Massachusetts EHR Landscape Assessment

Note to Readers

This presentation provides data and analysis to inform the Massachusetts eHealth Institute's Last Mile integration plan for the Massachusetts statewide HIE.

The analysis and conclusions are derived from primary research using a wide array of information, including provider surveys, Regional Extension Center data, Medicaid data, and provider and vendor interviews.

This information is NOT intended to provide a comprehensive and robust census of EHR adoption and use. This assessment is specifically focused on evaluating which EHRs are in use today in Massachusetts and the relative market shares and HIE integration capabilities of those EHRs.
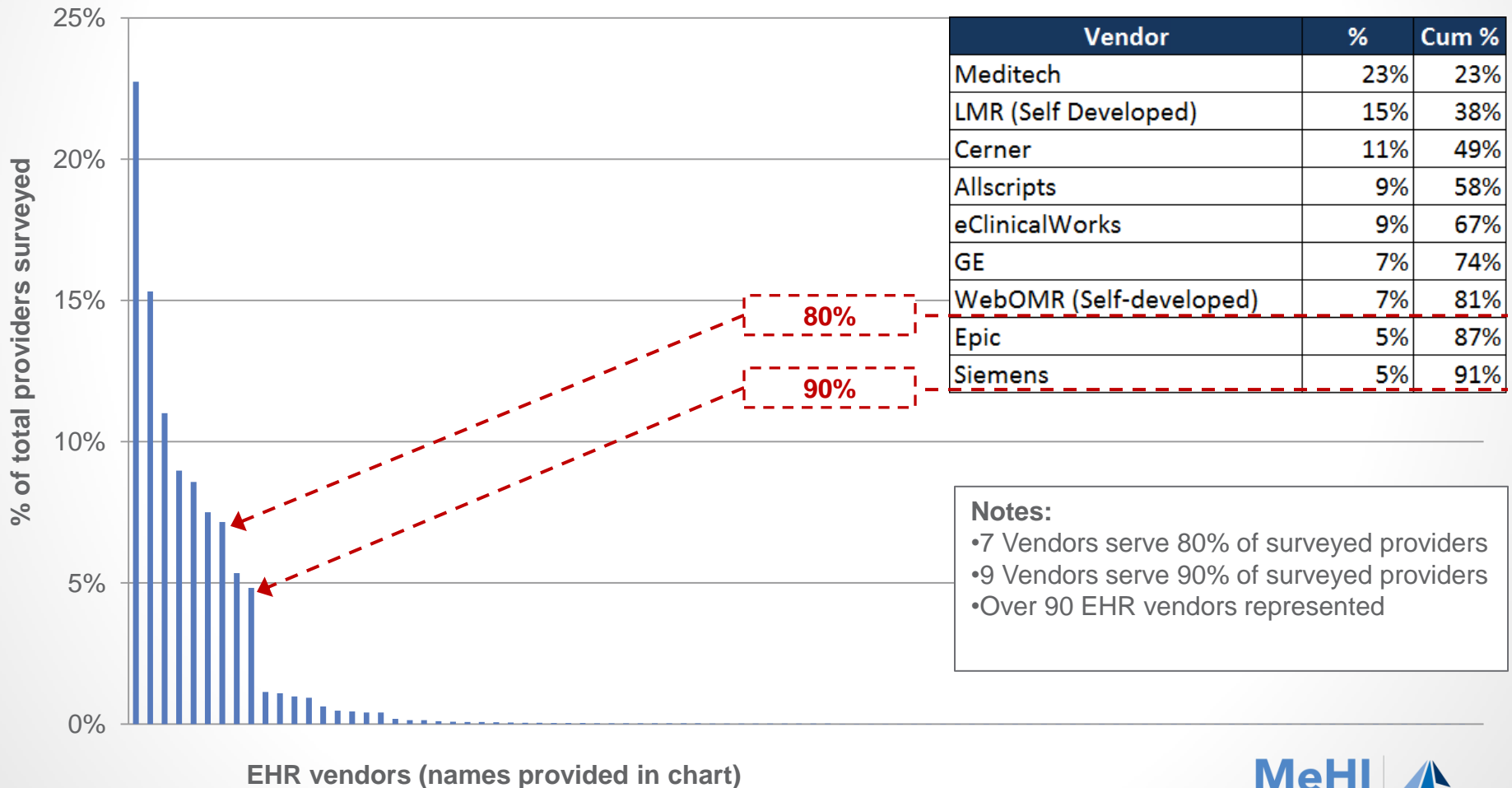
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80% of surveyed Massachusetts healthcare providers that use EHRs are using one of 7 EHR systems

EHR vendors with greatest share of Massachusetts provider customers

Vendor	%	Cum %
Meditech	23%	23%
LMR (Self Developed)	15%	38%
Cerner	11%	49%
Allscripts	9%	58%
eClinicalWorks	9%	67%
GE	7%	74%
WebOMR (Self-developed)	7%	81%
Epic	5%	87%
Siemens	5%	91%

80%

90%

% of total providers surveyed

EHR vendors (names provided in chart)

Notes:
- 7 Vendors serve 80% of surveyed providers
- 9 Vendors serve 90% of surveyed providers
- Over 90 EHR vendors represented

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Reveals additional leading EHR vendors serving provider working in…

Hospitals

Vendor	%	Cum %
Meditech	35%	35%
LMR (Self Developed)	18%	53%
Cerner	14%	67%
Allscripts	8%	75%
Siemens	8%	83%
GE	7%	89%
WebOMR (Self-developed)	4%	93%

80% (at Siemens row)

Hospital Employed practices

Vendor	%	Cum %
eClinicalWorks	25%	25%
WebOMR (Self-developed)	21%	46%
LMR (Self Developed)	16%	62%
Epic	12%	74%
Allscripts	11%	85%
Cerner	8%	93%

80% (at Allscripts row)

Community Health Centers

Vendor	%	Cum %
eClinicalWorks	37%	37%
NextGen	28%	65%
GE	24%	88%
Sage/Vitera	4%	92%

80% (at GE row)

Non Hospital employed large practices (10+)

Vendor	%	Cum %
GE	31%	31%
Allscripts	18%	48%
eClinicalWorks	14%	62%
Epic	10%	72%
NextGen	9%	81%
athenahealth	4%	85%
LMR (Self Developed)	3%	87%
Quest Care360	1%	89%
Vista (CPRS)	1%	90%

80% (at NextGen row)

Pediatric practice

Vendor	%	Cum %
eClinicalWorks	40%	40%
LMR (Self Developed)	18%	58%
GE	9%	67%
Epic	5%	72%
e-MDs	5%	77%
athenahealth	3%	80%
PCC	3%	83%
Quest Care360	3%	85%
Allscripts	3%	88%
Cerner	2%	90%

80% (at athenahealth row)

Non Hospital employed Med & Small practices (<10)

Vendor	%	Cum %
eClinicalWorks	41%	41%
GE	12%	53%
Allscripts	10%	62%
Epic	7%	70%
athenahealth	5%	75%
Quest Care360	4%	78%
e-MDs	3%	81%
Greenway	2%	83%
McKesson	2%	85%
NextGen	1%	86%
Practice Fusion	1%	87%
Cerner	1%	88%
Amazing Charts	1%	89%
Sage/Vitera	1%	90%

80% (at e-MDs row)

Long Term Care

Vendor	%	Cum %
Point Click Care	69%	69%
Meditech	10%	79%
MDI ACHIEVE	9%	88%
SIGMACARE	3%	91%

80% (at Meditech row)

Behavioral Health

Vendor	%	Cum %
Netsmart Technologies	20%	20%
Unicare	13%	33%

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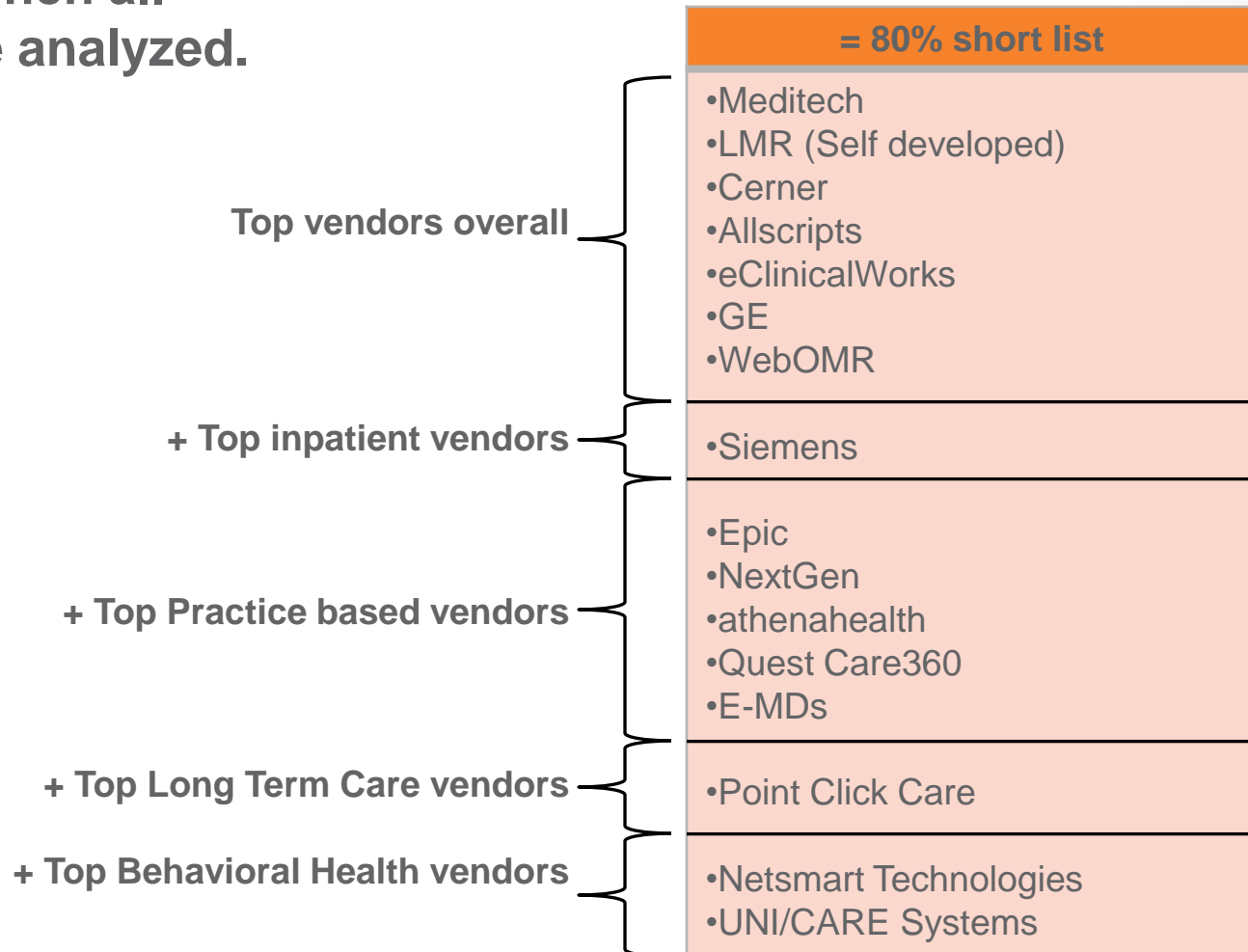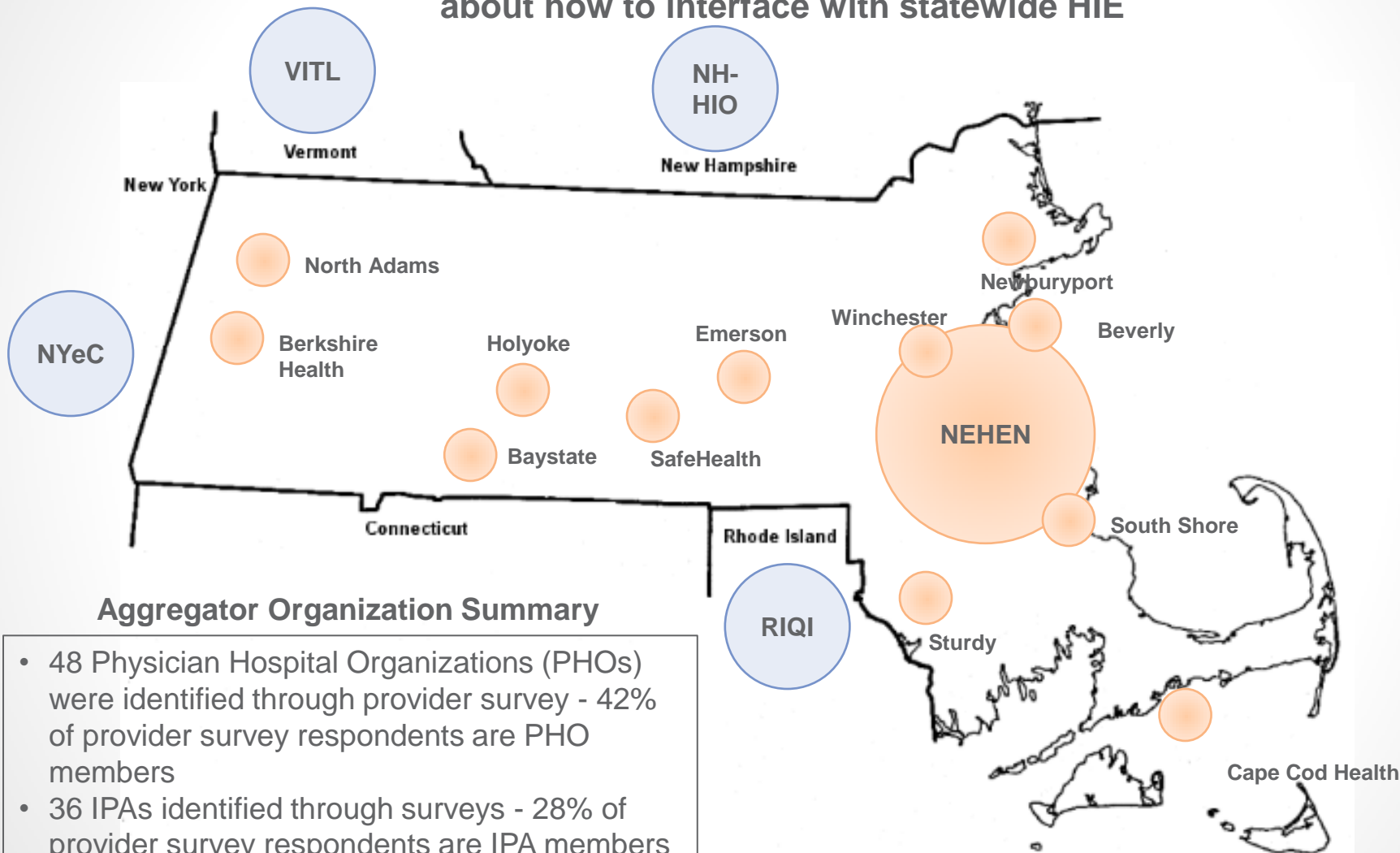
There are 16 vendors on the "80% short list" when all sub-segments are analyzed.

EHR vendors serving 80% of MA providers + provider segment leaders

= 80% short list

Top vendors overall
- Meditech
- LMR (Self developed)
- Cerner
- Allscripts
- eClinicalWorks
- GE
- WebOMR

+ Top inpatient vendors
- Siemens

+ Top Practice based vendors
- Epic
- NextGen
- athenahealth
- Quest Care360
- E-MDs

+ Top Long Term Care vendors
- Point Click Care

+ Top Behavioral Health vendors
- Netsmart Technologies
- UNI/CARE Systems

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Executive Summary

Several communities have begun HIE work – "Aggregators" are beginning to think about how to interface with statewide HIE
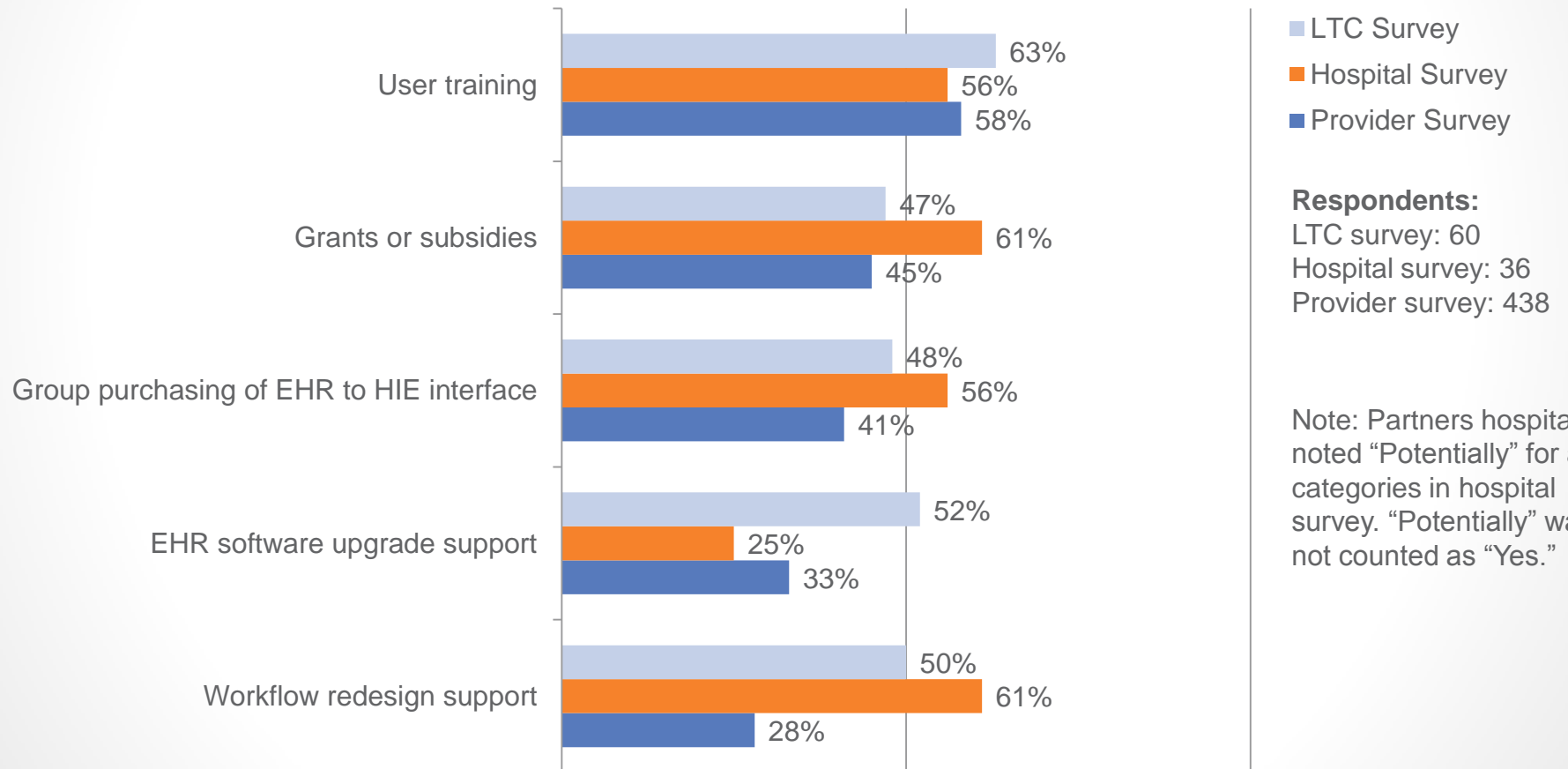

Aggregator Organization Summary

- 48 Physician Hospital Organizations (PHOs) were identified through provider survey - 42% of provider survey respondents are PHO members
- 36 IPAs identified through surveys - 28% of provider survey respondents are IPA members
- 8 of the CMS ACO pilots are in Massachusetts

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Of the vendors interviewed few are capable of DIRECT – many have some capability for transporting health information

EHR vendors capability summary

Legend:
- No Capability (orange)
- Some capability (gray)
- Full capability (blue)

Capability	No Capability	Some capability	Full capability
Ability to deliver DIRECT compliant EHR	14	5	7
Ability to follow IHE profiles (XDR, XDS, XDM)	7	6	12
Ability to follow S/MIME SMTP standards	17	4	5
Ability to embed native link to web portal	0	5	16
Ability to pass credentials to web portal (SSO)	3	7	5
Ability to interface with Provider Directory	15	6	5
Ability to interface with PKI service	7	11	8
Ability to assemble & send and receive & import	0	7	19

N = 26

Count of EHR vendors interviewed that answered question

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Executive Summary

Vendors are moving directionally toward DIRECT development, but timing and focus are highly varied

Vendor timing for a DIRECT software version release (n=26)

Cumulative number of vendors implementing DIRECT protocols

Vendors requested technical guidance, forums for learning, joint "go to market" approach, and funding from "Last Mile" program

Vendor input on resources and assistance "Last Mile" program could offer

- Provide clear technical guidance

- Provide forum for vendors to learn and interact with the state and other vendors

- Conduct outreach and communication

- Provide education

- Provide support at the practices

- Provide financial support

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The MA statewide HIE program has a number of levers available to ease last mile integration

	MeHI	EOHHS
Communication with providers	(Include in communication plan)	(Include in MassHealth communication plan)
Grants to providers	X	
Integration support to providers	X	(Some through Orion)
HIE pricing		X
Communication with vendors	X	X
Grants to vendors	X	
Technical guidance to vendors	(communicate EOHHS technical guidance)	X

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Last Mile Management Office can launch both supply-side and demand-side programs to act on these levers

Supply-side programs

Program description

1

Vendor awareness/ activation

- Activate leading MA vendors through direct engagement
- "Sell" the vendors on why they should work with MA
- Build market demand for statewide HIE connectivity

2

Managed procurement of development

- Provide vendors easy to use information resources
- Provide vendors with forums for learning and asking questions
- Purchase interface development on behalf of MA providers

Demand-side programs

3

Provider awareness/ activation

- Integrate provider engagement program with overall communications plan
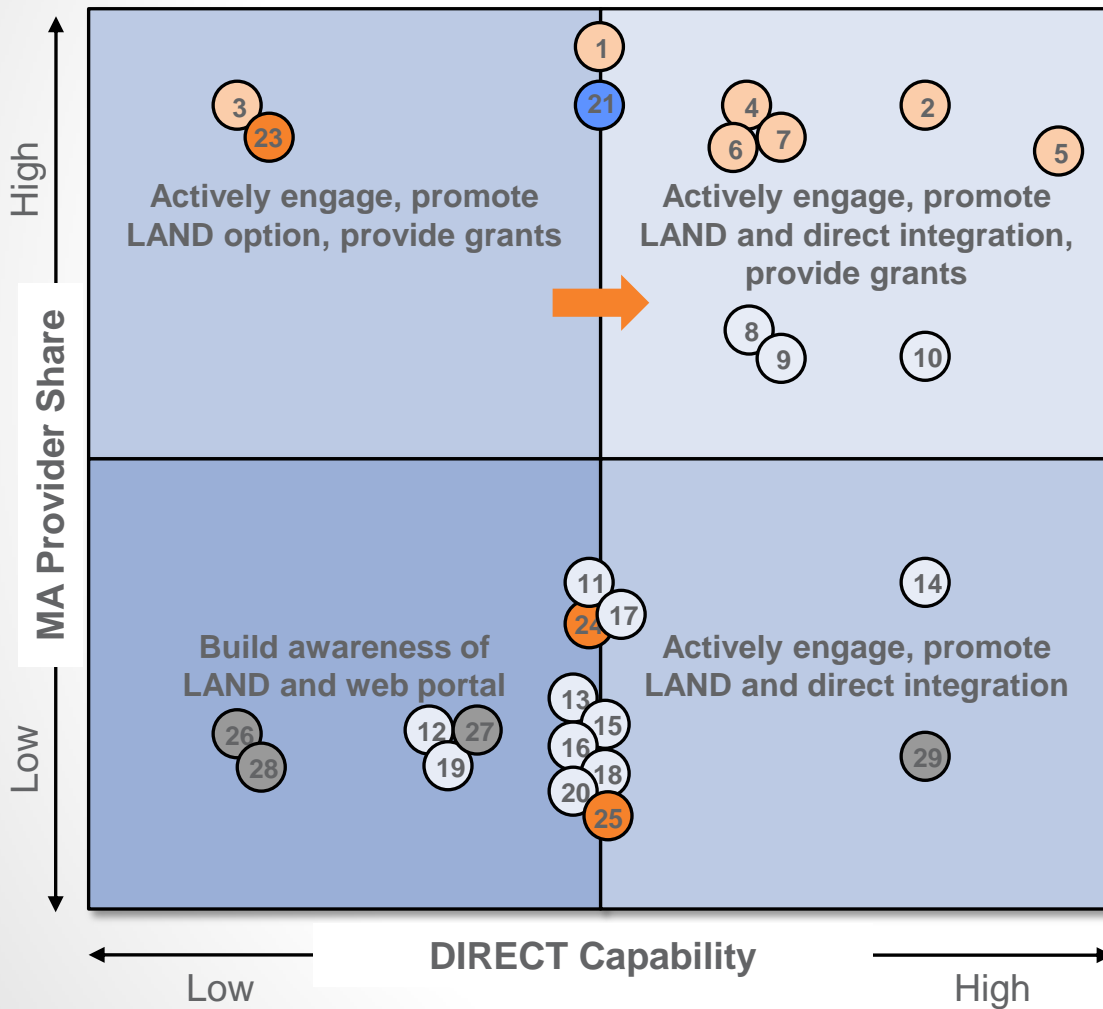- Work at all levels to engage providers to join statewide HIE

4

Support for provider integration

- Grants to providers for integration costs
- Technical support to manage provider-side of EHR integration

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Thoughtful orchestration of levers will connect the largest number of providers in the shortest amount of time

Multi-segment providers		In-patient vendors	
1	Vendor 1	21	Vendor 21
2	Vendor 2	22	Vendor 22
3	Vendor 3	**LTC vendors**	
4	Vendor 4	23	Vendor 23
5	Vendor 5	24	Vendor 24
6	Vendor 6	25	Vendor 25
7	Vendor 7	**Beh. health vendors**	
Practice based vendors		26	Vendor 26
8	Vendor 8	27	Vendor 27
9	Vendor 9	28	Vendor 28
10	Vendor 10	29	Vendor 29
11	Vendor 11		
12	Vendor 12		
13	Vendor 13	Not interviewed	
14	Vendor 14	22	
15	Vendor 15		
16	Vendor 16		
17	Vendor 17		
18	Vendor 18		
19	Vendor 19		
20	Vendor 20		

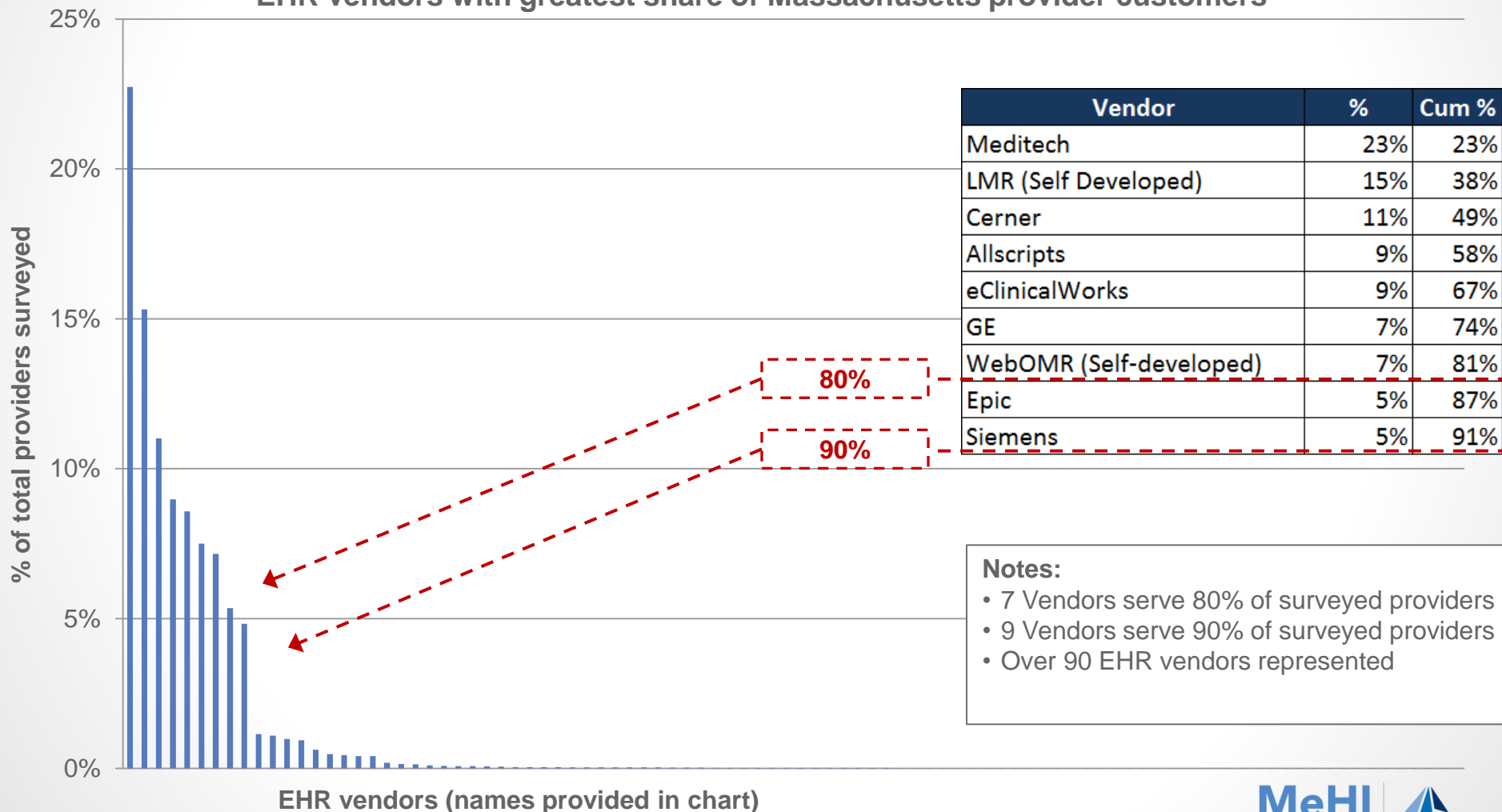MeHI MASSACHUSETTS eHEALTH INSTITUTE | at the MassTech Collaborative

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80% of surveyed Massachusetts healthcare providers that use EHRs are using one of 7 EHR systems

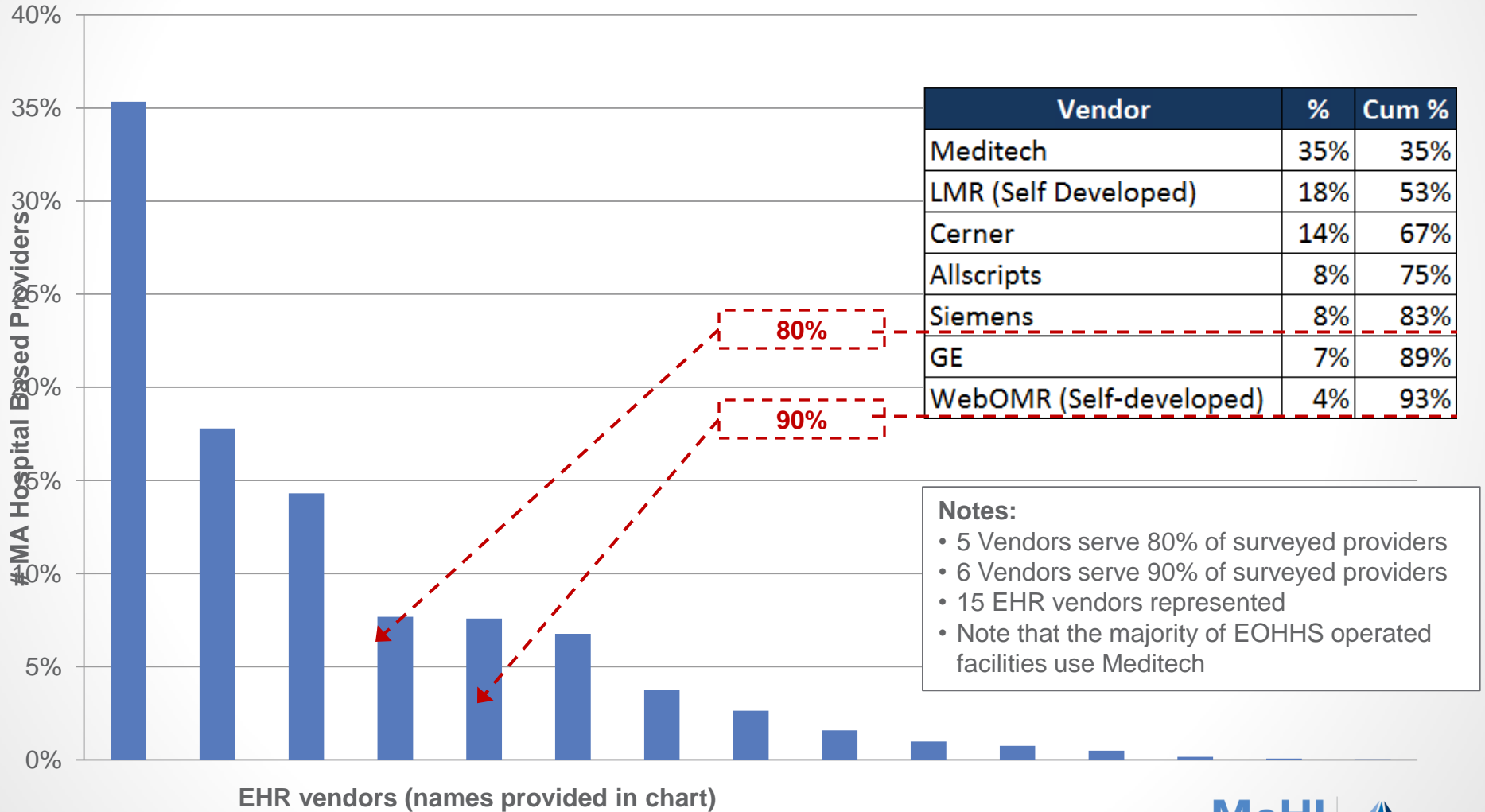**EHR vendors with greatest share of Massachusetts provider customers**

Vendor	%	Cum %
Meditech	23%	23%
LMR (Self Developed)	15%	38%
Cerner	11%	49%
Allscripts	9%	58%
eClinicalWorks	9%	67%
GE	7%	74%
WebOMR (Self-developed)	7%	81%
Epic	5%	87%
Siemens	5%	91%

80%

90%

Notes:
- 7 Vendors serve 80% of surveyed providers
- 9 Vendors serve 90% of surveyed providers
- Over 90 EHR vendors represented

% of total providers surveyed

EHR vendors (names provided in chart)

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5 vendors serve most of the hospital providers in the state

EHR Vendors by # MA Hospital Based Providers Served

Vendor	%	Cum %
Meditech	35%	35%
LMR (Self Developed)	18%	53%
Cerner	14%	67%
Allscripts	8%	75%
Siemens	8%	83%
GE	7%	89%
WebOMR (Self-developed)	4%	93%

Notes:
- 5 Vendors serve 80% of surveyed providers
- 6 Vendors serve 90% of surveyed providers
- 15 EHR vendors represented
- Note that the majority of EOHHS operated facilities use Meditech

EHR vendors (names provided in chart)

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Practice based MA providers are predominately served by 6 vendors

EHR Vendors by # MA Practice based Providers Served
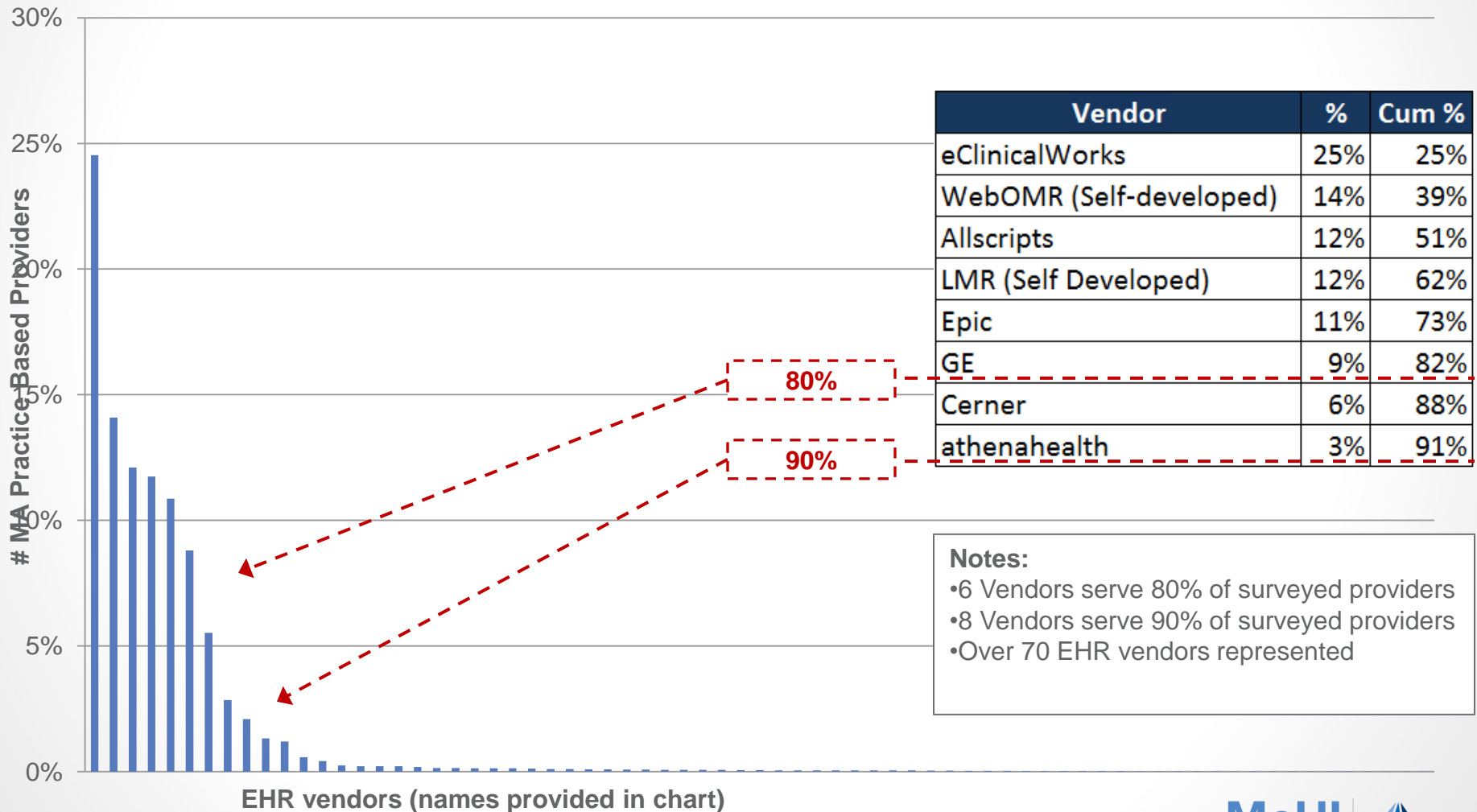
Vendor	%	Cum %
eClinicalWorks	25%	25%
WebOMR (Self-developed)	14%	39%
Allscripts	12%	51%
LMR (Self Developed)	12%	62%
Epic	11%	73%
GE	9%	82%
Cerner	6%	88%
athenahealth	3%	91%

80%

90%

Notes:
• 6 Vendors serve 80% of surveyed providers
• 8 Vendors serve 90% of surveyed providers
• Over 70 EHR vendors represented

EHR vendors (names provided in chart)

MA Practice Based Providers

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A deeper dive into practice-based provider sub-segments reveals some additional EHR vendors (1 of 2)

Leading vendors serving providers working in…

Hospital Employed practices

Vendor	%	Cum %
eClinicalWorks	25%	25%
WebOMR (Self-developed)	21%	46%
LMR (Self Developed)	16%	62%
Epic	12%	74%
Allscripts	11%	85%
Cerner	8%	93%

80%
90%

Non Hospital employed large practices (10+)

Vendor	%	Cum %
GE	31%	31%
Allscripts	18%	48%
eClinicalWorks	14%	62%
Epic	10%	72%
NextGen	9%	81%
athenahealth	4%	85%
LMR (Self Developed)	3%	87%
Quest Care360	1%	89%
Vista (CPRS)	1%	90%

80%
90%

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A deeper dive into practice-based provider sub-segments reveals some additional EHR vendors (2 of 2)

Leading vendors serving providers working in…

Non Hospital employed Med & Small practices (<10)

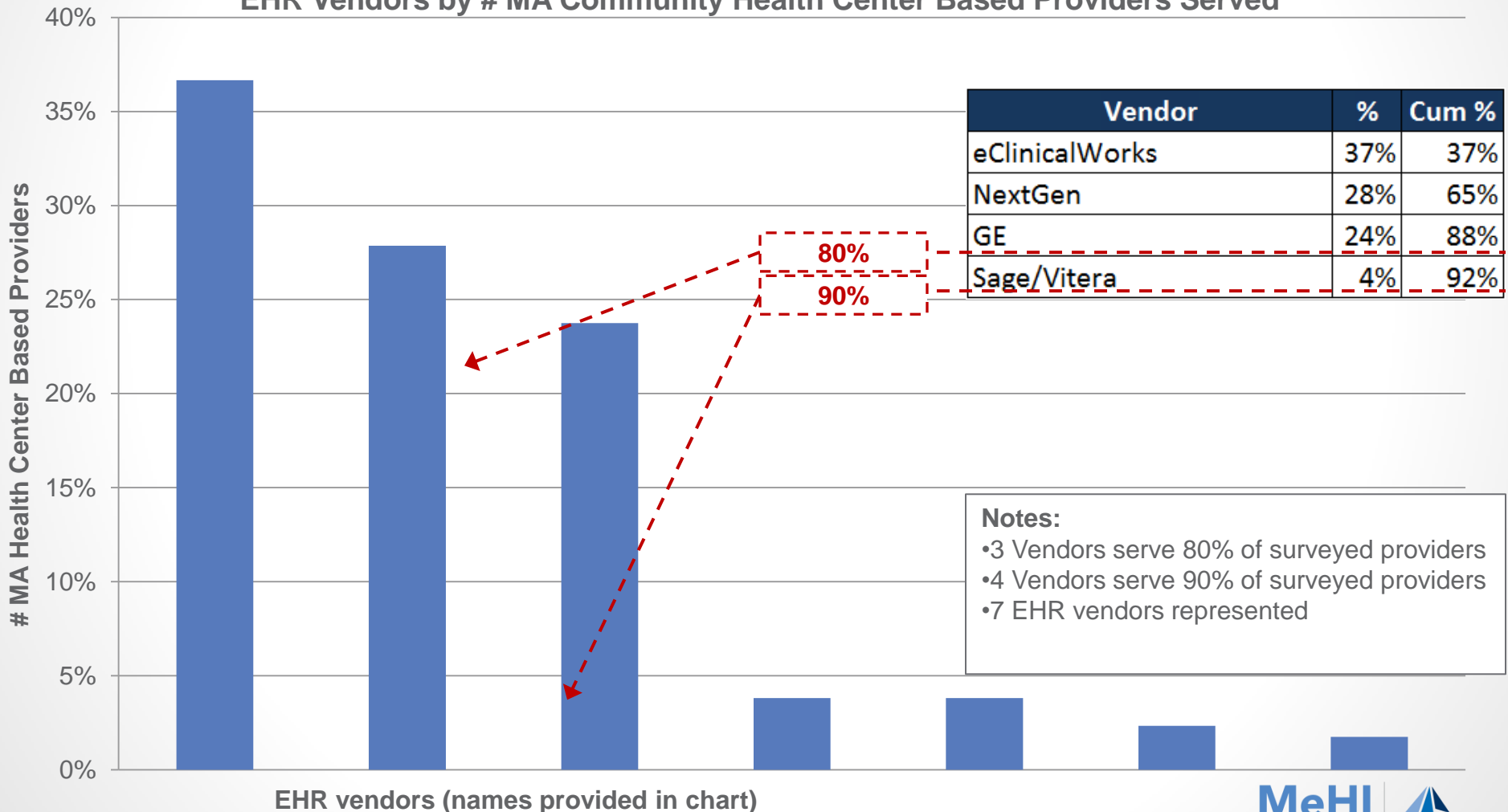| Vendor	%	Cum %
eClinicalWorks	41%	41%
GE	12%	53%
Allscripts	10%	62%
Epic	7%	70%
athenahealth	5%	75%
Quest Care360	4%	78%
e-MDs	3%	81%
Greenway	2%	83%
McKesson	2%	85%
NextGen	1%	86%
Practice Fusion	1%	87%
Cerner	1%	88%
Amazing Charts	1%	89%
Sage/Vitera	1%	90%

80% (dashed line at e-MDs)
90% (dashed line at Practice Fusion)

Pediatric practice

Vendor	%	Cum %
eClinicalWorks	40%	40%
LMR (Self Developed)	18%	58%
GE	9%	67%
Epic	5%	72%
e-MDs	5%	77%
athenahealth	3%	80%
PCC	3%	83%
Quest Care360	3%	85%
Allscripts	3%	88%
Cerner	2%	90%

80% (dashed line at athenahealth)
90% (dashed line at Cerner)

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3 vendors serve the majority of Community Health Center based providers

EHR Vendors by # MA Community Health Center Based Providers Served

Vendor	%	Cum %
eClinicalWorks	37%	37%
NextGen	28%	65%
GE	24%	88%
Sage/Vitera	4%	92%

Notes:
- 3 Vendors serve 80% of surveyed providers
- 4 Vendors serve 90% of surveyed providers
- 7 EHR vendors represented

Y-axis: # MA Health Center Based Providers

X-axis: EHR vendors (names provided in chart)

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3 vendors serve the majority of Community Health Center based providers

EHR Vendors by # MA Community Health Center Based Providers Served

Vendor	%	Cum %
eClinicalWorks	37%	37%
NextGen	28%	65%
GE	24%	88%
Sage/Vitera	4%	92%

80%

90%

Notes:
- 3 Vendors serve 80% of surveyed providers
- 4 Vendors serve 90% of surveyed providers
- 7 EHR vendors represented

Y-axis: # MA Health Center Based Providers

X-axis: EHR vendors (names provided in chart)

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The majority of MA Long Term Care providers are served by 2 EHR vendors

EHR Vendors by # MA Long Term Care Providers Served

Vendor	%	Cum %
Point Click Care	69%	69%
Meditech	10%	79%
MDI ACHIEVE	9%	88%
SIGMACARE	3%	91%

Notes:
- 2 Vendors serve 80% of surveyed providers
- 4 Vendors serve 90% of surveyed providers
- 14 EHR vendors represented

MA Long Term Care Providers

EHR vendors (names provided in chart)

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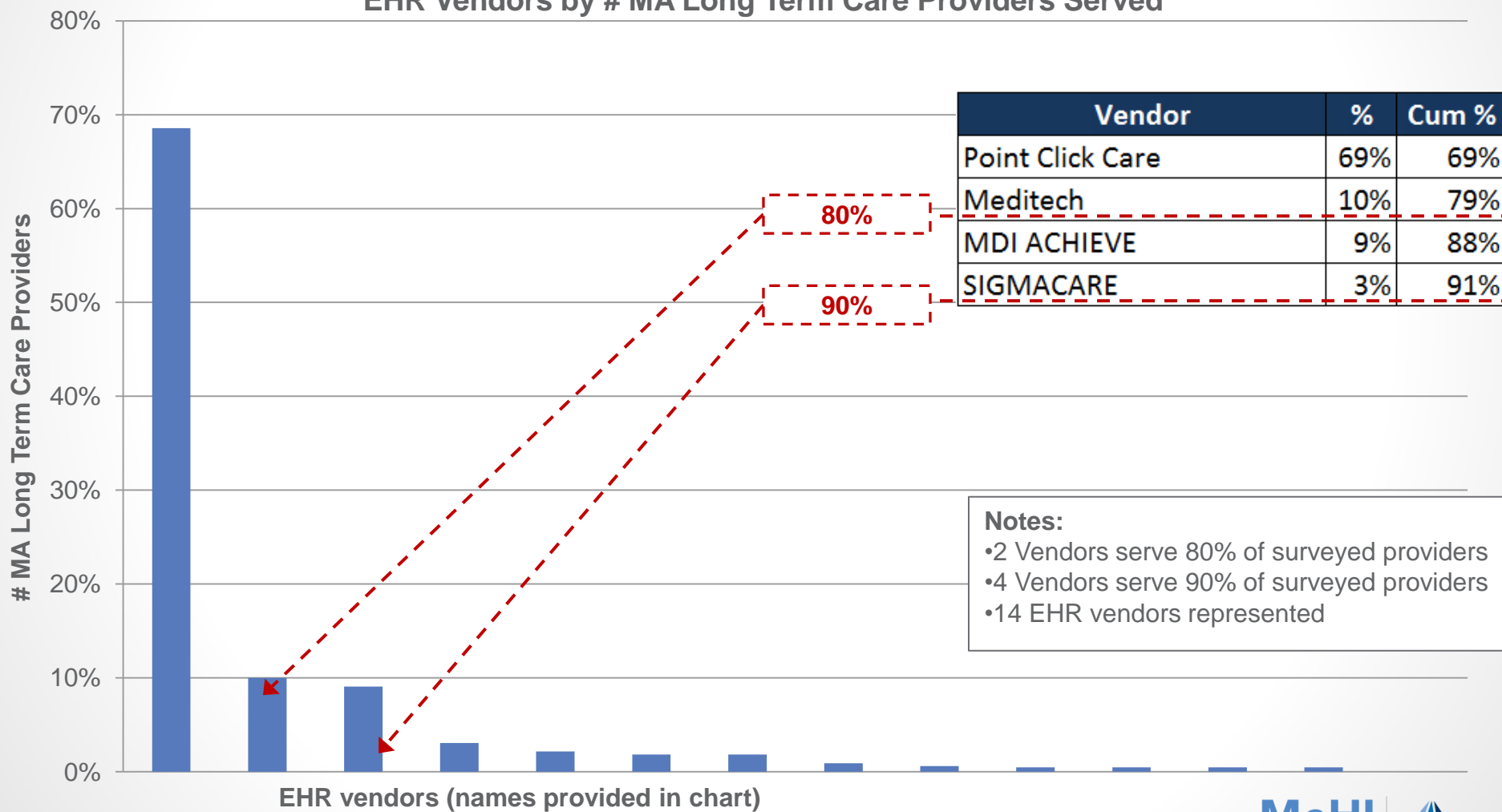
The behavioral health EHR landscape is highly fragmented – 2 segment specific vendors appear to be MA market leaders

Leading EHR Vendors serving MA Behavioral Health Providers in small independent practices

Vendor	%	Cum %
Netsmart Technologies	20%	20%
Unicare	13%	33%
GE	13%	46%
Practice Fusion	10%	56%
Profiler	9%	65%
Valant	6%	71%
Amazing Charts	6%	77%
athenahealth	5%	82%
eHana	3%	85%
NextGen	3%	87%
Quest Care360	3%	90%

Notes:
- MA Behavioral health providers surveyed represented ~10% of MPS membership – survey was targeted at small independent providers
- Note: small sample size (163 respondents with 22% EHR penetration)

Leading EHR vendors serving Community Behavioral Healthcare providers nationally

Vendor	%	Cum %
Netsmart	14%	14%
Anasazi	13%	27%
Credible Wireless	5%	32%
UNI/CARE	5%	37%
Qualifacts	4%	41%
Aslesis Development Group	4%	45%
Echo Group	3%	48%
Lavender & WyattSystems	3%	51%
Sequest Technologies	3%	54%
NextGen	3%	57%
Foothold Technology	3%	60%

Notes:
- National Council for Community Behavioral Healthcare – "HIT Adoption and Readiness for Meaningful Use in Community Behavioral Health, Report on the 2012 National Council Survey"
- N=324

EHR vendors certified by the Massachusetts Association for Behavioral Healthcare

Vendor
Defran Systems
eHana
iCentrix
MindLinc (Duke University)
Netsmart Technologies
System Q
UNI/CARE Systems

Notes:
- Association for Behavioral Health certified vendors from Massachusetts Standardized Documentation Project
- ABH represents 84 MA outpatient facilities

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There are 16 vendors on the "80% short list" when all provider segments are accounted for

EHR vendors serving 80% of MA providers + top vendors in key provider segments

Top vendors overall	+ top practice based vendors	= 80% short list
•Meditech •LMR (Self developed) •Cerner •Allscripts •eClinicalWorks •GE •WebOMR	**Hospital employed practices** Epic	•Meditech •LMR (Self developed) •Cerner •Allscripts •eClinicalWorks •GE •WebOMR
	Non-Hospital employed large practices (10+ Providers) •Epic •NextGen	
+ Inpatient vendors	**Non-Hospital employed med & small practices (<10 Providers)** •Epic •athenahealth •Quest Care360 •E-MDs	•Siemens
Siemens		
	Pediatric practices •Epic •E-MDs •athenahealth	•Epic •NextGen •athenahealth •Quest Care360 •E-MDs
+ Long Term Care vendors		
Point Click Care		•Point Click Care
	Community health centers NextGen	
+ Behavioral Health vendors		
•Netsmart Technologies •UNI/CARE Systems		•Netsmart Technologies •UNI/CARE Systems

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MA providers have already started organizing for purposes of HIE – initial efforts have been community based or through NEHEN
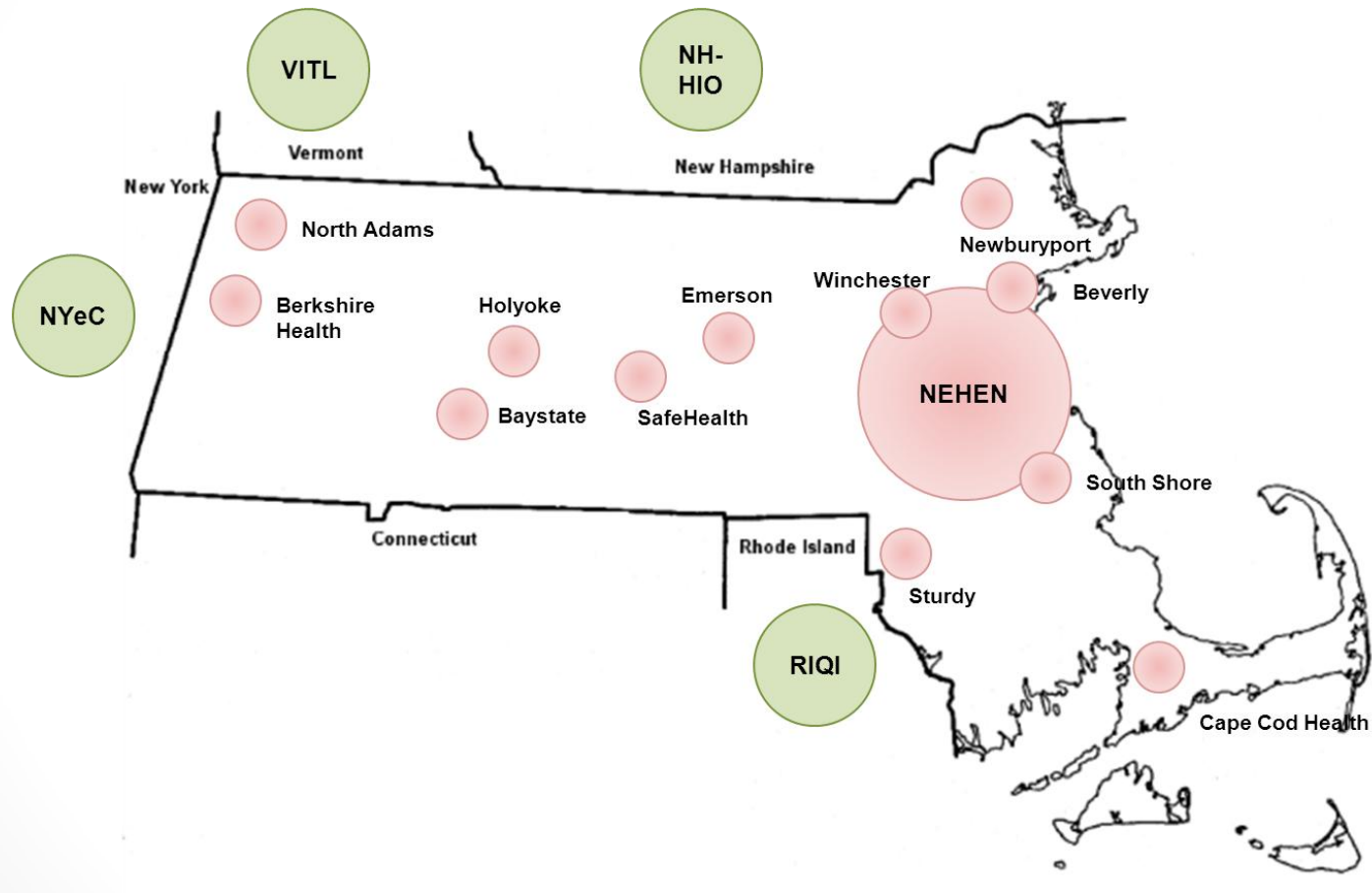
Beyond these initial HIEs there are several provider "aggregators" that may be considered in HIE planning

- Physician Hospital Organizations (PHO)
  - 48 PHOs identified through provider survey
  - 42% of provider survey respondents are PHO members

- Independent Practice Associations (IPA)
  - 36 IPAs identified through surveys
  - 28% of provider survey respondents are IPA members

- Accountable Care Organizations (ACO)
  - 8 of the CMS ACO pilots are in Massachusetts

Survey respondents identified many such "aggregators"

Aggregator Organization
Affiliated Pediatric Practices
Atrius Health
Baycare Health Partners, Inc.
Baystate Medical Practices
Berkshire Health System
Beth Israel Deaconess Provider Organization (BIDPO)
Beverly Hospital PHO
Brigham and Women's Physician Organization (BWPO)
Brockton Hospital/ Signature Health Care, South Shore Hospital
Cape Cod Health Network
Central Massachusetts Independent Practice Association (CMIPA)
Children's Hospital Integrated Care Organization
Cooley Dickinson Physician Hospital Organization (CDPHO)
Emerson Hospital IPA
Emerson Physician's Hospital Organization
Evans Medical Foundation
Good Samaritan IPA
Greater Lowell IPA
Hallmark Health PHO
Highland Healthcare Associates IPA
Lahey Clinic Foundation/Lahey Clinic Medical Center
Lowell General Hospital PHO
Lower Merrimac Valley Physician Hospital Organization (LMVPHO)
Massachusetts General Physicians Organization (MGPO)
Merrimack Valley IPA

Aggregator Organization
Metro North Healthcare alliance
MetroWest Accountable Health Care Organization, LLC
Mount Auburn Cambridge Independent Practice Association, Inc. (MACIPA)
New England Baptist Hospital PHO
New England Community Medical Group
New England Quality Care Alliance (NEQCA)
Newton-Wellesley Hospital PHO
North Shore Health System
North Shore Physicians Group
Northeast PHO (NEPHO)
Norwood /Southwood IPA, Inc.
Partners Community Healthcare Inc. (PCHI)*
Pathology Associates of Lowell
Pediatric Physicians Organization at Children's Hospital (PPOC)
Preferred Physicians of Cape Cod
Saints IPA
Springfield Anesthesia Services
St Elizabeth's Healthcare Professionals
Steward Good Samaritan Medical Center
Steward Health Care Network (SHCN)*
The Cambridge Health Alliance Physician Organization (CHAPO)
Tufts IPA
Western Mass
Whittier Independent Practice Association (Whittier IPA)

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Aggregator organizations are just beginning to think about how they will fit with the statewide HIE
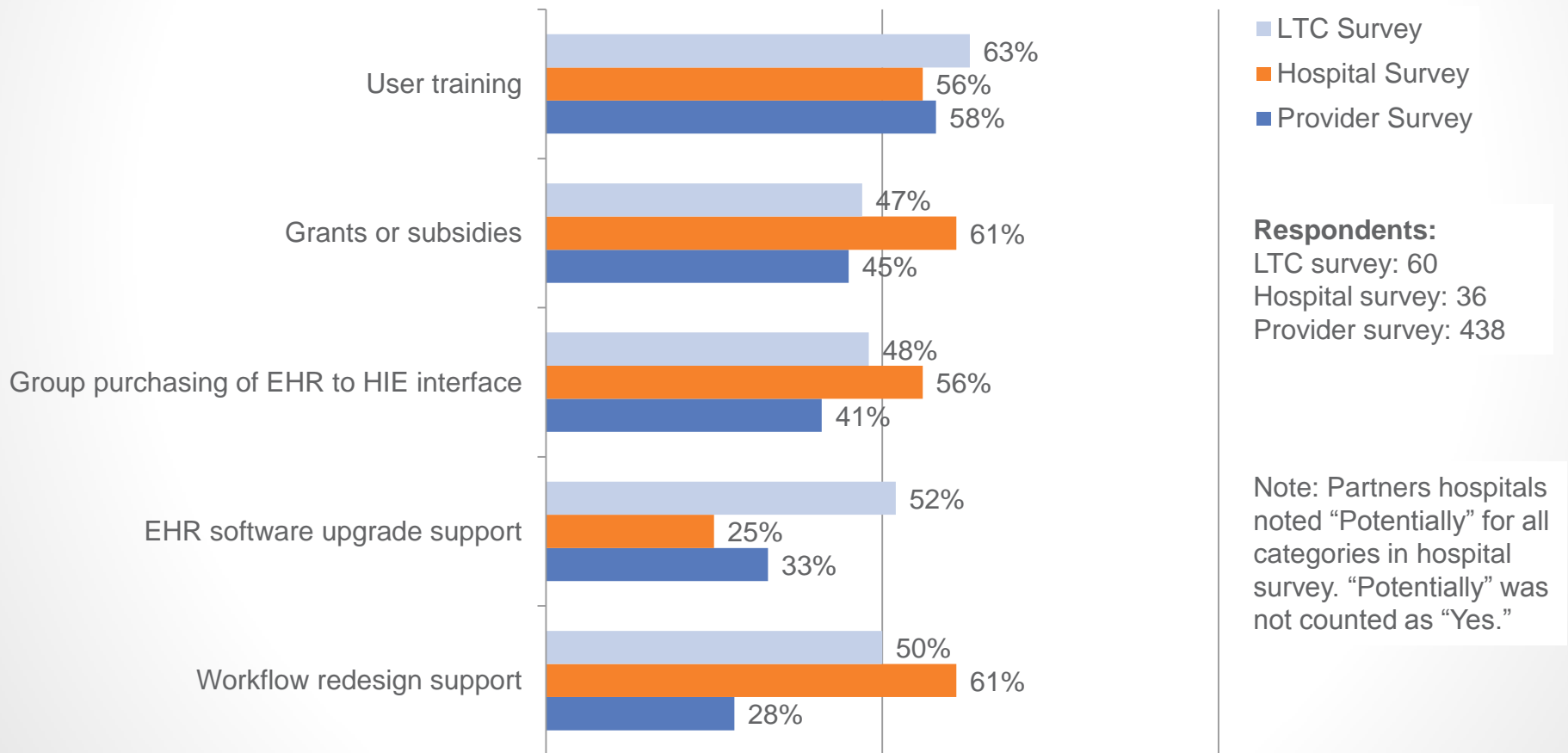
There is a full range of awareness of the statewide HIE among the aggregator organizations the project team has spoken with – only a few have incorporated the statewide HIE into future plans

- Several aggregator organizations have only recently become aware of the statewide HIE and are just beginning to think about how they will fit

- Aggregator organizations are considering statewide HIE in the context of their overall strategy whether it is information exchange, accountable care, group purchasing/contracting, and/or providing membership benefits

- Several organizations are in the middle of making a build/buy/borrow decision for HIE software and are trying to understand what needs the statewide HIE will serve and what additional capabilities will be required

- The largest HIE in the state, NEHEN, has announced that it intends to shift HIE services to the statewide HIE over time as they become available

Survey respondents weighed in on potential last mile program initiatives they may find useful

Survey Question: What "Last Mile" Program assistance would your organization find useful?

Legend:
- LTC Survey
- Hospital Survey
- Provider Survey

User training
- 63% (LTC Survey)
- 56% (Hospital Survey)
- 58% (Provider Survey)

Grants or subsidies
- 47% (LTC Survey)
- 61% (Hospital Survey)
- 45% (Provider Survey)

Group purchasing of EHR to HIE interface
- 48% (LTC Survey)
- 56% (Hospital Survey)
- 41% (Provider Survey)

EHR software upgrade support
- 52% (LTC Survey)
- 25% (Hospital Survey)
- 33% (Provider Survey)

Workflow redesign support
- 50% (LTC Survey)
- 61% (Hospital Survey)
- 28% (Provider Survey)

Respondents:
LTC survey: 60
Hospital survey: 36
Provider survey: 438

Note: Partners hospitals noted "Potentially" for all categories in hospital survey. "Potentially" was not counted as "Yes."

30

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When asked to drill down, respondents provided guidance for the last mile program

- *Help generate "interest on the part of our EHR vendor in upgrading their software to connect with the statewide HIE"*
- *Help with "Collaboration/coordination with other hospitals, documentation, implementation resources, and funding"*
- *"This is the first I have heard about the program, which is an overdue idea. - We need some introductory information about how it functions however."*
- *"Information on HIPAA compliance with respect to information sharing."*
- *"I can imagine getting together with the other Epic customers in Massachusetts and sharing our experiences as we work through the implementation. - MeHI could be the convener."*
- *"You will need to discuss whether psychiatry records will be able to be sent in this arrangements. - I have serious problems with the degree that a psychiatry/ psychotherapy practice should be connected to an HIE. There are major privacy issues, but yet there are also major reasons to be connected."*
- *"Selection of EHR software for my facility that will best meet all state and federal standards and requirements"*
- *Help defray capital connectivity cost, equipment cost, training cost*
- *Assurance that there will be some sort of Federal Government standardization to streamline further connectivity" (referring to cross-border HIE for NH patients)*
- *"Small private practices need financial help, IT expert help and advice, extra support to get to MU as well as integration into the practice without massive disruption/financial ruin"*
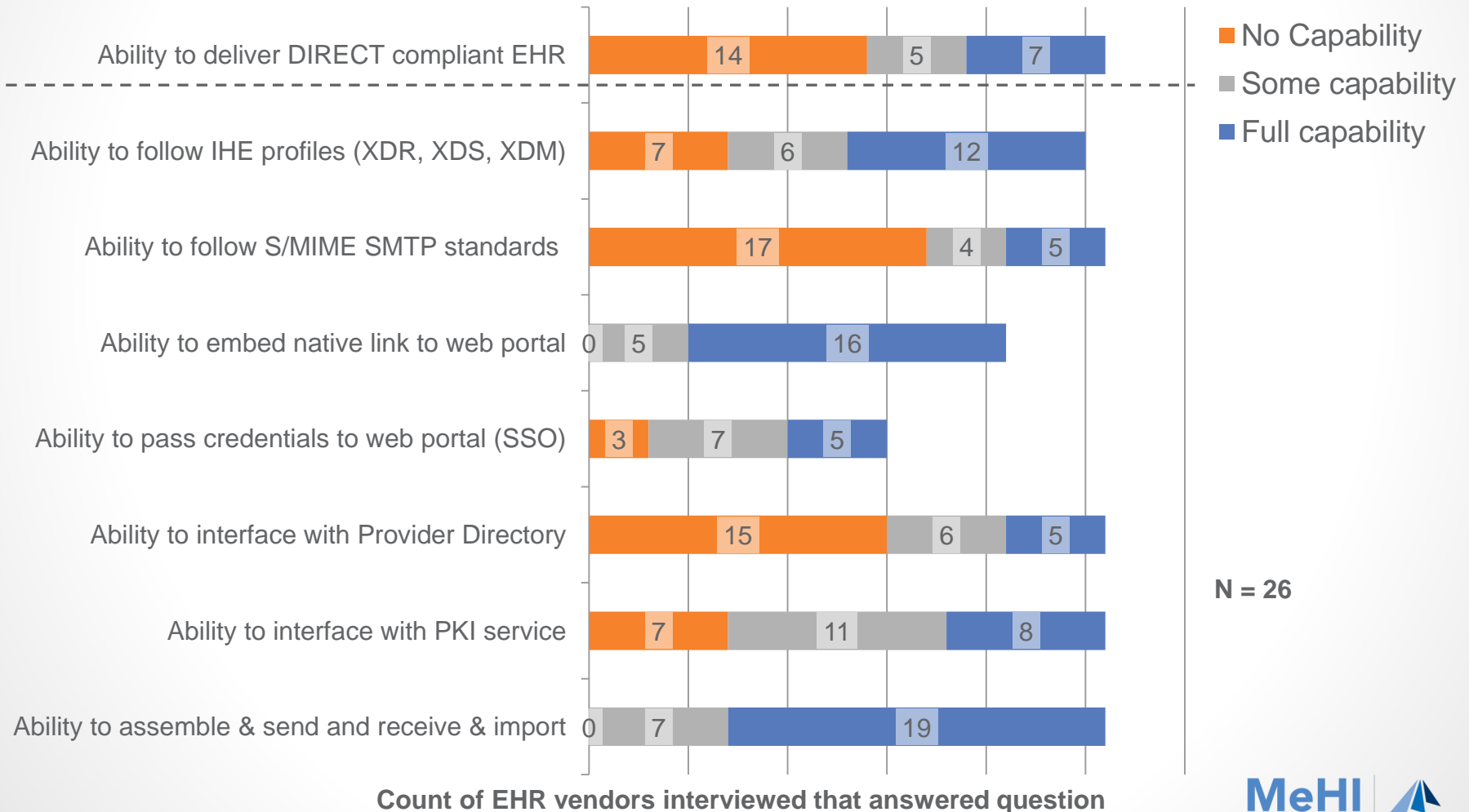
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Of the vendors interviewed few are capable of DIRECT – many have some capability for transporting health information

EHR vendors capability summary

Legend:
- No Capability (orange)
- Some capability (gray)
- Full capability (blue)

Capability	No Capability	Some capability	Full capability
Ability to deliver DIRECT compliant EHR	14	5	7
Ability to follow IHE profiles (XDR, XDS, XDM)	7	6	12
Ability to follow S/MIME SMTP standards	17	4	5
Ability to embed native link to web portal	0	5	16
Ability to pass credentials to web portal (SSO)	3	7	5
Ability to interface with Provider Directory	15	6	5
Ability to interface with PKI service	7	11	8
Ability to assemble & send and receive & import	0	7	19

N = 26

Count of EHR vendors interviewed that answered question

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DIRECT is still on the horizon for most EHR vendors

Ability to deliver DIRECT compliant EHR | 14 | 5 | 7

- Some EHR vendors have been tracking the DIRECT standard and have done some development and limited piloting - the majority are in "wait and see" mode and are waiting on customer demand and final stage 2 meaningful use certification requirements before proceeding with new development

- DIRECT is not mature enough in the market to be used "out of the box" and many vendors will need to work closely with the Massachusetts statewide HIE teams to modify their EHR solutions – nearly all vendors appear willing and eager to work with the state

- The vendors that have a lot of pioneering experience with HIEs and RHIOs have a foundation of capabilities that may be built upon – However, the MA directed exchange workflow model differs from many of the repository query models of many HIEs and RHIOs so new learning and development is required

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Many of the vendors have some experience with transport, though focus has been on IHE approach (XDR/SOAP)
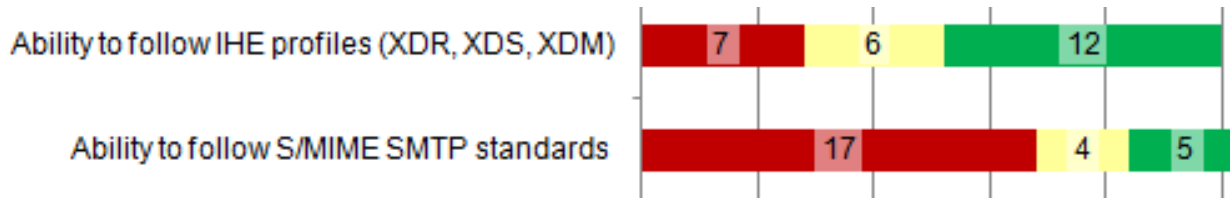
- The majority of vendors have some transport capability either by following IHE profiles (XDR, XDS, XDM) or by following secure email standards SMTP S-MIME

- Vendor prior experience is much higher with IHE profiles than with SMTP S-MIME and most are planning to follow this "flavor" of direct given the choice

Most vendors have the capability to embed a web portal link – fewer are able to incorporate single-sign-on

Ability to embed native link to web portal 0 5 16

Ability to pass credentials to web portal (SSO) 3 7 5
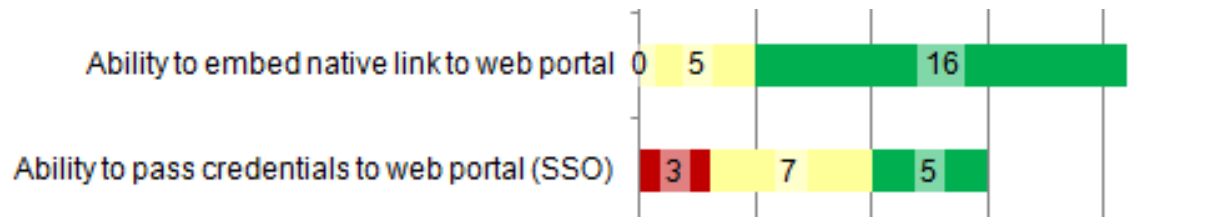
- Vendors were presented with a "fall-back" option for embedding a link to a web-portal within their EHR solution

- Most vendors had capability to do so – a few also had some capability for passing credentials to the web portal for single sign on.

- Most vendors agreed that this should be a back up or interim solution as it is likely to have a cumbersome workflow and will introduce adoption barriers

Note: this question was not asked in all interviews particularly where the vendor had a clear DIRECT roadmap

Vendors have very little experience with cross-entity provider directories and discoverability of security credentials
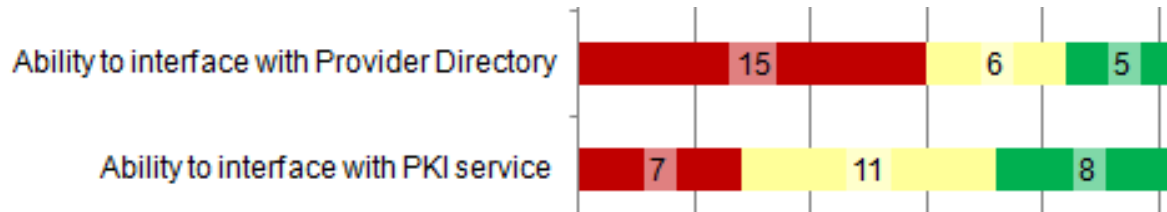
- The weakest capability area was with provider directories – most vendors had little experience with directories and very few had ever consumed an external directory - many vendors had experience with web services

- Vendors did have some experience with security credentials

Ability to manage structured documents still not well-developed for most surveyed vendors

Ability to assemble & send and receive & import 0   7   19
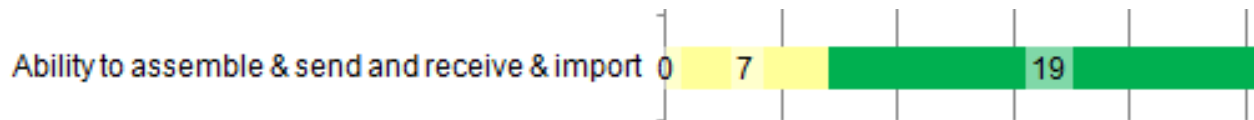
- All vendors had at least some capacity to assemble & export and/or receive & import a clinical document – HL7 and CCD are the predominant formats

- Experience with discreet data is mixed – Many vendors can assemble and export discreet data – few can receive and import discreet data – incoming documents are often not integrated into the patient record but are attached as a document

- Vendors are struggling to understand the workflow and trigger events for document assemble and send – Some are establishing transfer, discharge, and admission event triggers

Vendors are moving directionally toward DIRECT development, but timing and focus are highly varied

Vendor timing for a DIRECT software version release (n=26)

Cumulative number of vendors implementing DIRECT protocols
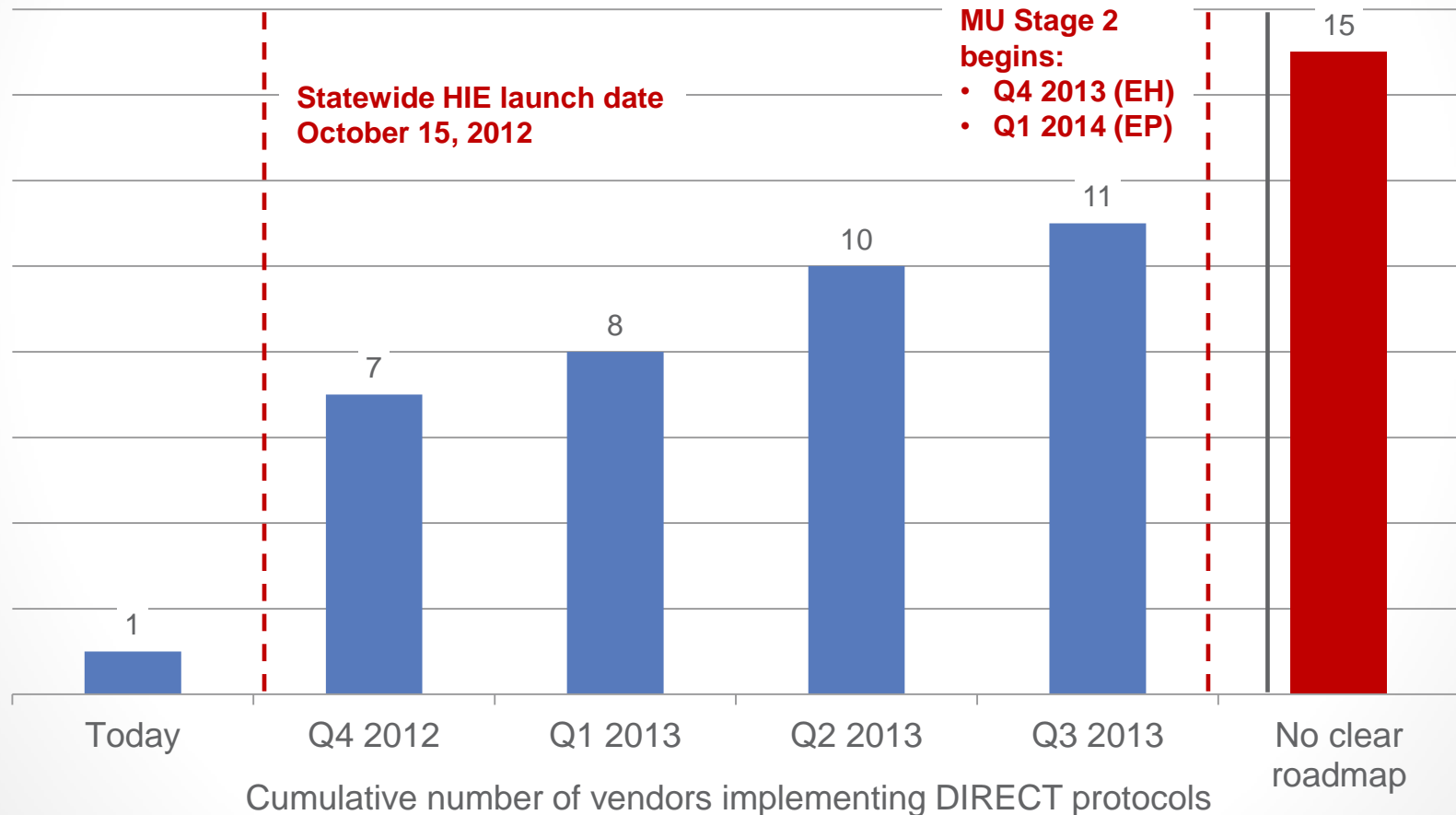
Vendors articulated some barriers to connecting Massachusetts customers to the statewide HIE

- Nascent customer demand

- Awaiting finalization of phase 2 meaningful use certification requirements

- Each state is approaching HIE differently and this requires a great deal of custom development

- All HIEs seem to be learning as they go and many have not articulated requirements

- Reaching customers to inform them of what is coming and why it is valuable

- There is still a long way to get customers to change workflow

Vendors overwhelmingly requested clear technical guidance and an ongoing forum for collaborating with others

Provide clear technical guidance

- Technical specifications and implementation guide from HIE vendor – Follow nationally recognized standards where possible

- List of clinical document types to be exchanged via HIE

- Presentations of the overall HIE plan

- Use cases and transactions

- Specifics related to the Provider Directory and Certificate Management

- Understanding of envisioned workflow

- Clarification on the "rules of the road" for providers – e.g., what can be shared, who has authority for sending, who is responsible for receiving?

Provide forum for vendors to learn and interact with the state and other vendors

- Regular touch points with vendors

- Sandbox' testing would be useful

- Follow-up call with technical engineering group and access to HIE domain experts

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Vendors also expressed a desire to do joint communication and education with their customers

Conduct outreach and communication

- There is a shared need for participation from customers and this requires communication

- Joint messaging to clients – "why should you sign up?" "This is what you need to get connected"

- Help explain service and its benefits to customers – One vendor expressed willingness to do 3 way meeting between LMMO, vendor, and customer

Provide education

- Education to practices on benefits and uses of HIE

- Relate education to MU stage 2

- Note: Some vendors prefer to conduct training using their own staff

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Vendors were open to external support with their customers – they also suggested ideas to interface at scale and reduce costs

Provide support at the practices

- Workflow optimization

- Outreach and wrap-around training

- Need for clinical consulting; workflow, data use, optimization

- Note: some vendors welcome help in the field but will handle upgrades themselves

Provide financial support

- Provide funding and financial assistance to offset interface development costs

- Facilitate interfacing at scale to reduce cost to providers

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Recommendations

The MA statewide HIE program has a number of levers available to ease last mile integration

	MeHI	EOHHS
Communication with providers	(Include in communication plan)	(Include in MassHealth communication plan)
Grants to providers	X	
Integration support to providers	X	(Some through Orion)
HIE pricing		X
Communication with vendors	X	X
Grants to vendors	X	
Technical guidance to vendors	(communicate EOHHS technical guidance)	X

Recommendations

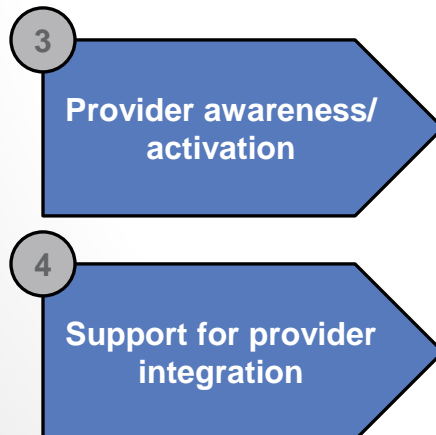## Last Mile Management Office can launch both supply-side and demand-side programs to act on these levers

Supply-side programs

Program description

1 **Vendor awareness/activation**

- Activate leading MA vendors through direct engagement
- "Sell" the vendors on why they should work with MA
- Build market demand for statewide HIE connectivity

2 **Managed procurement of development**

- Provide vendors easy to use information resources
- Provide vendors with forums for learning and asking questions
- Purchase interface development on behalf of MA providers

Demand-side programs

3 **Provider awareness/activation**

- Integrate provider engagement program with overall communications plan
- Work at all levels to engage providers to join statewide HIE

4 **Support for provider integration**

- Grants to providers for integration costs
- Technical support to manage provider-side of EHR integration

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Activate leading MA vendors through direct engagement and indirect demand building

- Build upon the EHR landscape assessment reach-out with follow up meetings

- "Sell" the vendors on why they should work with Massachusetts:

  – Leading program in the country for directed exchange

  – Following national standards where they exist and informing national standards where they do not

  – "Leverage-able" learning and development that may be re-applied across the country

- Build market demand for statewide HIE connectivity

  – Approach vendors on behalf of their entire Massachusetts customer base

  – Coordinate with targeted provider leaders to reinforce demand for HIE connectivity

- Simultaneously engage the Partners and Beth Israel Deaconess regarding connectivity of their self-developed EHR systems

Support vendors with easy to access, easy to use documentation and forums for learning and questions

- Provide vendors easy access to all critical documentation including:
  - Overall strategy and design for statewide HIE
  - Phase specific technical specifications and implementation guide
  - Workflow overview, use cases, transaction types, and document types
  - Pertinent "rules of the road" and summary of key privacy & security policies and procedures
- Organize an ongoing vendor roundtable series
  - Invite leading vendors and open forums to all vendors
  - Ensure that project leaders/decision makers and technical experts are present from the statewide HIE project team (including Orion, EOHHS, MeHI)
  - Facilitate a forum for information dissemination, Q&A, and joint problem solving
- Provide direct lines of communication with well informed technical integration experts and HIE domain experts

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Purchase interface development on behalf of the majority of Massachusetts providers

- Purchase interface development on behalf of the majority of Massachusetts providers

  - Group purchase of interface development is required to align vendor development timelines with the MA statewide HIE launch and rollout

  - This approach is the most efficient way to drive down integration costs, speed deployment, and lower adoption barriers for thousands of providers

- Program may be structured many different ways but guiding principles should be as follows:

  - Program should be simple and easy for providers to enroll in

  - Funding for program should be sufficient to incent vendors to depart from current product development roadmaps and prioritize the MA project

  - Program should be limited to providers that have a substantial customer base as defined by the Pareto analysis or solicited through an application process

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Recommendations | Provider Engagement

Integrate provider engagement program with overall communications plan – engage aggregators to help

- Integrate provider engagement program with overall communications plan
  - High level goal for communications plan should be to inform, educate, and activate providers to interface with the statewide HIE
  - Follow a structured communications strategy to meet this goal
- Engage provider aggregators to help (ACOs, PHOs, IPAs, HIEs, communities, membership organizations, vendors)
- Coordinate the "go to market" efforts among vendors, EOHHS, and the HIE vendor
  - Delineate roles and responsibilities and open and maintain lines of communication among partners
  - Share core message content: *What is the statewide HIE?, How does it work?, Why is it valuable to me?, When will I be able to connect?, What do I have to do next?, Who should I talk to?*
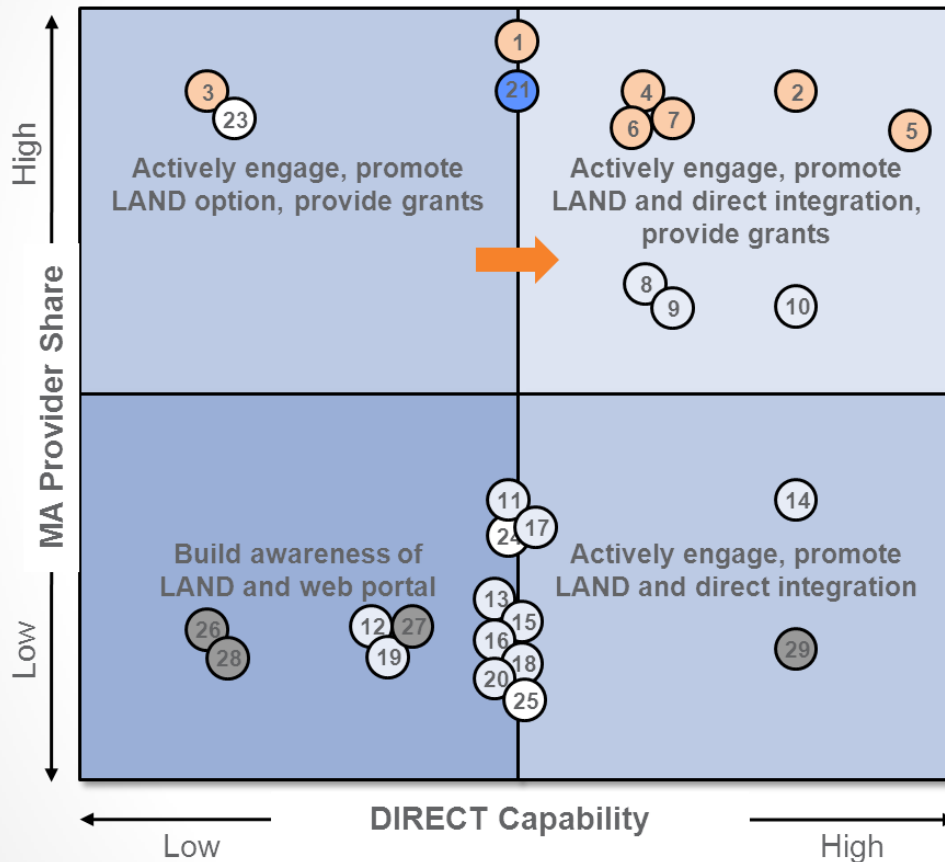
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Provide interface and training support either directly or through provider organizations

- Support provider organizations to connect to the statewide HIE – suggest 2 deployment models:

- Direct support: Work in concert with vendors, EOHHS, and Orion to provide interface and training wraparound support to providers
  - Offer "Implementation Optimization Organization" like services to providers including Clinical consulting, Workflow optimization, Outreach and wrap-around training
  - Note: The vendors interviewed welcome help in the field but will handle upgrades themselves

- Indirect support: Provide funding to organizations that have internal capacity to provide interfacing and training support to their own providers

Thoughtful orchestration of levers will connect the largest number of providers in the shortest amount of time
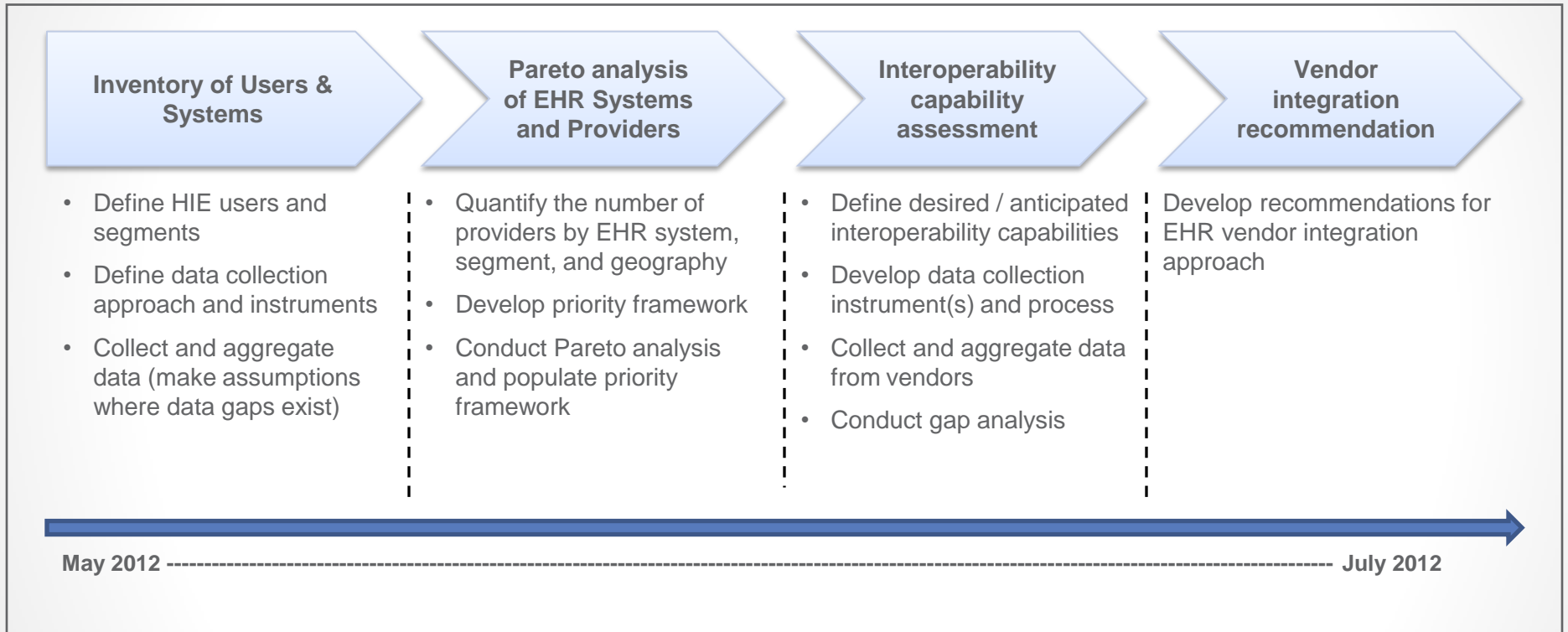
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Project Approach | Project overview and goals

The overarching goal for this project is to determine where the Last Mile Management Office (LMMO) can have the greatest impact interfacing the statewide HIE services with the Commonwealth's providers and provider organizations. MeHI has identified the following specific goals for the project:

- Identify the EHR vendors with products currently installed with Massachusetts providers and estimate the market share (as defined by number of providers served) by provider segment for the vendors that have a significant presence.

- Rank EHR vendors by provider segment

- Identify and categorize the HIE users and their currently anticipated deployment configurations. (For this initial phase, MeHI is focusing only on those providers that are currently using an EHR system.)

- Assess and document the current development timeline of major EHR vendors for offering customers production ready software versions that are compliant with both stage 2 meaningful use and Direct.

- Identify specific EHR integration recommendations to inform the LMMO strategy

Inventory of Users & Systems	Pareto analysis of EHR Systems and Providers	Interoperability capability assessment	Vendor integration recommendation
• Define HIE users and segments • Define data collection approach and instruments • Collect and aggregate data (make assumptions where data gaps exist)	• Quantify the number of providers by EHR system, segment, and geography • Develop priority framework • Conduct Pareto analysis and populate priority framework	• Define desired / anticipated interoperability capabilities • Develop data collection instrument(s) and process • Collect and aggregate data from vendors • Conduct gap analysis	Develop recommendations for EHR vendor integration approach

May 2012 -- July 2012

Massachusetts Medical Society — Every physician matters, each patient counts.

MHA Massachusetts Hospital Association — The leading voice for hospitals.

Massachusetts Senior Care Association

Massachusetts Psychiatric Society

Massachusetts Health Data Consortium

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Many organizations worked closely together to reach out to providers and to gather input and information

- The Massachusetts Medical Society reached out to a broad range of providers (~13,000) with a provider survey
- The Massachusetts Hospital Association reached out to the hospital CEOs and CIOs with a survey
- The Massachusetts Senior Care Association reached out to Long Term Care facility managers with a survey
- The Massachusetts Psychiatric Society reached out to behavioral health providers with a survey
- The Massachusetts Health Data Consortium facilitated a session to brief members
- The Massachusetts eHealth Institute provided data from MassHealth (Medicaid) and the Regional Extension Center

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HIE User Segment	Data Collection Partner	Data Collection Vehicle	Data Collection Target
Hospitals	Massachusetts Hospital Association +Direct outreach	Survey	Hospital CEO, CIO, and delegates
Practices that are employed by Hospitals or closely affiliated for purposes of shared HIT services	Massachusetts Hospital Association	Spreadsheet template	Hospital CEO, CIO, and delegates
Large Practices that are not employed by Hospitals or closely affiliated for purposes of shared HIT services	Massachusetts Medical Society, REC data, Medicaid data	Survey Data review	Licensed MA providers
Priority Primary Care Providers (PPCPs)	MeHI REC for existing data	REC Reporting Tool	Practices / Providers
IPAs/PHOs	Massachusetts Medical Society Direct outreach	Survey Interview	Licensed MA providers IPA/PHO Leadership
Medium and Small Practices that are not employed by Hospitals or closely affiliated to Hospitals for purposes of shared HIT services	Massachusetts Medical Society, REC data, Medicaid data	Survey Data review	Licensed MA providers
Long Term Care	Senior Care Association	Survey	LTC Facilities
Behavioral Health	MA Psychiatric Society MHDC Behavioral Health Forum	Survey Supplemental research	Behavioral Health Providers
Public hospitals	DMH - DPH	Interview	DMH/DPH Leadership
Community Health Centers	Massachusetts Medical Society, REC data, Medicaid data	Survey Data review	Licensed MA providers
Pediatricians	Massachusetts Medical Society, REC data, Medicaid data	Survey Data review	Practices / Providers

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Project Approach | Data Collection Approach – EHR Vendors

HIE User Segment	Data Collection Partner	Data Collection Vehicle	Data Collection Target
EHR Vendors	Direct Outreach	Interview	Vendor Chief Technology Officer or equivalent (requires decision making authority and understanding of development timelines) + team

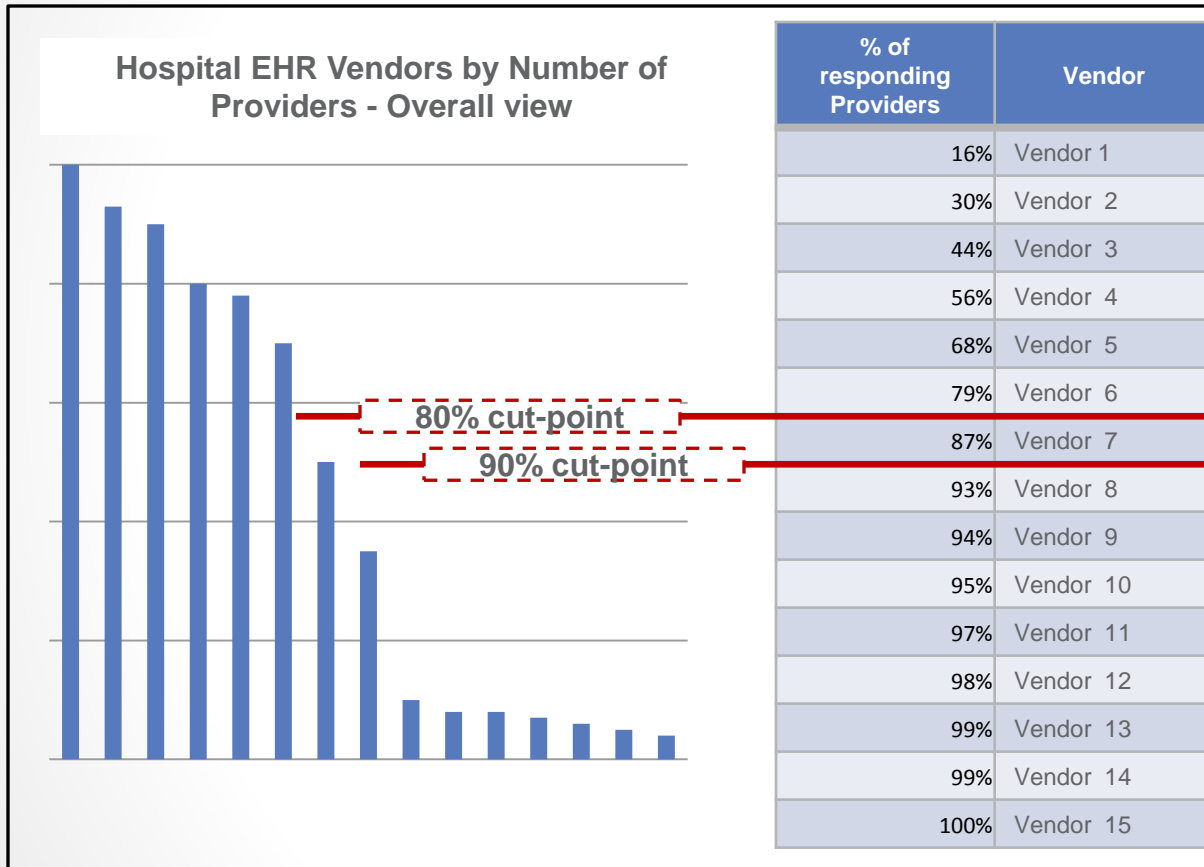| Survey	Responses
Massachusetts Medical Society Survey	538 responses
Massachusetts Hospital Association Survey	36 Hospital responses 194 employed practices represented
Massachusetts Senior Care Association Survey	60 LTC responses 158 LTC facilities represented
Massachusetts Psychiatric Society Survey	163 responses

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Vendor type	# interviewed
Multi-segment vendors	5
Practice based vendors	13
Inpatient only vendors	1
Long term care vendors	3
Behavioral health vendors	2

Project Approach | Data Analysis Approach

- Data was compiled from multiple sources including:
  - MMS Provider Survey
  - MHA Hospital and Hospital Employed Practices Survey
  - SCA Long Term Care Survey
  - MPS Behavioral Health Survey + supplemental research from National Council for Community Behavioral Healthcare and MA Association for Behavioral Health
  - REC data
  - Medicaid data
  - Targeted direct outreach and web search for verification

- Data was overlapping at many levels and required considerable de-duplication and judgment calls were required to resolve conflicting information

- Data was harmonized to enable counts of vendors with multiple names (e.g., Medplus, Care360, Quest)

- Data was flagged for analyses of each segment

- Data was analyzed to create Pareto charts by segment based upon vendor and MA providers served

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Priority Framework (illustrative)

1 Develop Pareto analysis for overall segment and graph vendors by provider count

Hospital EHR Vendors by Number of Providers - Overall view

% of responding Providers	Vendor
16%	Vendor 1
30%	Vendor 2
44%	Vendor 3
56%	Vendor 4
68%	Vendor 5
79%	Vendor 6
87%	Vendor 7
93%	Vendor 8
94%	Vendor 9
95%	Vendor 10
97%	Vendor 11
98%	Vendor 12
99%	Vendor 13
99%	Vendor 14
100%	Vendor 15

80% cut-point

90% cut-point

2 Provide "cut-points" (e.g., Top 6 vendors account for 80% of providers, Top 7 vendors account for 90% of providers)

3 Perform sub-segment analysis by organization size and geography where feasible - identify any discrepancies between overall Pareto and sub-segment Pareto

4 Provide list of top EHR vendors for segment

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Contact:
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617.371.3999

Outtakes from provider survey when asked what help they would find valuable from Last Mile program

"You are deluded if you believe electronic records are safe."

"IT is an extraordinarily expensive undertaking. Savings are fake. IT also a great time and financial vortex for private practices"

"Hard to tell what our IT dept. will want. They are totally immersed in the problems of multiple EHR systems that are user-unfriendly and don't interface well with each other."

"My hope is to retire before I must install an emr; if I must, I would need all the help you mention except workflow redesign support."

"I DO NOT KNOW. I WOULD LIKE TO LEFT ALONE BY FEDERAL & STATE GOVERNMENTS."

"Any help would be appreciated"