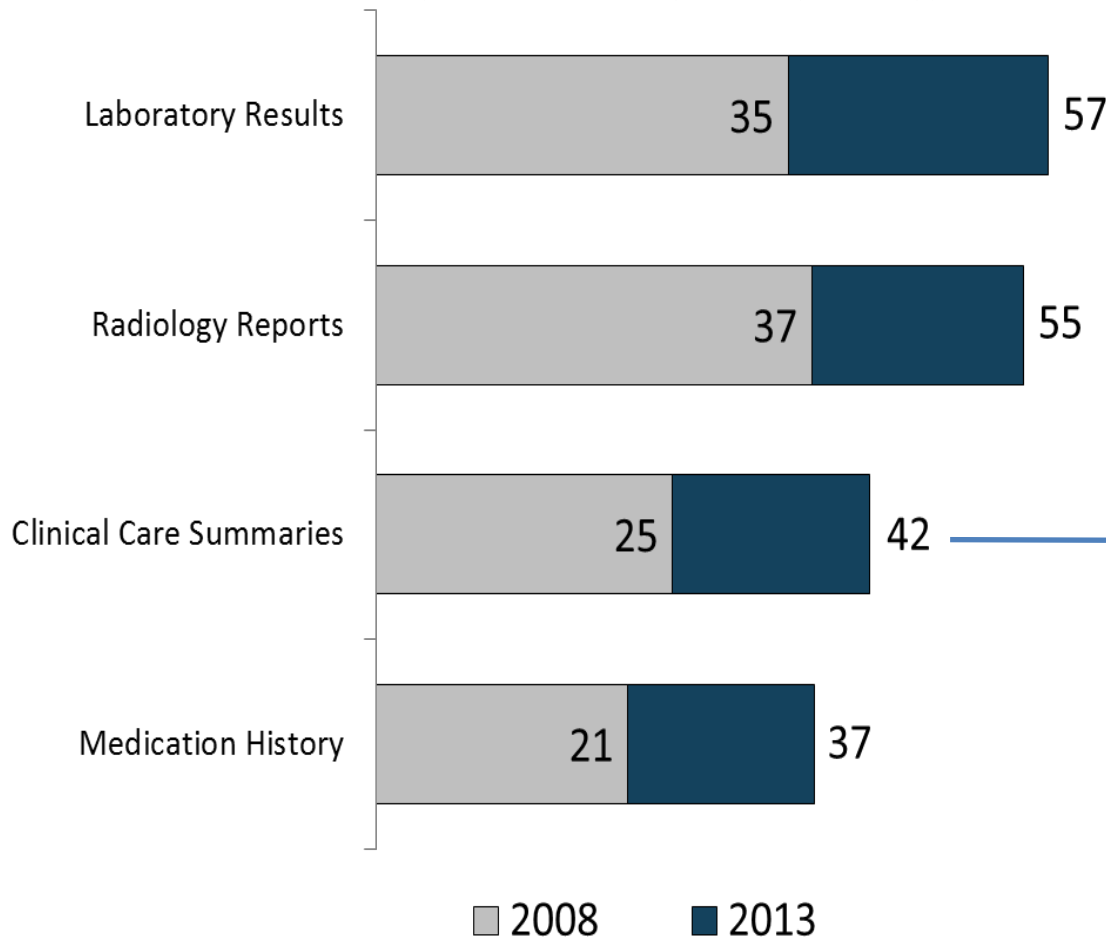
Objective score reported at attestation (numerator/denominator)

≥5 <10	≥10 <15	≥15 <20	≥20 <25	≥25 <30	≥30 <35	≥35 <40	≥40 <45	≥45 <50	≥50 <55	≥55 <60	≥60 <65	≥65 <70	≥70 <75	≥75 <80	≥80 <85	≥85 <90	≥90 <95	≥95 <100	100	Measure	Exclusion Rate
											0%	0%	0%	0%	0%	0%	0%	17%	82%	CPOE for medication orders	12%
					0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	26%	CPOE for laboratory orders	26%
					0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	88%	CPOE for radiology orders	45%
															1%	2%	7%	24%	66%	Record demographics	n/a
															2%	3%	4%	65%	25%	Record vital signs	5%
															1%	2%	6%	52%	40%	Record smoking status	0%
										1%	1%	1%	1%	3%	3%	7%	12%	49%	22%	Incorporate clinical lab results	10%
									1%	1%	2%	4%	4%	4%	3%	5%	9%	43%	23%	Provide clinical summaries for patients	3%
									0%	0%	0%	0%	1%	1%	1%	3%	7%	24%	61%	Medication reconciliation	7%
									1%	1%	2%	1%	4%	9%	19%	23%	27%	11%	2%	e-prescribe	15%
5%	—%	4%	2%	2%	1%	4%	2%	3%	3%	3%	5%	5%	3%	4%	4%	9%	25%	10%		Patient-specific education resources	0%
18%	—%	16%	13%	12%	6%	4%	2%	2%	3%	1%	1%	1%	1%	0%	0%	0%	0%	1%		Patient reminders	1%
									4%	2%	3%	2%	0%	1%	3%	5%	12%	40%	29%	Provide patients ability to view, download, transmit	4%
13%	15%	10%	6%	10%	7%	6%	10%	6%	7%	7%	3%	1%	0%	1%	0%	0%	0%	0%	0%	Patients view, download, transmit	4%
									5%	13%	10%	11%	8%	12%	11%	10%	14%	7%	1%	Provide summary of care record	77%
18%	17%	16%	18%	8%	6%	4%	3%	3%	2%	2%	2%	0%	1%	0%	0%	0%	0%	1%		Electronically provide summary of care record	77%

Based on 474 eligible professionals attesting as of May 30, 2014

Figures reflect 474 Medicare eligible professionals who attested to Stage 2 as of May 31, 2014. Distributions are based on professionals that reported on the objective; exclusion rate is the percent of attesting professionals who claimed an exclusion for the objective.

Prior to Stage 2, hospital exchange with outside providers varied by type of data

Percent of non-federal acute care hospitals that electronically exchanged data with outside providers or hospitals, by data type: 2008-2013

Data type	2008	2013
Laboratory Results	35	57
Radiology Reports	37	55
Clinical Care Summaries	25	42
Medication History	21	37

Legend: ☐ 2008 ■ 2013

> ➢ **70% of hospitals reported they had the *capability* to send care summaries in a structured format (CCR, CDA, or CCD)**
>
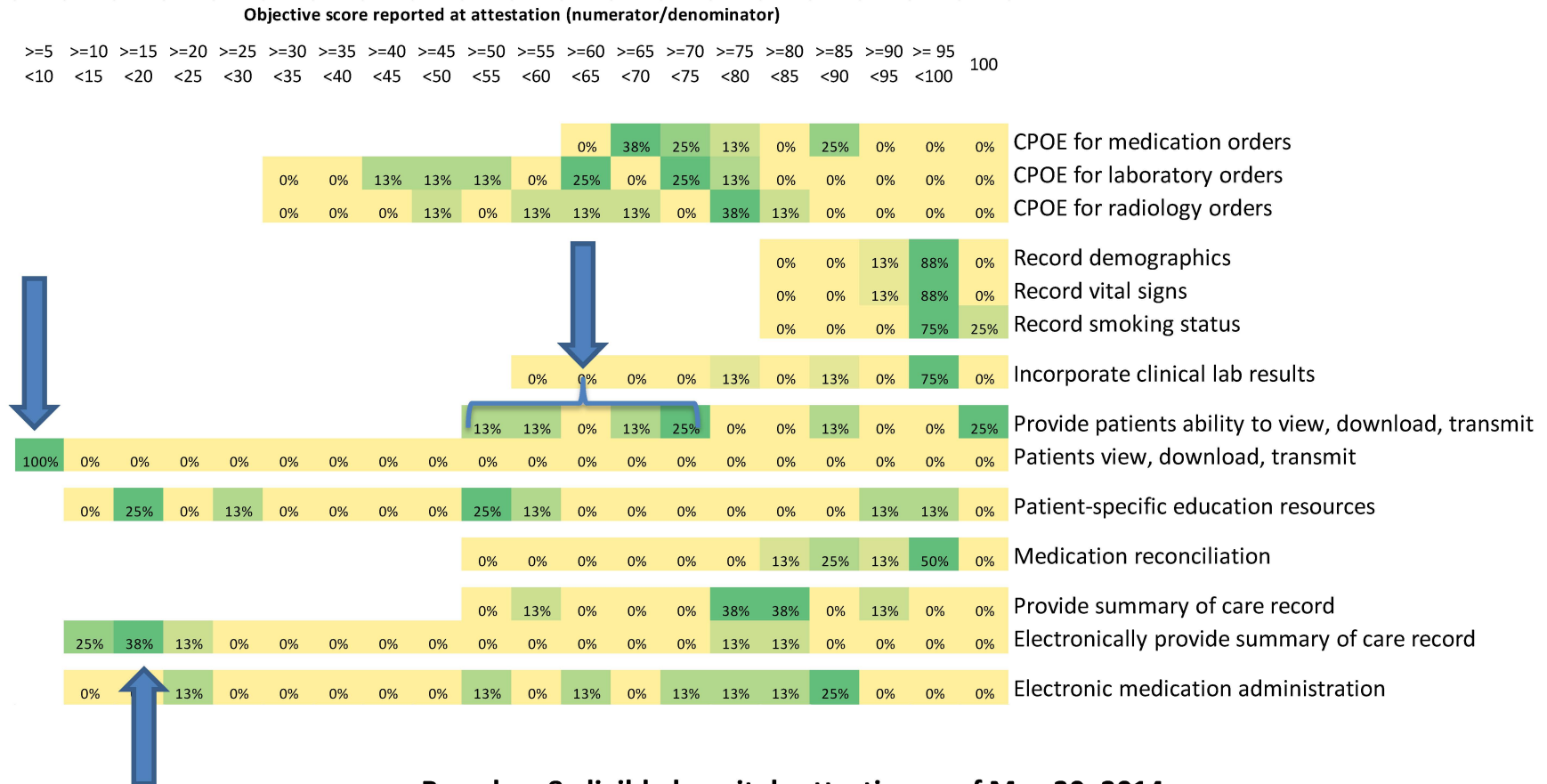> ➢ **49% of hospitals reported they had the *capability* to send care summaries to an outside organization using a different EHR**

SOURCE: Swain M, Charles D, Furukawa MF. "Health Information Exchange among U.S. Non-federal Acute Care Hospitals: 2008-2013." *ONC Data Brief, no 17* , May 2014.
ONC. 'U.S. Hospital Adoption of Computerized Capabilities to Meet Meaningful Use Stage 2 Objectives,' Health IT Quick-Stat, no. 23. April 2014
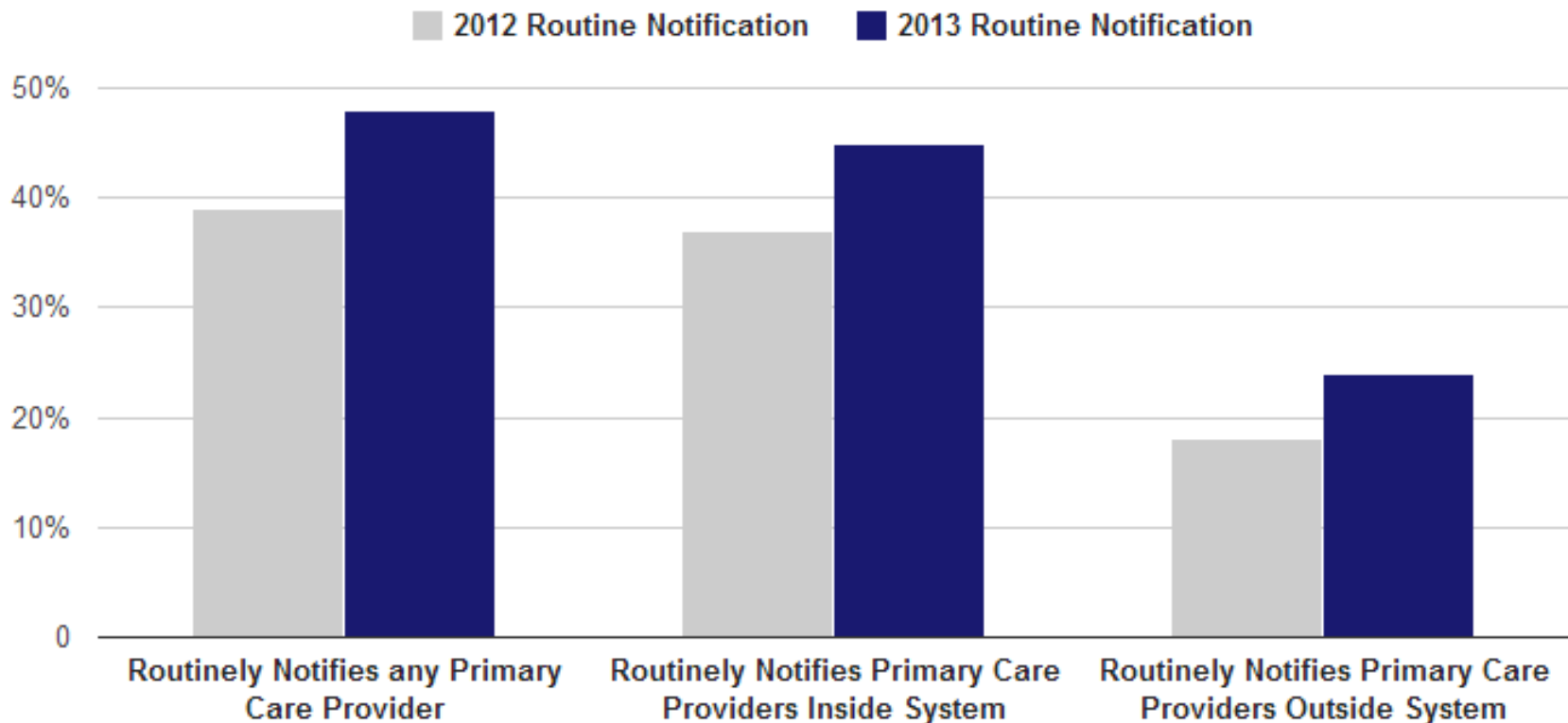ONC analysis of AHA Health IT supplement, 2013.

Lower performance on summary of care and VDT Stage 2 core measures compared to other Stage 2 Measures, as of May 2014

Distribution of core objective scores among eligible hospitals attesting to Stage 2 as of May 2014

Objective score reported at attestation (numerator/denominator)

Measure	>=5 <10	>=10 <15	>=15 <20	>=20 <25	>=25 <30	>=30 <35	>=35 <40	>=40 <45	>=45 <50	>=50 <55	>=55 <60	>=60 <65	>=65 <70	>=70 <75	>=75 <80	>=80 <85	>=85 <90	>=90 <95	>=95 <100	100
CPOE for medication orders												0%	38%	25%	13%	0%	25%	0%	0%	0%
CPOE for laboratory orders					0%	0%	13%	13%	13%	0%	25%	0%	25%	13%	0%	0%	0%	0%	0%	
CPOE for radiology orders					0%	0%	0%	13%	0%	13%	13%	13%	0%	38%	13%	0%	0%	0%	0%	
Record demographics															0%	0%	13%	88%	0%	
Record vital signs															0%	0%	13%	88%	0%	
Record smoking status															0%	0%	0%	75%	25%	
Incorporate clinical lab results										0%	0%	0%	0%	13%	0%	13%	0%	75%	0%	
Provide patients ability to view, download, transmit										13%	13%	0%	13%	25%	0%	0%	13%	0%	0%	25%
Patients view, download, transmit	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Patient-specific education resources		0%	25%	0%	13%	0%	0%	0%	0%	25%	13%	0%	0%	0%	0%	0%	13%	13%	0%	
Medication reconciliation										0%	0%	0%	0%	0%	13%	25%	13%	50%	0%	
Provide summary of care record									0%	13%	0%	0%	0%	38%	38%	0%	13%	0%	0%	
Electronically provide summary of care record	25%	38%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	13%	0%	0%	0%	0%		
Electronic medication administration	0%	0%	13%	0%	0%	0%	0%	0%	13%	0%	13%	0%	13%	13%	13%	25%	0%	0%	0%	

Based on 8 eligible hospitals attesting as of May 30, 2014

Figures reflect 8 Medicare eligible hospitals who attested to Stage 2 as of May 31, 2014. Distributions are based on professionals that reported on the objective; no attesting hospitals claimed an exclusion for any of the objectives.

Almost half of hospitals send ED notifications— though primarily to affiliated PCPs

Percent of U.S. Hospitals that Routinely Electronically Notify Patient's Primary Care Provider upon Emergency Room Entry
2012 - 2013

Legend: ■ 2012 Routine Notification ■ 2013 Routine Notification

Categories (x-axis): Routinely Notifies any Primary Care Provider; Routinely Notifies Primary Care Providers Inside System; Routinely Notifies Primary Care Providers Outside System

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Interoperability and Future Measurement

Individuals are consistently experiencing gaps in information exchange

Similar patterns in 2012

Approximately 1 in 3 individuals experienced at least one gap in health information
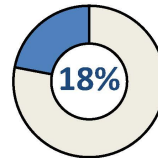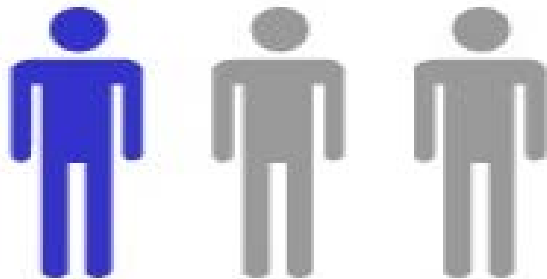
18% Provide medical history again because provider hadn't gotten records from another provider
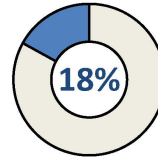
18% Bring the results of medical exam/test result to a doctor
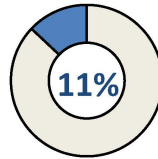
11% Wait longer than reasonable for the results of a test
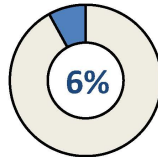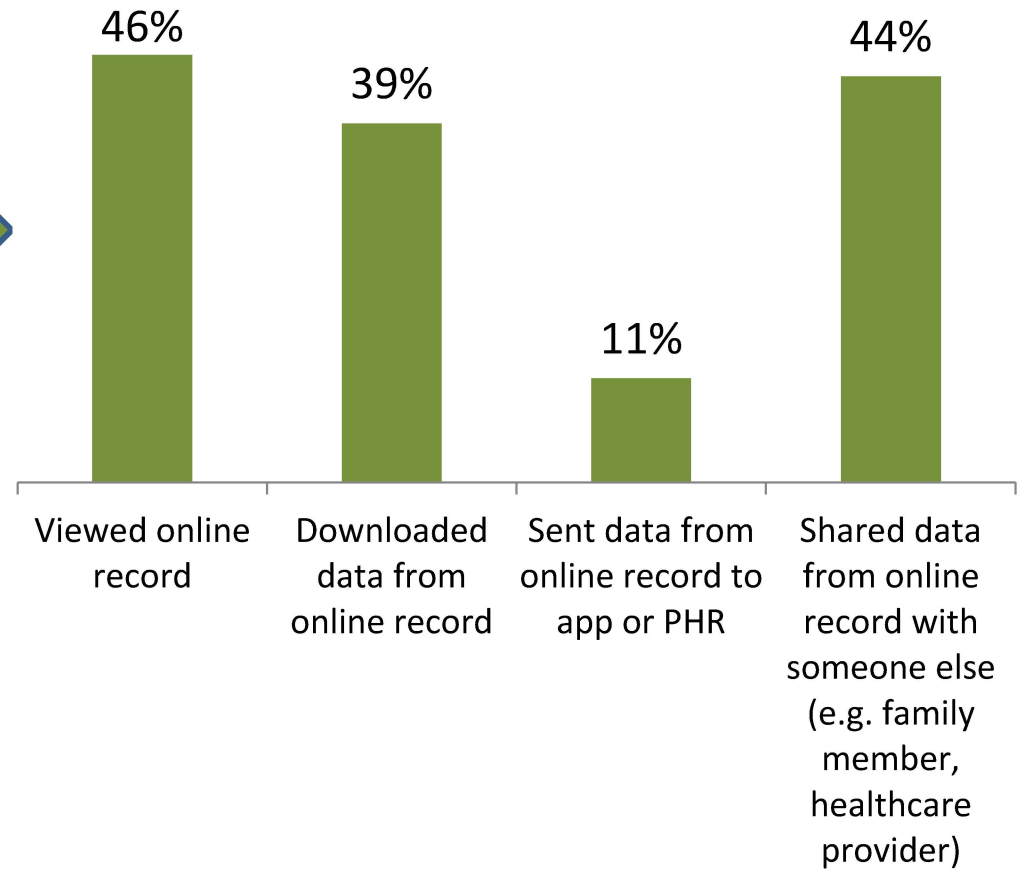
6% Redo a test or procedure because no longer available
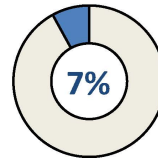
7% Had to provide medical history again because chart could not be found

Among the 28% of the U.S. adult population given access to their online medical record, almost half viewed their information.

Percent of U.S. Adult Population Offered Access to Online Medical Record, 2013

28%
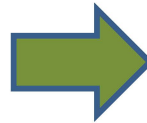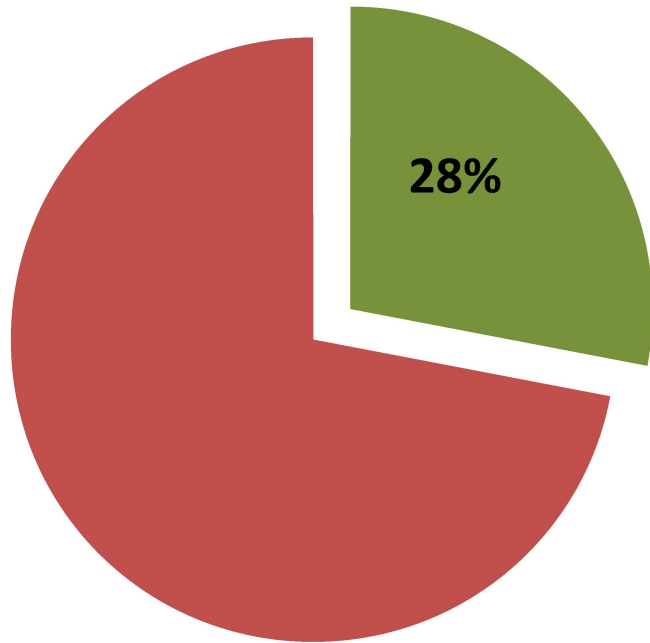
Of adults offered access to online medical record in 2013, percent who:

	Viewed online record	Downloaded data from online record	Sent data from online record to app or PHR	Shared data from online record with someone else (e.g. family member, healthcare provider)
	46%	39%	11%	44%

Analysis of Privacy and Security Survey, 2013.
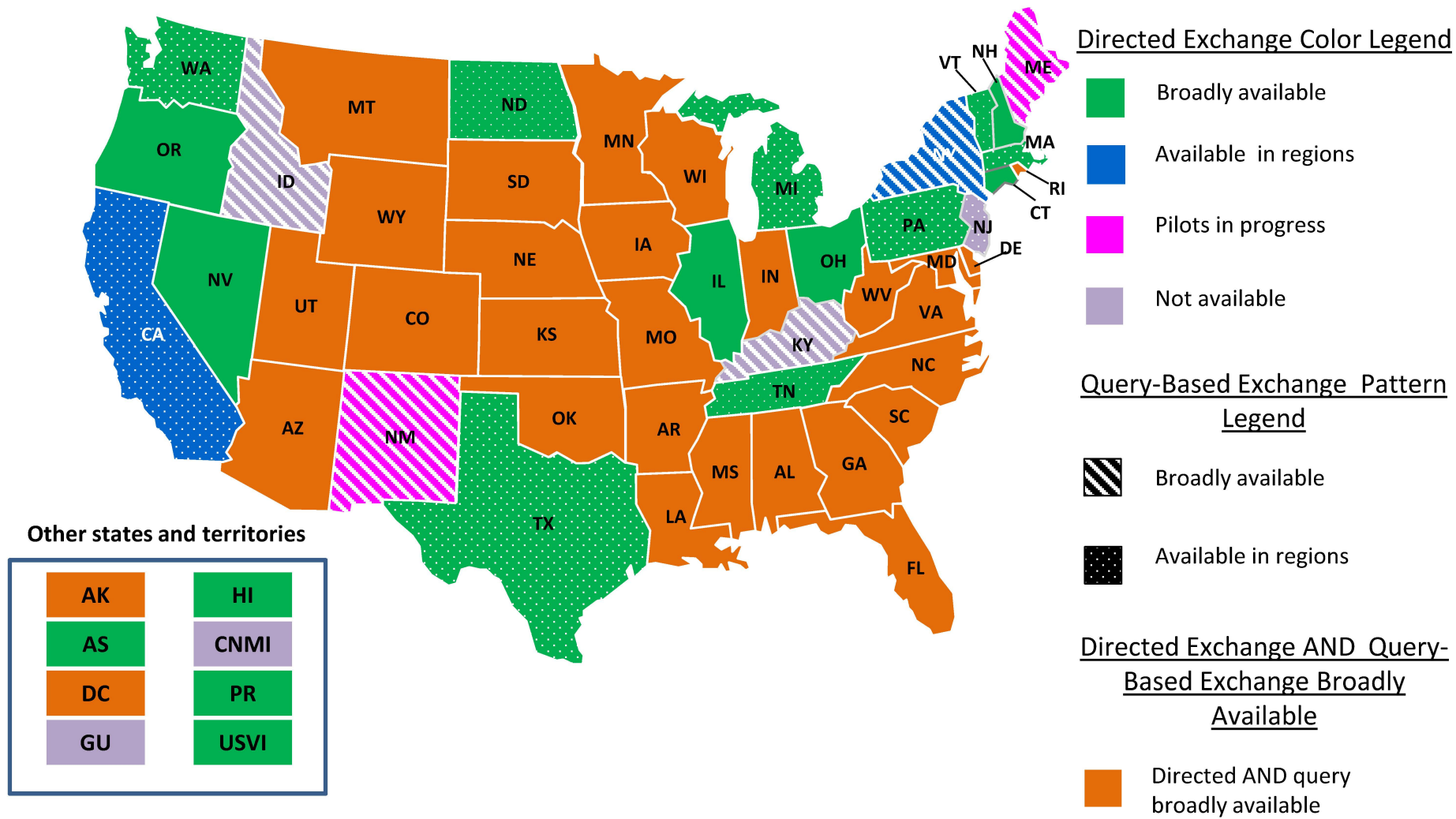
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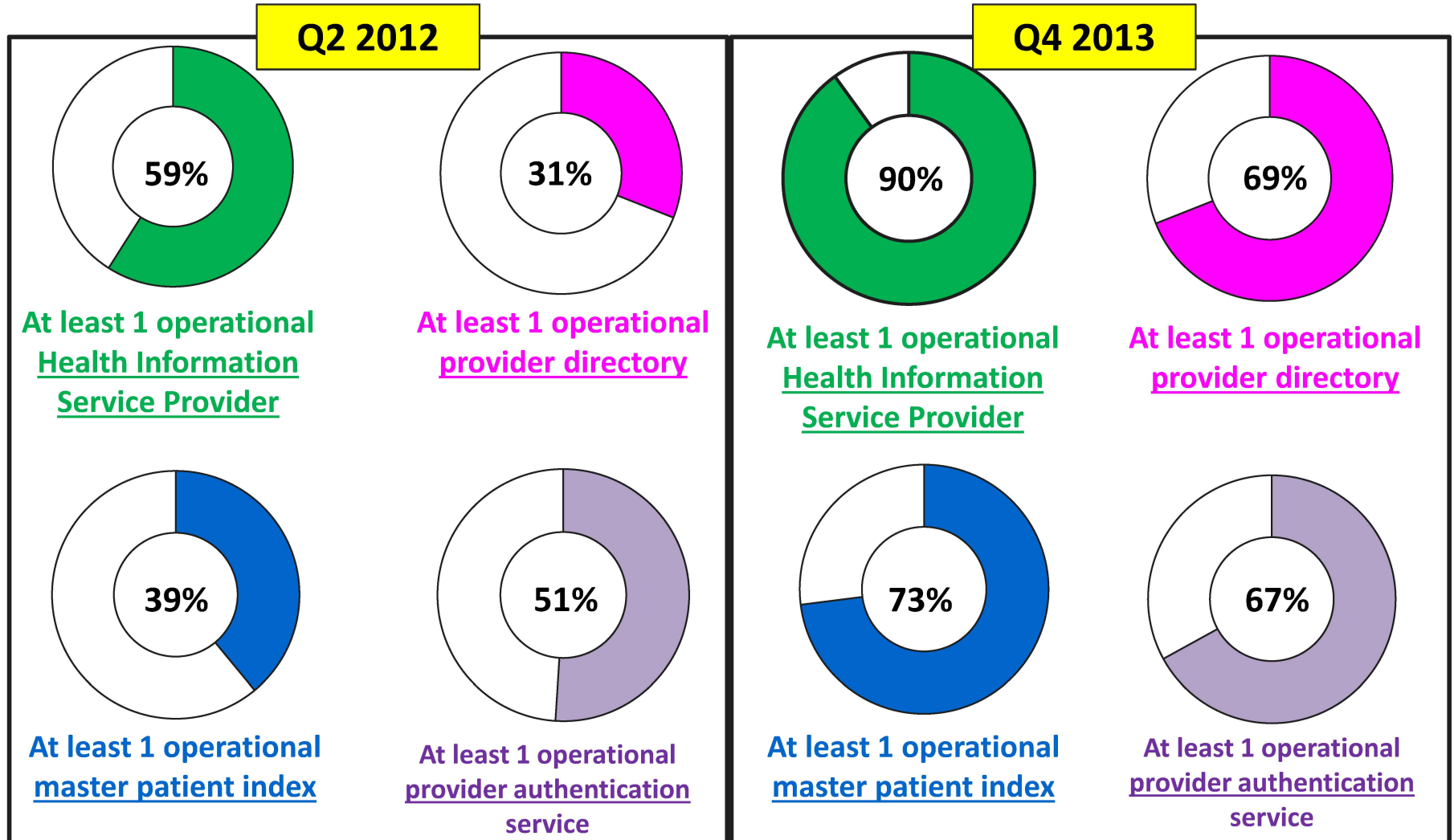
Interoperability and Future Measurement

Directed and Query-based exchange broadly available in 28 states and Washington, DC as of Q4 2013

Data Source: State HIE Dashboard, self-reported grantee data

Operational HIE Core Infrastructure Services grew across 50 states and Washington, DC

Q2 2012

59%

At least 1 operational
Health Information
Service Provider

31%

At least 1 operational
provider directory

39%

At least 1 operational
master patient index

51%

At least 1 operational
provider authentication
service

Q4 2013

90%

At least 1 operational
Health Information
Service Provider

69%

At least 1 operational
provider directory

73%

At least 1 operational
master patient index

67%

At least 1 operational
provider authentication
service

N = 51; territories excluded. Self-reported grantee data

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Interoperability and Future Measurement

Interoperability & Future Measurement

- Measures to date have largely focused on HIE rather than interoperability

- Discussions are underway regarding future measurement linked to ONC's strategic vision going forward that may include monitoring:
  - transactions, adoption of standards, availability of services that enable HIE
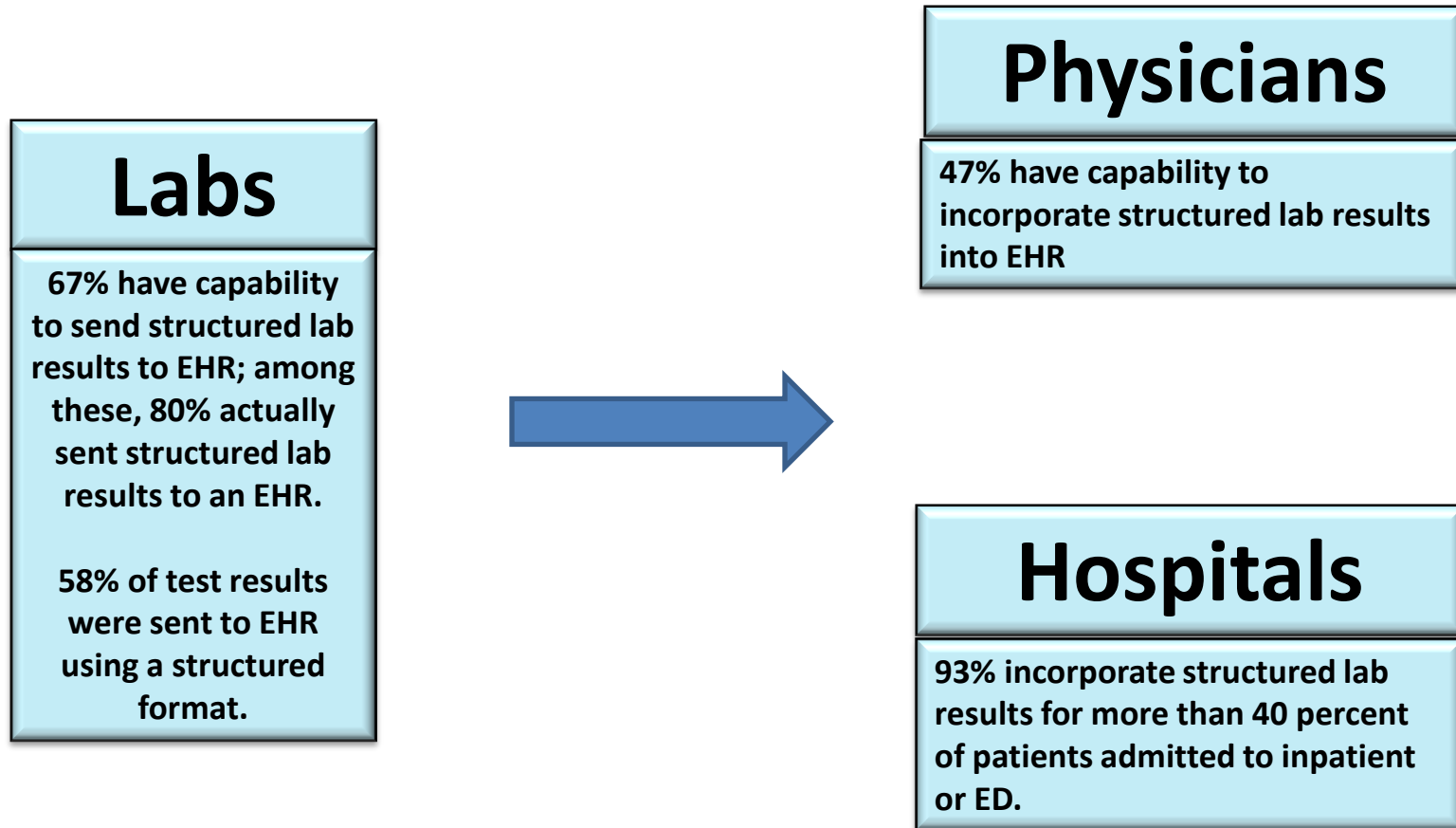
Key Takeaways

Baseline prior to Stage 2 of Meaningful Use shows variation in exchange activity and capability:

– **Physician exchange activity with outside providers was limited in 2013.**

– **Hospital exchange activity has grown significantly since 2008.**

– **Exchange of data during transitions is limited for hospitals and physicians, as evidenced by survey data and early Stage 2 MU data.**

– **A significant number of individuals experience gaps in information sharing though a significant portion of individuals who obtain access to their health information do view, download and share their data.**

– **State HIE grantees report increased capabilities for query-based and directed exchange, as well as increased ability to support exchange through the provision of key services.**

Data show growth in exchange capability and activity, but also show there is substantial room for improvement. Interoperability measurement will be a key focus going forward.

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Additional updates

Lab Interoperability

Labs

67% have capability to send structured lab results to EHR; among these, 80% actually sent structured lab results to an EHR.

58% of test results were sent to EHR using a structured format.

Physicians

47% have capability to incorporate structured lab results into EHR

Hospitals

93% incorporate structured lab results for more than 40 percent of patients admitted to inpatient or ED.

Source: Swain M, Patel V. "Health Information Exchange among Clinical Laboratories." *ONC Data Brief, no 14.* February 2014.
ONC. 'U.S. Hospital Adoption of Computerized Capabilities to Meet Meaningful Use Stage 2 Objectives,' Health IT Quick-Stat, no. 23. April 2014
ONC. 'Percent of physicians with selected computerized capabilities related to Meaningful Use objectives, 2013,' Health IT Quick-Stat, no. 9. January 2014.

HIE capabilities across the continuum: Limited information on capabilities

Long-Term Care Providers

NCHS plans to release results later this year for 2012 HIE capabilities of Residential Care Communities and Adult day services centers

Behavioral Healthcare Providers

25% able to exchange key clinical information with other providers

28% of BH provide summary of care record for transitions of care

Source: NCHS Long Term Care survey 2012; National Council Behavioral Health Survey 2012