



# POPULATION HEALTH MANAGEMENT

2018 MARKET TRENDS REPORT





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# TABLE OF CONTENTS

## CHAPTER 1: EXECUTIVE SUMMARY

<b>Elements of PHM</b> .....	<b>13</b>
<b>Key PHM Market Drivers</b> .....	<b>14</b>
<b>PHM Sub-Markets</b> .....	<b>15</b>
<b>Vendor Approach to PHM</b> .....	<b>15</b>
<b>Vendor Overview</b> .....	<b>16</b>
<b>Key Takeaways</b> .....	<b>18</b>

## CHAPTER 2: PHM MARKET DYNAMICS

<b>What is Population Health Management?</b> .....	<b>21</b>
<b>Goals of Population Health Management</b> .....	<b>22</b>
<b>Who Does Population Health Management?</b> .....	<b>23</b>
<b>Technology Domains for Population Health Management</b> .....	<b>23</b>
Data Aggregation .....	24
Analytics .....	24
Care Management.....	25
Engagement .....	25
<b>Key Market Drivers</b> .....	<b>26</b>
Volume to Value Transition.....	26
Evolving Government Payment Models.....	27
Payer-provider Convergence .....	27
<b>Shift to Lower-Acuity Settings</b> .....	<b>28</b>
Growth of Services for PHM .....	29
<b>PHM Speed to Value for Providers</b> .....	<b>29</b>
<b>PHM Sub-Markets</b> .....	<b>31</b>
Captive Ambulatory Networks .....	31
Independent Ambulatory Networks.....	31
Converged Payer-Provider Networks .....	32
<b>PHM Vendor Types</b> .....	<b>32</b>
EHR.....	33
Analytics .....	34
Care Management.....	34
Data Aggregators .....	34
Payer-Provider .....	35
<b>Key Market Differentiators</b> .....	<b>35</b>
Workflow Integration.....	35

Support for Comorbidities ..... 35

Using All Determinants of Health ..... 35

**Scaling Beyond Pilots..... 36**

**PHM Market Players in 2018 and Beyond ..... 37**

Providers and Others ..... 37

EHR Vendors ..... 37

The Prospect of Disruption for PHM ..... 38

**CHAPTER 3: PHM TECHNOLOGY**

**Vendor Overview..... 41**

Vendor Legacy ..... 42

Full-suite PHM vs. Best-of-Breed ..... 43

    Captive Ambulatory ..... 43

    Independent Ambulatory..... 43

    Payer-Provider..... 44

**Technology Capabilities ..... 44**

Data Sources, Management, and Access..... 44

    Data Sources..... 45

    Data Management and Operations..... 46

    Record Association and Linking ..... 46

    Analyst and Developer Support..... 46

Population Health Management Technology and Automation..... 47

    Network Scope..... 48

    Population Discovery and Definition..... 48

    Benchmarking..... 49

    Quality and Gaps ..... 49

    Cost and Utilization..... 50

    Risk..... 50

    Care Plan Elements ..... 51

    Care Team Worklist..... 51

    Provider Communications ..... 52

    Notifications and Alerts ..... 52

    Cross Organizational Transactions and Transition Support ..... 52

    Caregiver and Patient Communications..... 53

Workflow and Engagement ..... 53

    Patient Self-Management Support ..... 54

    User Access ..... 54

PHM Functional Maturity ..... 54

**Future PHM Functional Developments ..... 56**

Payer-Provider Convergence ..... 56

Prior Authorization ..... 57

Contract Modeling.....	58
Care Transition Modeling.....	58
Safety Analytics Across the Continuum.....	59
Rules-Driven Workflow.....	59
Automated Patient Assignment.....	59
Automated Care Plan Task Generation.....	59
Automated Patient and Caregiver Communication.....	59
Patient Engagement and Relationship Management.....	60
Health Coaching Services.....	60
Adherence in PHM Programs.....	61
Comparative Effectiveness.....	61
G/L Cost Analytics.....	61
Revenue Cycle Management in PHM.....	62
<b>Future PHM Technology.....</b>	<b>62</b>
Cognitive Computing and Machine Intelligence.....	62
Cloud Deployment.....	63
Technology for Complex Information.....	63
Device Support.....	63
Developer Support.....	63
<b>Market and Services.....</b>	<b>64</b>
PHM Consultative Services.....	65
Data Implementation Services.....	65
Workflow Design and Implementation Services.....	65
Clinical Services.....	65
<b>Vendor Profile Guide.....</b>	<b>65</b>
Inclusion Criteria.....	66
Vendor Grades and Ratings.....	66
Letter Grades.....	66
Harvey Ball Ratings.....	66
Market and Services Ratings.....	67
<b>Vendor Product Letter Grades by Sub-Market.....</b>	<b>67</b>
Captive Ambulatory.....	67
Independent Ambulatory.....	68
Converged Payer-Provider.....	69
<b>Vendor Market Letter Grades.....</b>	<b>70</b>
Market Letter Grades.....	70
Execution versus Vision.....	71
Product Capabilities Ratings.....	75

## VENDOR PROFILES

Allscripts .....	80
Arcadia.io .....	83
athenahealth .....	86
Caradigm.....	89
CareEvolution .....	92
Cerner Corporation.....	95
Change Healthcare.....	98
Conifer Health Solutions.....	101
eClinicalWorks .....	104
Enli Health Intelligence.....	107
Epic Systems Corporation.....	110
Evolent Health.....	113
Forward Health Group .....	116
Geneia .....	119
GSI Health .....	122
Health Catalyst.....	125
HealthEC.....	128
IBM Watson Health .....	131
Lightbeam Health Solutions.....	134
Medecision .....	137
NextGen.....	140
Optum .....	143
Orion Health .....	146
Philips Wellcentive .....	149
ZeOmega .....	152

## APPENDICES

<b>Appendix 1 : Scope and Methodology.....</b>	<b>156</b>
<b>Appendix 2: Acronyms Used.....</b>	<b>157</b>

## ABOUT THE AUTHORS

<b>Brian Murphy .....</b>	<b>159</b>
<b>Matthew Guldin.....</b>	<b>159</b>

# TABLES AND FIGURES

## CHAPTER 1: EXECUTIVE SUMMARY

<b>Market Dynamics.....</b>	<b>13</b>
Figure 1.1: PHM Program Elements.....	13
Figure 1.2: Balance of Factors Driving Market for PHM Solutions.....	14
<b>Key PHM Market Drivers .....</b>	<b>14</b>
<b>PHM Sub-Markets .....</b>	<b>15</b>
<b>Vendor Approach to PHM .....</b>	<b>15</b>
Table 1.1: Characteristics of PHM Sub-Markets.....	15
Figure 1.3: Payer Oriented and Provider Oriented Perspectives on Population Health Management	16
<b>Vendor Overview.....</b>	<b>16</b>
Figure 1.2: PHM Product Capability Maturity Assessment.....	17
<b>Key Takeaways .....</b>	<b>18</b>

## CHAPTER 2: PHM MARKET DYNAMICS

<b>What is Population Health Management? .....</b>	<b>21</b>
Figure 2.1: Population Health Management Overview.....	21
Figure 2.2: Population Health Management Program Elements .....	22
<b>Goals of Population Health Management .....</b>	<b>22</b>
<b>Who Does Population Health Management?.....</b>	<b>23</b>
<b>Technology Domains for Population Health Management.....</b>	<b>23</b>
Figure 2.3: Technology for Population Health Management .....	23
Figure 2.4: Analytics for Population Health Management.....	24
Figure 2.5: Care Management Life Cycle .....	25
Figure 2.6: Patient Engagement in Population Health Management.....	25
Figure 2.7: Balance of Factors Affecting Market for Population Health Management.....	26
<b>Key Market Drivers .....</b>	<b>26</b>
Figure 2.8: Payer-Provider Convergence.....	28
<b>Shift to Lower-Acuity Settings.....</b>	<b>28</b>
<b>PHM Speed to Value for Providers .....</b>	<b>29</b>
Table 2.2: External Factors Affecting Speed to PHM Value .....	29
Table 2.3: Internal Factors Affecting Speed to Value .....	30
<b>PHM Sub-Markets .....</b>	<b>31</b>



Table 2.4: Characteristics of PHM Sub-markets..... 31

Table 2.5: Representative Vendors by Type ..... 32

**PHM Vendor Types.....32**

Table 2.6: PHM Vendor Types and Product Emphasis ..... 33

**Key Market Differentiators .....35**

Figure 2.9: New Data Sources for Population Health Management..... 36

**Scaling Beyond Pilots.....36**

**PHM Market Players in 2018 and Beyond .....37**

## CHAPTER 3: PHM TECHNOLOGY

**Vendor Overview .....41**

Table 3.1: PHM Vendor Types, Characteristics, and Vendors Profiled..... 41

Figure 3.1: Vendor Legacy and Approach to PHM..... 42

Table 3.2: Top Vendors by PHM Sub-market and Technology Domain ..... 43

Table 3.3: PHM Functional Groups and Categories..... 44

**Technology Capabilities .....44**

Table 3.4: Data Sources, Management, and Operations Categories and Considerations ..... 45

Table 3.5: PHM Technology and Automation Categories and Considerations ..... 48

Table 3.6: PHM Workflow and Engagement Considerations ..... 54

Table 3.7: PHM Functional Maturity Model ..... 55

Table 3.8: PHM Product Capabilities Maturity Assessment..... 56

**Future PHM Functional Developments .....56**

Table 3.9: Varieties of Payer-Provider Convergence ..... 57

Figure 3.2: The Clinical, Holistic, and Community Care Teams ..... 60

**Future PHM Technology .....62**

Table 3.10: PHM Market and Services Categories and Considerations..... 64

**Market and Services.....64**

**Vendor Profile Guide.....65**

**Vendor Product Letter Grades by Sub-Market .....67**

Table 3.11: Harvey Ball Key ..... 67

Table 3.12: Vendor Product Letter Grades in Captive Ambulatory PHM Sub-market..... 68

Table 3.13: Vendor Product Letter Grades in Independent Ambulatory PHM Sub-market..... 68

Table 3.14: Vendor Product Letter Grades in Payer-Provider PHM Sub-market..... 69

Table 3.15: Vendor Market Letter Grades..... 70

**Vendor Market Letter Grades.....70**

- Figure 3.3: Product Capabilities versus Product Vision – Captive Ambulatory ..... 71
- Figure 3.4: Product Capabilities versus Product Vision – Independent Ambulatory ..... 72
- Figure 3.5: Product Capabilities versus Product Vision – Payer-Provider ..... 73
- Figure 3.6: Market Execution versus Market Vision..... 74
- Figure 3.7: Captive Ambulatory Product Capabilities Ratings ..... 75
- Figure 3.8: Independent Ambulatory Product Capabilities Ratings ..... 76
- Figure 3.9: Payer-Provider Product Capabilities Ratings..... 77
- Figure 3.10: Market Ratings..... 78

## APPENDICES

**Appendix 1 : Scope and Methodology..... 156**

**Appendix 2: Acronyms Used.....157**





# **EXECUTIVE SUMMARY**

# Chapter 1: Executive Summary

Population health management (PHM) has evolved since Chilmark Research released its first PHM report in 2015. The idea's close association with value-based care and payments cements its reputation as both a key strategy and technology enabler for transforming the U.S. healthcare system to achieve the goals of the [Triple Aim](#). Value-based payment models have evolved, though not all providers have participated. Such models are more prevalent among provider organizations than they were a few years ago but the continued viability of fee-for-service (FFS) contracts has restrained enthusiasm for risk sharing. The PHM market's growth closely mirrors the growth in value-based reimbursement (VBR).

Technology solutions, while not entirely mature, are improving, with vendors fielding increasingly robust product capabilities in each of the four domains of PHM functionality: data aggregation, analytics, care management, and patient engagement. That said, an all-in-one PHM platform remains elusive; even solutions that provide capabilities across all four domains don't always appeal to all potential PHM buyers. While there is greater clarity in the market for PHM solutions in 2018 than there was in 2015, healthcare organizations (HCOs) must complete due diligence in choosing solutions to support their PHM strategies.

## ELEMENTS OF PHM

While PHM means different things to different people, it is broadly defined as the transformation of care delivery and payment models for the purposes of improving the health status of a group of patients and, by extension, improving health outcomes for individual patients.

Despite uncertainty about the pace of this transformation, due in large part to provider resistance to taking on financial risk, the range of activities that qualifies as PHM is growing. ACOs, MSSPs, bundled payment programs, Medicare Advantage, certain Medicaid programs, and even value-based employee benefit design all constitute PHM to some degree. Amid this variety of models, PHM programs share some common elements. (See Figure 1.1.)

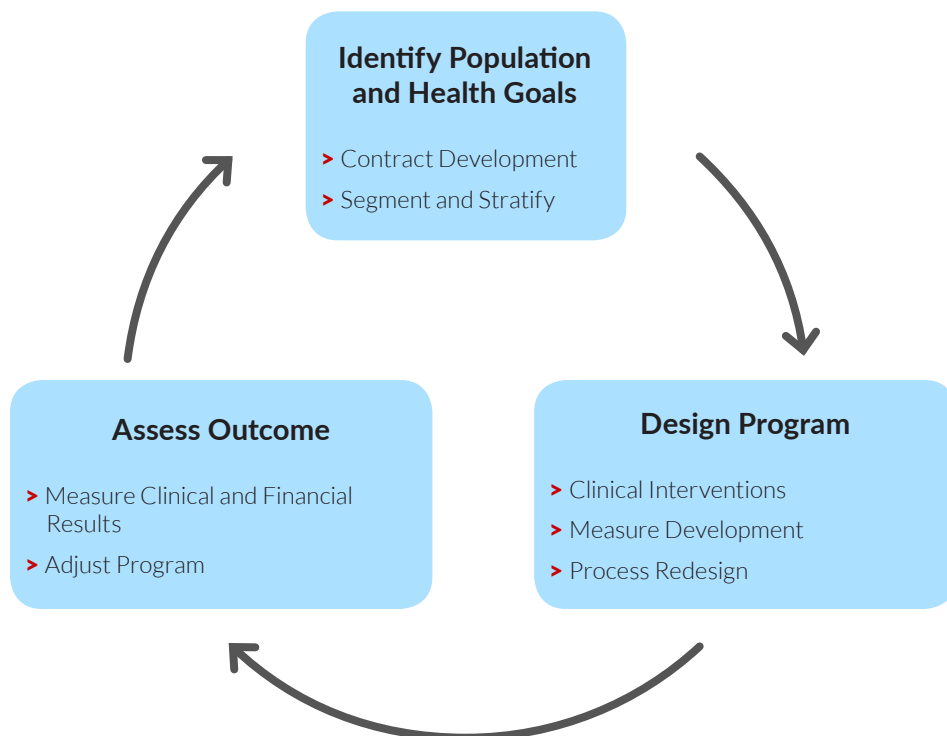


Figure 1.1: PHM Program Elements

The potential for PHM programs to demonstrate value depends on an organization's ability to navigate a complex set of external and internal factors. External factors include the populations and communities they serve, the payers or employers they partner with, and the changing federal regulations that shape how they do business. Internal factors, meanwhile, range from maturity of VBC business strategy to network design to providers' enthusiasm to transition to VBC and PHM. Since so few providers have scaled their PHM programs to the point that they fully address such factors, vendors have supplemented their technology offerings with consulting services that address needs both strategic and tactical needs.

## KEY PHM MARKET DRIVERS

While the ongoing uncertainty emanating from CMS and HHS complicates planning and has led to a pause in PHM adoption, fundamental market drivers will not change, and prospective PHM buyers should be reassured. The reality of unsustainable healthcare spending growth, coupled with the demands of an aging and/or multi-chronic population, guarantees that most healthcare stakeholders are at least open to alternative ways to deliver and pay for healthcare.

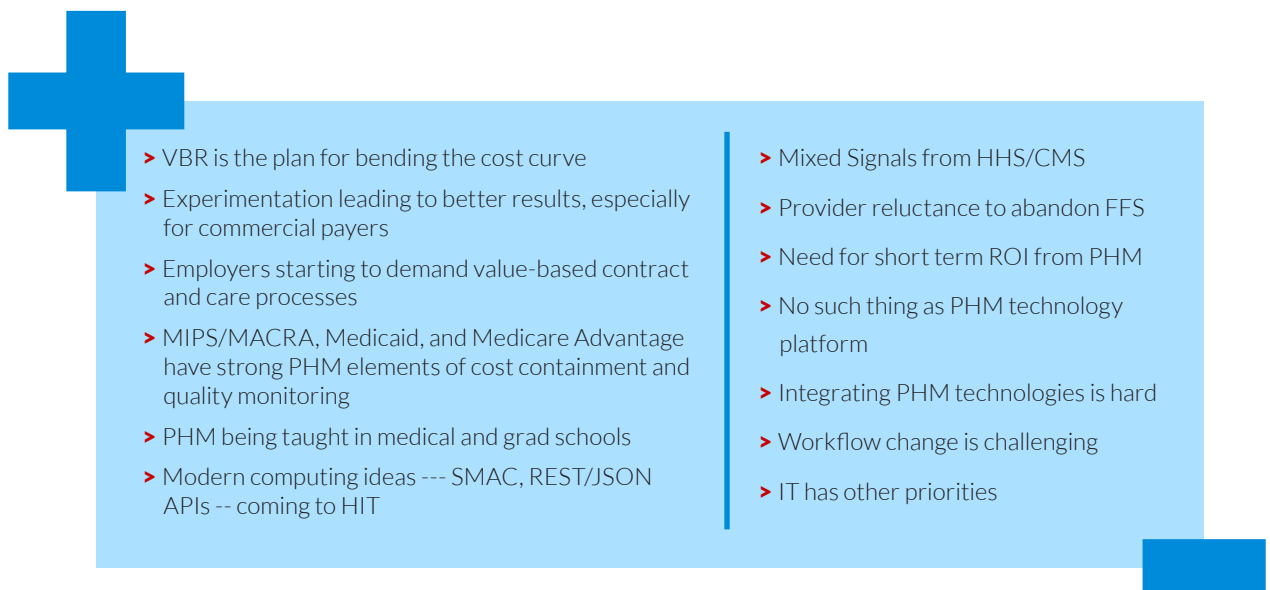


Figure 1.2: Balance of Factors Driving Market for PHM Solutions

The business mandate for providers to embrace PHM slowed in the last 12-18 months. Concerns about revenue or market share losses have dampened enthusiasm for changing the fee-for-service (FFS) status quo. But the overall trend is moving in one direction: Away from FFS. While not all providers and payers have embraced value-based care and payments, the need for enabling PHM solutions will continue to grow.

CFOs and CIOs find it more challenging to find capital for PHM purchases. Restricted access to capital could change some provider expectation for healthcare information technology (HIT) vendors. The prevalence of hosted or cloud solutions in this market tends to make it easier for organizations to put these projects on operating rather than capital budgets. While many vendors have talked about risk-based pricing in the past, live examples have been few and far between. Providers may become more assertive about their vendor's assumption of some payment risk or at least to condition payments on some level of savings.

## PHM SUB-MARKETS

None of the solutions described in this report are applicable or practical across the complete spectrum of organizations and market needs. Within the broader provider and payer market, there exist sub-markets with differing structural features and functional needs. These sub-markets have different governance ideas, competitive concerns, financial resources, IT skills, service needs, and pre-existing infrastructure. Each sub-market is also likely to have different scope in terms of the number of participating providers, the number of attributed lives, or the variety of organizations in the network.

	Captive Ambulatory Networks	Independent Ambulatory Networks	Converged Payer-Provider Networks
Governance and Control	Centralized decision-making	Shared authority and decision-making	Shared authority and decision-making
Size of Organizing Entity	Large to very large	Small to medium	Small to very large
EHR Heterogeneity	Low to medium	Medium to high	Low to high
Attributed Lives	Low to high	Low to medium	Medium to high
Physicians	Owned with moderate turnover	Independent with turnover	Independent with turnover
IT Skills	Medium	Low	Medium
IT Legacy Systems	Significant	Moderate	Significant
Financial Goals	PHM subservient to hospital's goals for revenue and utilization	Mix of PHM and FFS goals	Mix of PHM and FFS goals
Participant Types	Moderately diverse	Diverse	Diverse
Number of participants	Large	Small to Medium	Small to Large

Table 1.1: Characteristics of PHM Sub-Markets

Until recently, most vendors in this report gravitated to captive ambulatory markets. Hospitals and health systems have been more aggressive about embracing risk contracts than independent ambulatory networks of physicians. While captive ambulatory networks currently represent the bulk of buying activity in PHM, independent networks of providers could become a bigger target market as risk contracts become more common. Converged payer-provider networks are emerging as providers establish health plans and payers become more heavily involved with community-based organizations to deliver value-based care.

Thinking about three PHM sub-markets can be a helpful way for buyers to distinguish the value proposition of individual vendors. No vendor in this report has a solution set that is completely appropriate for the needs of all sub-markets. However, many vendors serve specific functional needs across these sub-markets.

## VENDOR APPROACH TO PHM

Vendors in this report address PHM needs with perspectives derived from different experiences. Whether the vendor traditionally sold to provider organizations or payers, nearly all now market their solutions based on the requirements of both providers and payers. While both strive to improve population-level health, they took different paths to that goal.

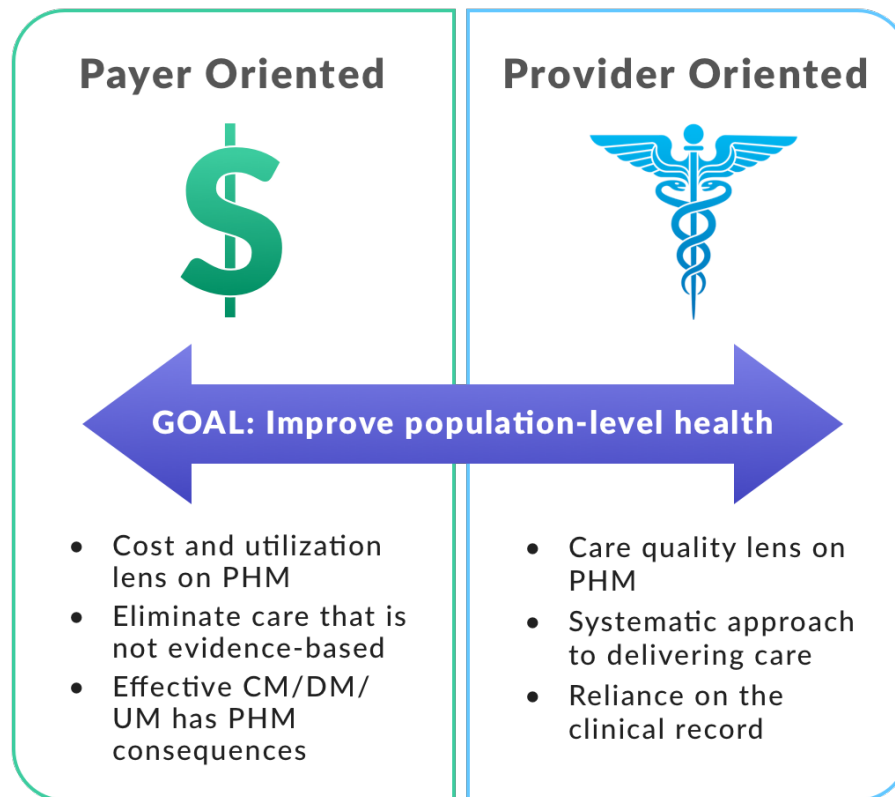


Figure 1.3: Payer Oriented and Provider Oriented Perspectives on Population Health Management

Clinically-oriented vendors approach PHM from a quality of patient care perspective. They aim to improve care quality by identifying and filling care gaps in a population. They reason that focusing on care quality will lead to less process variability, lower costs, and less utilization over time. Higher care quality will delay the onset or slow the progression of disease at an individual level, yielding downstream benefits to population-level health.

Payer oriented vendors approach PHM from a cost perspective. These vendors offer a way to directly control and manage costs, usually through prior authorization workflows and case management discipline. Such direct control addresses spending growth but it also helps concentrate care resources where they can deliver higher quality and better outcomes. The downstream benefits to population-level health come through optimizing the use of care resources and eliminating waste.

## VENDOR OVERVIEW

This report evaluates the technology and services offered by 25 vendors, each of whom falls into one or several vendor categories based on their product history: Electronic Health Records (EHR), Analytics, Care Management, Data Aggregation, or Payer-Provider.

To truly deliver PHM, four technology domains must work in tandem to support the efforts of clinicians, administrators, and patients: data aggregation, analytics, care management, and patient engagement. Vendors that have even average capabilities across these domains tend to support PHM efforts better than vendors that are industry-leading in one or two domains.



This report evaluates 17 product capabilities across the four technology domains. Our conclusion is that current product capabilities are not equal to the demands of the market. On a 1-5 scale, with 1 being Ad Hoc and 5 being World Class (see Chapter 2 for complete description of the scale), only two capabilities in the Analytics technology domain score a 3. All of the other product capabilities we evaluate are either Ad Hoc or Structured. In other words, PHM product capabilities are relatively immature.

Category	Maturity Level
Data Sources	2
Data Management and Operations	2
Record Association and Linking	2
Analyst and Developer Support	1
Network Scope	1
Population Discovery and Definition	2
Benchmarking	1
Quality and Gaps	2
Cost and Utilization	3
Risk	2
Care Plan Elements	1
Care Team Work List	1
Caregiver and Patient Communication	2
Provider Communication	2
Notifications and Alerts	1
Cross-organizational Transactions and Transition Support	1
Patient Self-Management Support	2
User Access	2

Figure 1.2: PHM Product Capability Maturity Assessment

That said, we expect substantial improvements to PHM solutions over the next few years, both to address the shortcomings in current capabilities and to accommodate a range of emerging PHM trends. These include (but are not limited to) the convergence of payer and provider business lines, increasingly sophisticated rules-driven workflows, and a host of new analytics use cases (from patient safety to care plan adherence to cost/utilization). To drive these improvements, we expect PHM vendors to embrace the same technologies that have driven innovation in so many other facets of enterprise computing – machine learning/AI, alternatives to relational databases, broad device/data integration, support for third-party developers, and a fond farewell to client-server software deployments.

# Appendices

## APPENDIX 1 : SCOPE AND METHODOLOGY

To compile this report, Chilmark Research combined extensive primary and secondary research techniques to create a composite profile for each vendor. Primary research was divided into two distinct steps, beginning with soliciting targeted vendors for their involvement in the research. Rather than omit these two important vendors, or perform only the standard secondary research, we were able to gather data on these companies through interviews with HCOs, competitors, and former employees.

We asked participating vendors to complete a questionnaire whose purpose was to collect qualitative and quantitative information about the company and the markets it serves. Questions included among others: 2016 revenue and projected 2017 revenue, number of employees, primary market, number of healthcare entities currently using its solution, and more in-depth questions regarding solution features and functions. As this is a maturing market, many vendors were reluctant to share some metrics regarding their business for competitive reasons. In such situations, we provide estimates based on knowledge of the market, common operational metrics, and a vendor's overall position in the market.

Upon receiving the completed questionnaire, we conducted a follow-up interview with each vendor. These in-depth telephone interviews typically lasted 60 minutes and were for a demonstration and to clarify responses to the questionnaire. This portion of the research effort also focused on topics that cannot easily be captured within the context of a written questionnaire including competitive positioning, product roadmap, partnership strategy, and which solution features are most attractive to prospective customers.

Chilmark Research performed a final analysis of the vendors via secondary research and telephone interviews with end users and consultants that have advised on, deployed, or used a vendor's system. This information was compiled to provide the in-depth reviews and ratings of the profiled vendors. Prior to publication, all vendors were given an opportunity to review their profile narratives (not rankings) for fact checking. Their comments and feedback were considered and where relevant, incorporated into the final profile narratives.

In compiling this extensive report, Chilmark Research maintained absolute objectivity throughout the entire research process and it is our sincere hope that this report brings greater clarity to this developing market.

## APPENDIX 2: ACRONYMS USED

Term	Definition	Term	Definition
ACG	Adjusted Clinical Groups	eCQM	electronic Clinical quality measures
ACO	Accountable Care Organization	ED	Emergency department
ADT	Admit, discharge, transfer	EDW	Enterprise data warehouse
AMC	Academic medical center	EHR	Electronic health record
API	Application programming interface	EMR	Electronic medical record
APM	Advanced practice manager	ETL	Extract, transform, and load
BI	Business intelligence	FFS	Fee-for-service
BPCI	Bundled Payment for Care Initiative	FFV	Fee-for-value
CCD	Continuity of care document	FHIR	Fast Healthcare Interoperability Resources
CCDA	Consolidated CDA	GPRO	Group Practice Reporting Option
CCJR	Comprehensive Care for Joint Replacement	HCC	Hierarchical Condition Category
CCLF	Claims and Claim Line Feed	HCO	Healthcare organization
CCM	Chronic care management services	HEDIS	Healthcare Effectiveness Data and Information Set
CDA	Clinical document architecture	HDHP	High deductible health plan
CEHRT	Certified electronic healthcare record technology	HHS	Department of Health and Human Services
CHF	Congestive heart failure	HIE	Health information exchange
CIN	Clinically integrated network	HIT	Healthcare information technology
CM	Care management	HL7	Health Level 7
CMMI	Center for Medicare & Medicaid Innovation	HQMF	Health Quality Measure Format
CMS	Centers for Medicare and Medicaid Services	HRA	Health risk assessment
CNM	Clinician Network Management	HSA	Health saving account
COPD	Chronic obstructive pulmonary disease	ICD	International Classification of Disease
CPIA	Clinical Practice Improvement Activities	IDN	Integrated Delivery Network
CPC+	Comprehensive Primary Care Plus	IQR	Inpatient Quality Reporting
CPT	Current Procedural Terminology	IRF	Inpatient rehabilitation facility
CQM	Clinical quality metric	IT	Information technology
CVD	Cardiovascular disease	JDBC	Java Database Connectivity
DM	Disease management	JSON	JavaScript Object Notation
DRG	Diagnosis-related group	LOINC	Logical Observation Identifiers Names and Codes
DSRIP	Delivery System Reform Incentive Payment	LPR	Longitudinal patient record
EBM	Evidence-based medicine	LTPAC	Long term and post-acute care
		MA	Medicare Advantage

Term	Definition
MACRA	Medicare Access and CHIP Reauthorization Act
MDS	Long-Term Care Minimum Data Set
MIPS	Merit-based Incentive Payment System
MRT	Medicaid Redesign Team
MSSP	Medicare Shared Savings Program
MU	Meaningful use
NCQA	National Committee for Quality Assurance
NQF	National Quality Forum
ODBC	Open database connectivity
OLAP	Online analytical processing
OLE	Object linking and embedding
ONC	Office of the National Coordinator
OON	Out of network
P4P	Pay for performance
PA	Prior Authorization
PAC	Post-acute care
PBM	Pharmacy benefits manager
PCMH	Patient-centered Medical Home
PDF	Portable document format
PEPM	Per employee per month
PMPM	Per member per month
PMPY	Per member per year
PPPM	Per provider per month

Term	Definition
PPS	Performing Provider System
PQRS	Physician Quality Reporting System
RAF	Risk-adjustment factor
RCM	Revenue cycle management
RDBMS	Relational Database Management System
REST	Representational state transfer
RUB	Resource utilization band
SDoH	Social determinants of health
SMAC	Social, mobile, analytics, and cloud
SNF	Skilled nursing facility
SNOMED	Systematized Nomenclature of Medicine
SOA	Service-oriented architecture
SOAP	Service-oriented access protocol
SQL	Structured query language
TCM	Transitional care management services
TJC	The Joint Commission
UM	Utilization management
VBC	Value-based care
VM	Value-based payment modifier
VBP	Value-based Purchasing
VBR	Value-based Reimbursement
XCA	Cross Community Access
XDS	Cross-enterprise document sharing
XML	Extensible Markup Language

## About the Authors

### BRIAN MURPHY - SENIOR ANALYST



Brian Murphy joined Chilmark Research as an industry analyst in August 2012 and brings a wealth of experience to the table. He is an outspoken advocate for true interoperability being the key to unlocking the potential of health IT and has centered the majority of his research efforts with Chilmark around this subject. He also currently heads research for the Analytics domain.

Brian has worked in the IT business for over 25 years, beginning his career in the field-sales organization of IBM. He then joined Yankee Group as an analyst, where he managed an enterprise software service and led research on the dynamics of the database market. Leaving Yankee, Brian joined Eclipsys prior to its acquisition by Allscripts in 2010. At Eclipsys, Brian worked with product managers to refine and harmonize value propositions in light of the organization's broader goals.

Brian is a graduate of both Harvard College and Suffolk Law School. When not thinking about health IT, he's a runner and armchair Boston historian.

### MATTHEW GULDIN - SENIOR ANALYST



Mr. Guldin brings with him a diverse array of knowledge and experience about the healthcare industry having worked in a variety capacities including pharmaceutical consulting, medical education, and academic research. Prior to working with Chilmark Research in his current role, Matt worked as an IT analyst monitoring and analyzing emerging trends, technologies, and market behavior in the Healthcare IT industry (HIT) in North America. He worked with such major industry brands as Lumeris, Thomson Reuters and Siemens. It was with the recent Cerner acquisition of Siemens that brought Matt back to the Chilmark family.

Matt is interested in how the HIT industry is gradually evolving from one that accomplished basic administrative and clinical functions to one that begins to enable more dramatic transformational change across the healthcare industry. Mr. Guldin has also held positions at the Managed Health Network (Health Net), Tufts Health Care Institute, the Boston University School of Public Health, and Metaworks, Inc. He holds a MPH with a concentration in Health Services from the Boston University School of Public Health and a B.A. in Biology from Boston University.



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