Health Information Technology

An Assessment of Maryland Acute Care Hospitals

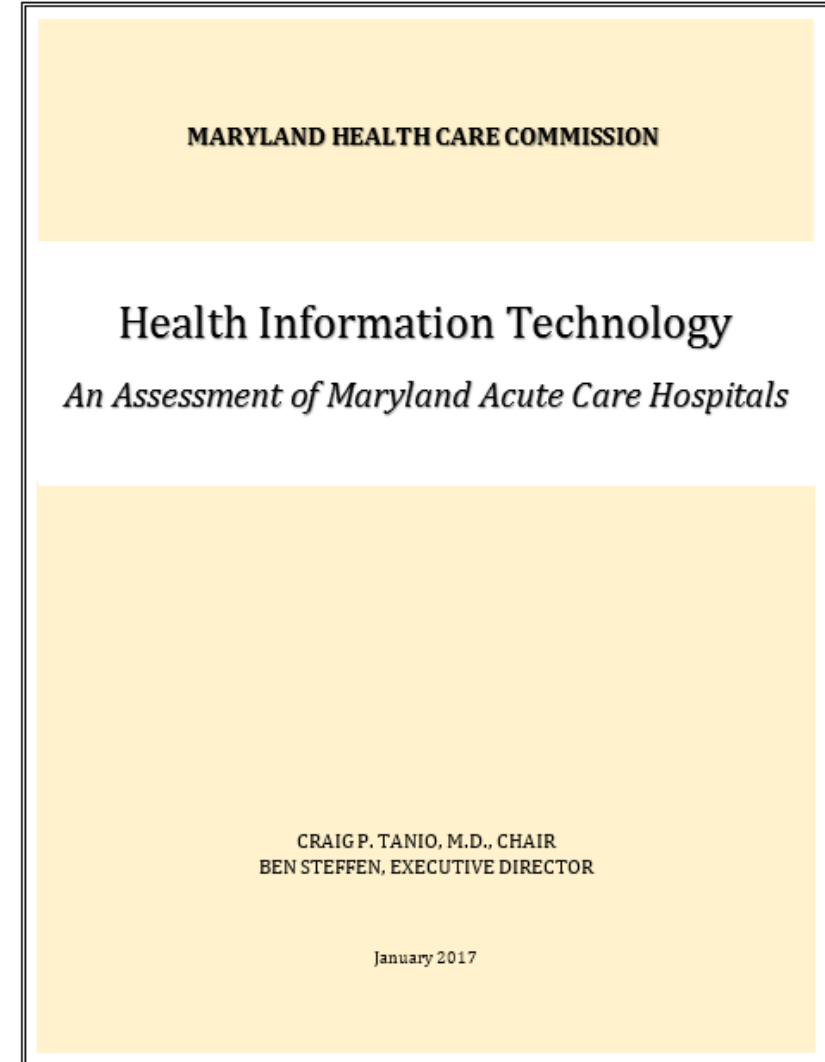Commission Brief

January 26, 2017

The MARYLAND
HEALTH CARE COMMISSION

Summary

- Survey conducted annually to assess diffusion of health information technology (health IT) in acute care hospitals across the State with some comparisons to hospitals nationally

- Modifications are made to the survey each year based on industry trends with a focus on using health IT to support value-based care delivery

- Maryland hospitals have made notable progress in establishing the necessary health IT infrastructure to store, protect, retrieve, and securely transfer electronic health information

- A robust health IT infrastructure is essential for hospitals to achieve health care reform goals under Maryland's All-Payer Model

About the Assessment

- All hospital Chief Information Officers participated specifying hospital adoption and use of health IT and future implementation plans

- New to the report this year is information on hospitals' implementation of mobile applications and utilization of patient portals

MARYLAND HEALTH CARE COMMISSION

Health Information Technology

An Assessment of Maryland Acute Care Hospitals

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January 2017

Key Findings

Electronic Health Records

- **Widespread adoption of EHRs among hospitals in Maryland and the nation**

- **Diffusion of EHRs statewide has increased twofold since 2009**

  - **About 94 percent of hospitals report implementation of EHRs across all clinical departments**

EHRs

100%	
50%	Maryland 100 / Nation 96
0%	

2015 Adoption Rate
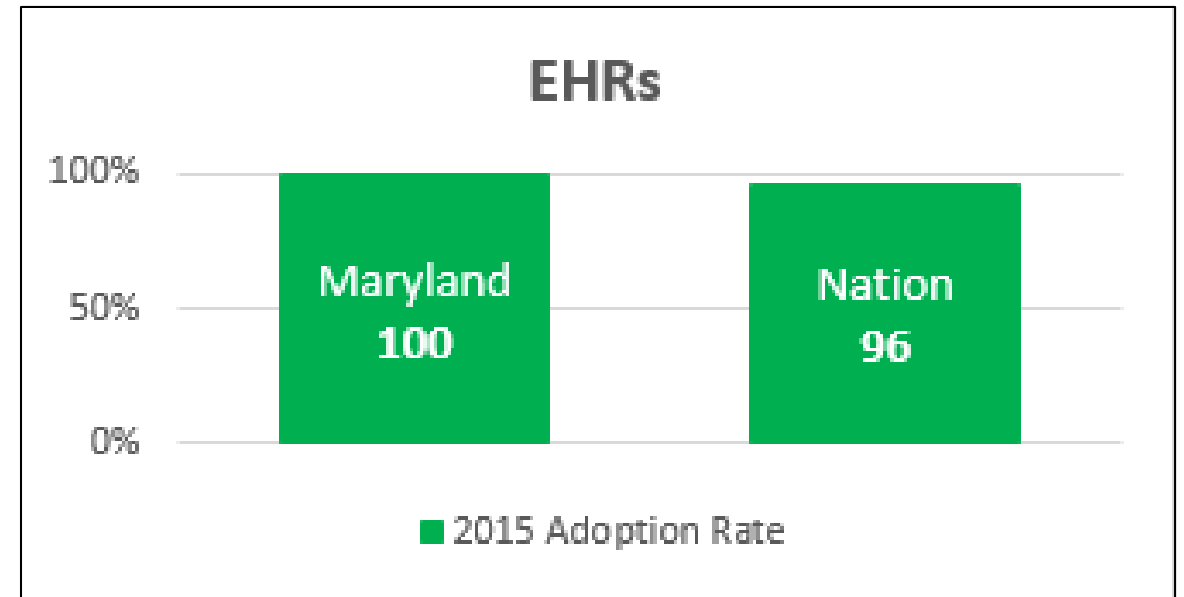
Electronic Prescribing

- **Adoption of e-prescribing has increased more than threefold since 2012**

- **Growth can be attributed to opportunities to improve patient safety, quality of care, efficiency, accuracy, and anticipated cost savings**

- **The 12 non-adopters report they are in the process of implementing the technology**

Electronic Prescribing

100%

75

68

46

50%

22

Growth Rate 53%

0%

2012   2013   2014   2015

—◆— Maryland Adoption Rate
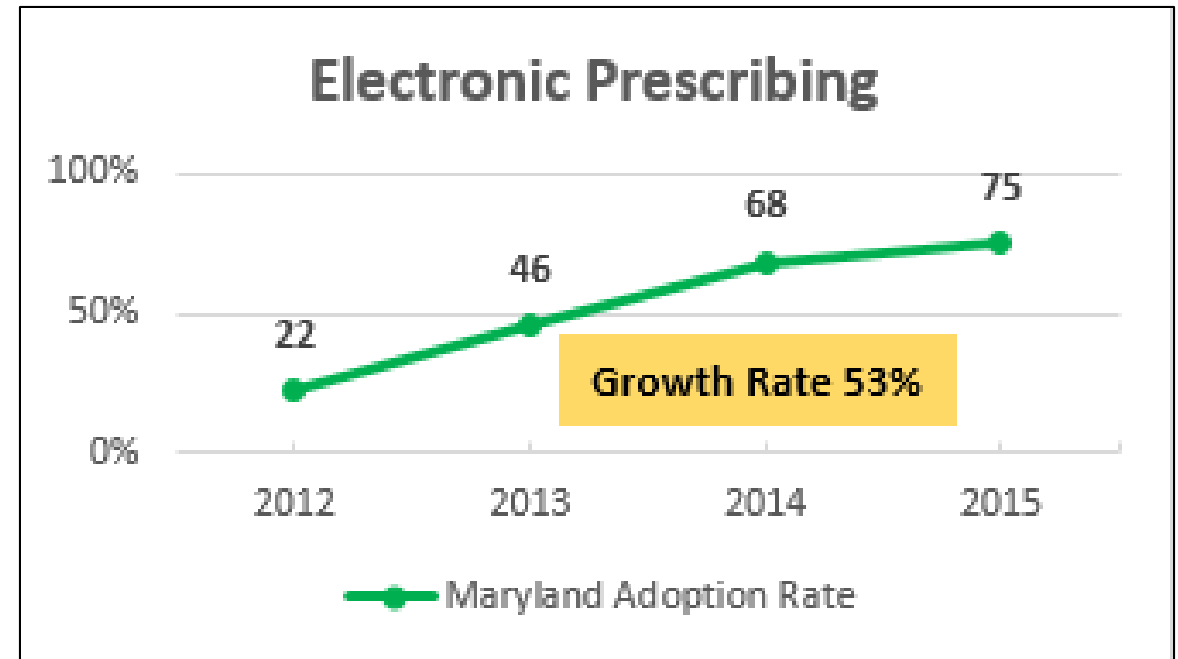
Patient Portals

- **All hospitals have implemented a patient portal and offer a variety of patient engagement functionalities**

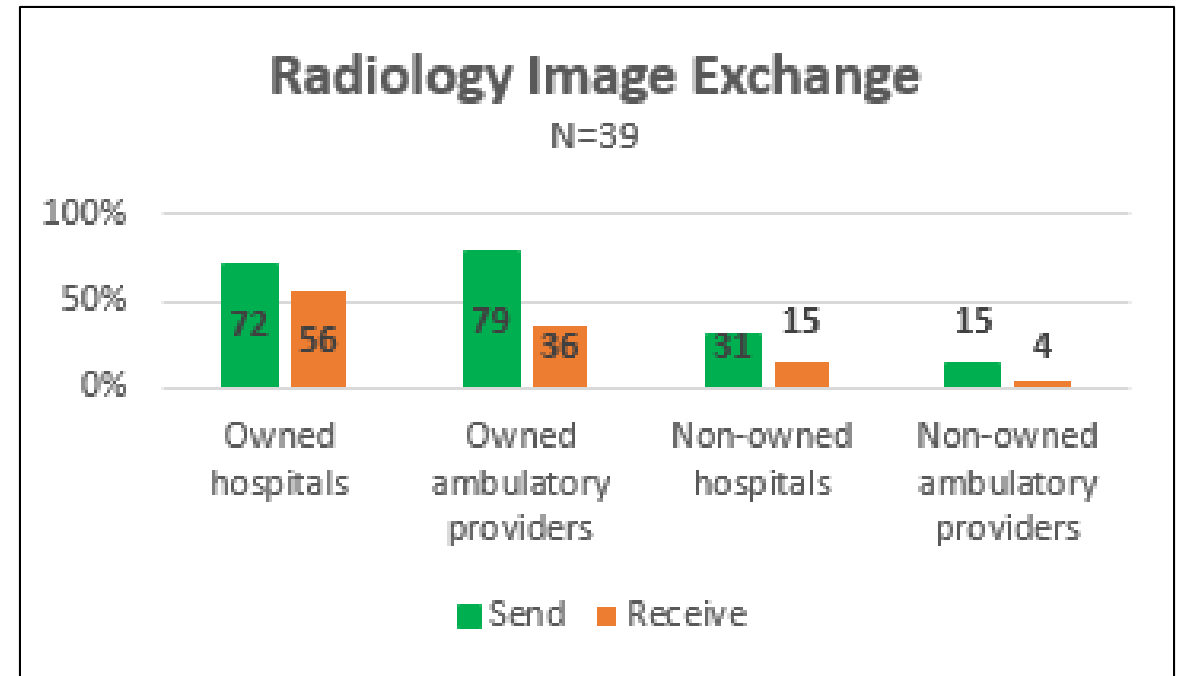- **While growth can be attributed to meaningful use, increasing utilization remains challenging**

Patient Portals		
Hospitals	**Access Provided***	**Patient VDT****
	Average %	
Maryland	88	8
Health Systems	89	10
Community Based	87	6
Nation	88	13
*Numerator is the number of patients that have access to VDT their health information; denominator is the number of unique patients discharged from the hospital.		
**Numerator is the number of patients that VDT their health information; denominator is the number of patients discharged from the hospital.		

Automated Surveillance Technology

- Approximately 65 percent of hospitals have implemented AST

- AST analyzes hospital data to issue reports retrospectively or in real-time about potential outbreaks in infections and the probability of a patient developing an infection

- Six of the 17 hospitals that have not adopted AST are in the process of implementing the technology; the remaining 11 hospitals are undecided

Radiology Image Exchange

- **Nearly 81 percent of hospitals exchange radiology images using electronic systems**

- **Electronic exchange is more common between owned hospitals and ambulatory providers**

- **Five hospitals are implementing an image sharing solution; four do not have plans at this time**

Radiology Image Exchange
N=39

|	Owned hospitals	Owned ambulatory providers	Non-owned hospitals	Non-owned ambulatory providers
Send	72	79	31	15
Receive	56	36	15	4

■ Send ■ Receive

Health Information Exchange

- In addition to the State-Designated HIE, other regional HIEs operate in the State to facilitate local exchange activities

- A total of eight HIEs are registered with MHCC; five are owned and operated by acute care hospitals

  - These HIEs meet the statutory definition of HIE

- Use of an HIE is one method that meets meaningful use requirements for exchanging summary of care records during transitions of care
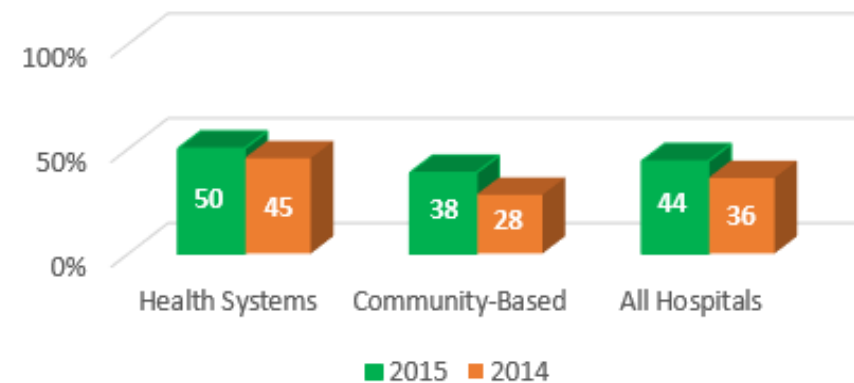
Population Health Management

- **Over three quarters of hospitals have implemented data analytics, a 30 percent increase since 2014**

- **Almost half of hospitals have adopted electronic care plans**

- **Adoption of these tools is more common among health systems**

Adoption of Data Analytics

	Health Systems	Community-Based	All Hospitals
2015	86	69	77
2014	53	47	40
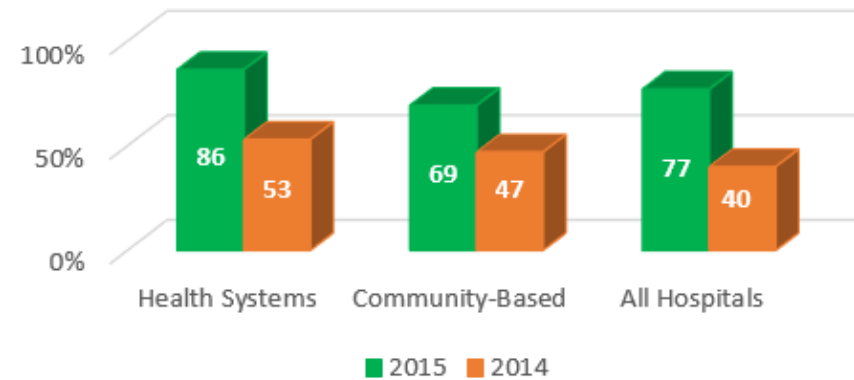
Adoption of Electronic Care Plans

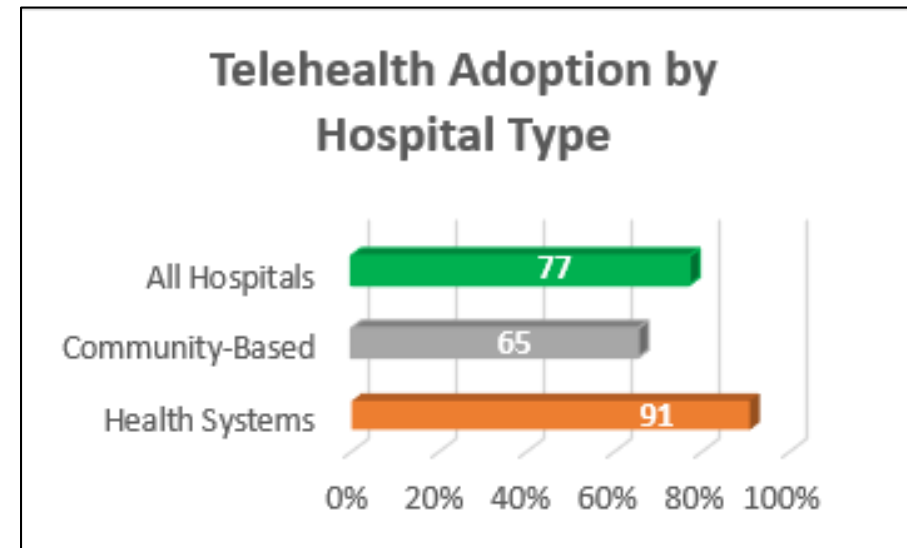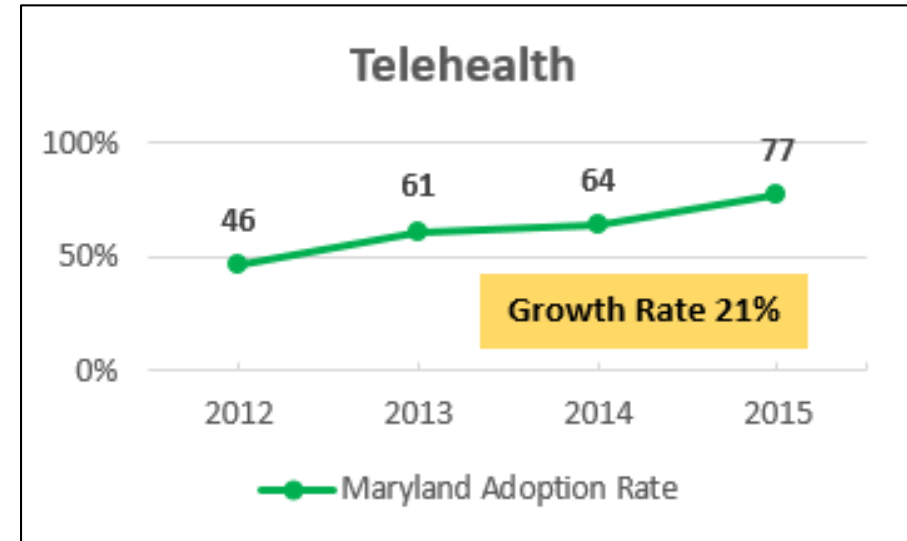|	Health Systems	Community-Based	All Hospitals
2015	50	38	44
2014	45	28	36

Telehealth

- **Interest in telehealth is growing, with adoption increasing over 30 percent in the past four years**

- **Adoption is in various phases from exploratory discussions to deploying telehealth projects in specific specialties, and identifying ways to sustain those projects overtime**

- **All hospitals report that improving quality of care is the leading reason for adopting telehealth**

Telehealth

			77
46	61	64	

Growth Rate 21%

2012 2013 2014 2015

—●— Maryland Adoption Rate

Telehealth Adoption by Hospital Type

All Hospitals — 77
Community-Based — 65
Health Systems — 91

0% 20% 40% 60% 80% 100%

Mobile Applications

- Nearly all hospitals have deployed mobile applications for use by hospital staff

  - Applications to view data from EHRs, including lab results, are most common

- Diffusion of consumer-facing applications is beginning to occur

  - Nationally, about two percent of patients are using hospital mobile applications

  - Leading issues impacting utility of consumer-facing applications are ease of use, health literacy, and patient privacy

Federal EHR Incentive Programs

- **The federal government allocated roughly $27B for the Medicare and Medicaid EHR Incentive Programs to encourage hospitals and other eligible providers to adopt certified EHR technology**

- **Nearly 98 percent of hospitals locally and nationally have demonstrated meaningful use**

EHR Incentive Payments		
Maryland Payments	**Medicare**	**Medicaid**
Total Distributed	$223M	$83M
Average Received (per hospital)	$4.8M	$1.8M

Over the Next Year…

- Continued enhancement to hospital health IT systems to support quality improvement (QI) initiatives that track and share health care delivery performance measures and monitor how refinements in care delivery impact the patient experience and care coordination across settings

- More emphasis on developing patient portals and consumer applications to support QI initiatives that aim to reduce emergency department visits and readmissions

- A greater shift to prepare and manage cybersecurity risks by making it part of the hospital's existing governance, risk management, and business continuity framework
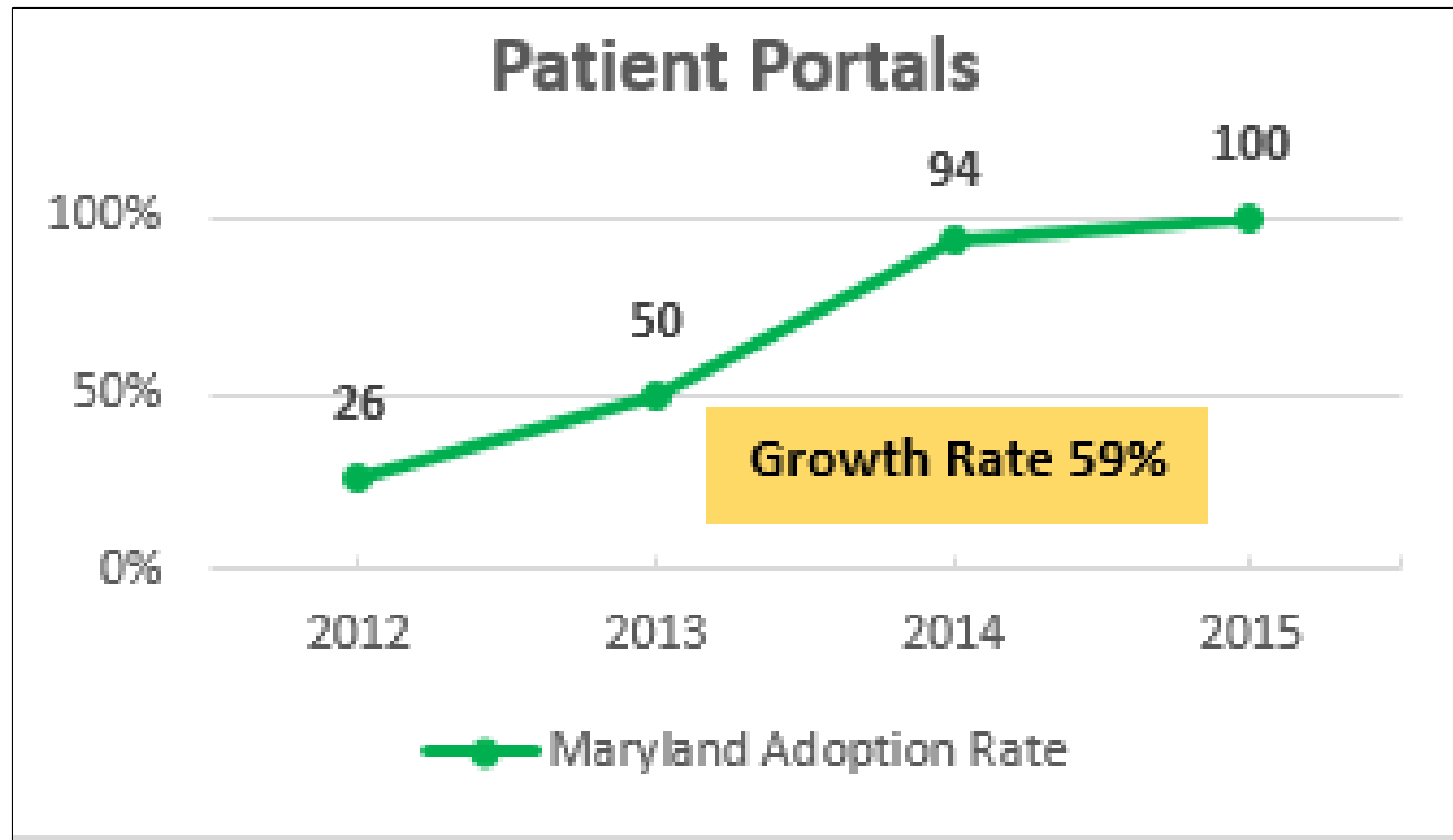
Appendix

Patient Portal Adoption

Patient Portal Functionalities

| Patient Portals			Maryland		Nation[35]
Functionalities			2014 N=47	2015 N=48	2015
				%	
Administrative	Secure messaging*		-	63	63
	Pay bill*		32	54	74
	Pre-register for services*		14	17	-
	Request electronic copy of medical record		27	31	-
	Update insurance information*		16	16	-
Clinical	Access full medical record*		11	15	-
	Access visit summary		93	98	-
	Check test results		91	96	-
	Download information on hospital admission		86	94	-
	Self-management tools for chronic conditions*		20	21	-
	Submit patient-generated data*		16	19	37
	Request prescription refills*		27	44	44
	View patient specific education		-	42	-

Note: An asterisk (*) denotes those functionalities that may exceed the requirements of meaningful use, depending on how each is implemented. A strikethrough (-) denotes data is unavailable.

HIE Registration

Registered HIEs	
1	Adventist HealthCare ▪
2	Calvert Memorial Hospital ▪
3	Children's IQ Network ▪
4	CRISP •
5	Frederick Memorial Hospital ▪
6	Peninsula Regional Medical Center ▪
7	Prince George's County Public Health Information Network
8	Western Maryland Health System ▪
Key: ▪ Hospital-owned • State-Designated	

Note: Children's IQ Network is owned and operated by a specialty hospital; the remaining five are owned and operated by acute care hospitals.

Data Analytics Tools
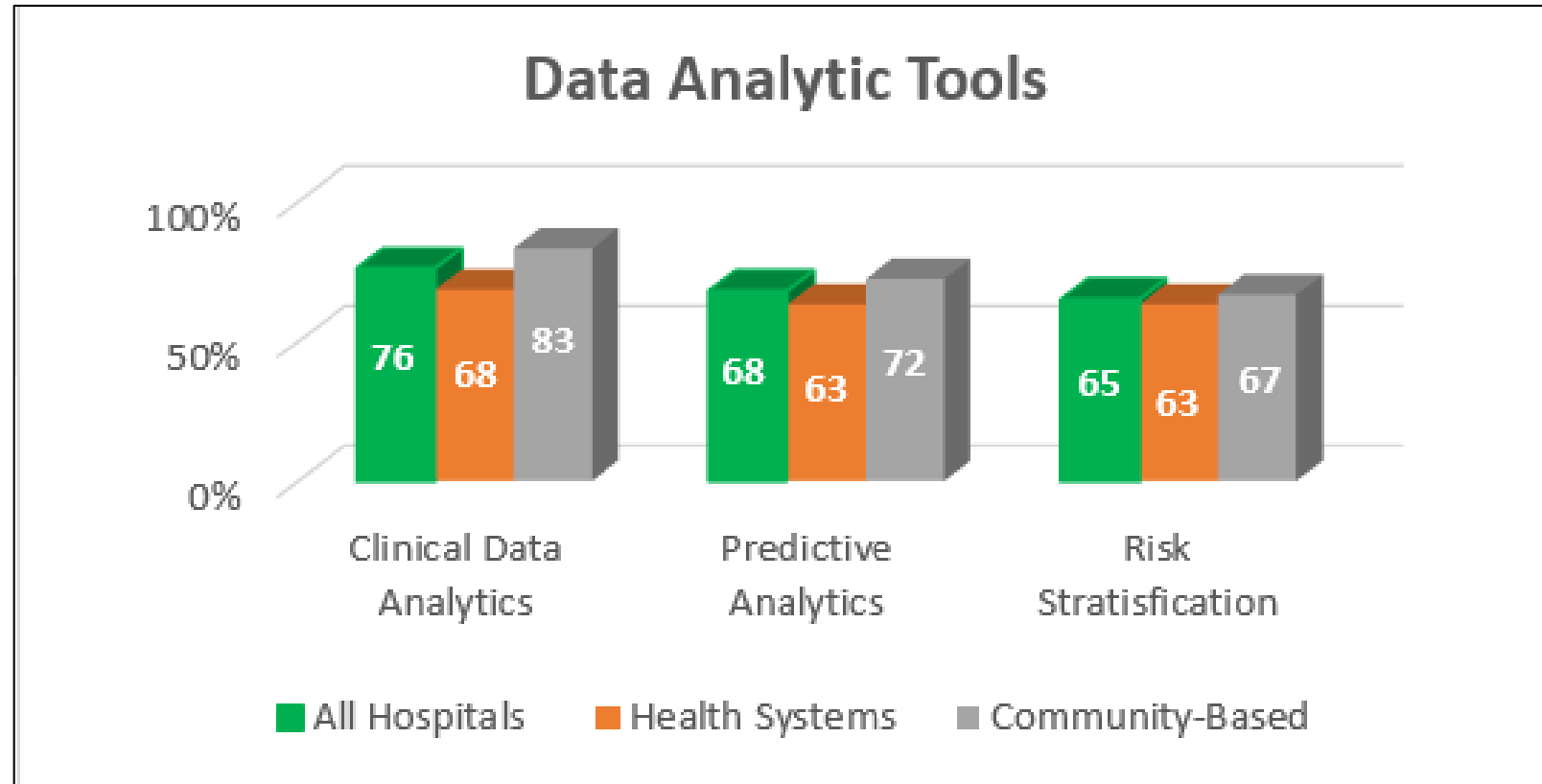
Telehealth Services and Technologies

- **Telehealth services are largely concentrated in teleradiology followed by telediagnosis, teleconsultation, and emergency-based services**

- **A large majority use real-time telehealth technologies**

Telehealth Services	
Service Type	**Hospitals %** N=37
Teleradiology*	76
Telediagnosis	43
Teleconsultation	43
Emergency	35
Telebehavorial Health	22
Remote Patient Monitoring	16
Note: *Excludes after hour radiology solutions, such as Nighthawk services	

Telehealth Technologies	
Technology Type	**Hospitals %** N=37
Real-time	78
Store-and-forward	38

Telehealth – Key Drivers of Adoption

Factors Driving Telehealth Adoption	
Reason	Hospitals % N=37
Improving Quality of Care	100
Increasing Operational Efficiencies	89
Increasing Patient Satisfaction	84
Increasing Physician and Other Hospital Staff Satisfaction	73
Reducing Readmissions	68
Creating Competitive Advantage	51
Increasing Profitability/Revenue	51
Reaching New Patients	46
Cost-Containment Measure	43
Research/Academic	38

Telehealth Implementation

Telehealth Status	
Phase	**Hospitals %** N=37
Under Consideration/Development	11
Pilot	14
Implementation	14
Optimization	19
Sustain	21
Multiple Projects	21

Key:

- **Under Consideration/Development**: Exploring telehealth; telehealth adoption planned by hospital and in some cases, implementation in progress

- **Pilot**: Conducting limited telehealth tests/trials for a limited period of time

- **Implementation**: Incorporating telehealth technology into clinical workflows and educating staff within a hospital department or departments

- **Optimization**: Telehealth technologies fully functional and telehealth services actively being rendered by hospital department(s)

- **Sustain**: Mature telehealth program; secured funding and general cultural acceptance to support telehealth

- **Multiple Projects**: Several telehealth projects underway, which can be in various phases

- **Undecided**: Hospital plans to implement telehealth unknown.

Telehealth Challenges

Telehealth Challenges		
Challenge	**Hospitals %**	
	Adopters N=37	Non-Adopters N=11
Cost to acquire, implement, and maintain telehealth technology	73	100
Integration into existing clinical workflows	78	64
Lack of Reimbursement	54	73
Administrative and physician engagement/buy-in	54	18
Credentialing challenges	51	18
Multi-state licensing requirements	43	36
Sustainability	41	27
Barriers in technical infrastructure	22	55
Secure/HIPAA-compliance	14	27

Mobile Applications – Hospital Staff

Hospital Staff Mobile Applications N=44 %					
EHR	Lab Results	Medical Device Capabilities	Medical Images	Physician Referral/ Directory	Practice Management
84	77	7	57	27	20

- **EHR**: Access EHRs, clinic schedules, patient lists, etc.

- **Lab Results**: View results, such as labs, EEGs, EKGs, etc.

- **Medical Device Capabilities**: Conduct some level of assessment (e.g., an electrocardiogram device to detect abnormal heart rhythms).

- **Medical Images**: View medical images, such as MRIs, PETs, etc.

- **Physician Referral/Directory**: Search for a physician by name, location, or specialty; request appointments or contact physicians; explore services, insurance and billing.

- **Practice Management**: Log and transmit billing information; request prescription refills, etc.

Mobile Applications – Consumer Facing

Consumer-Facing Mobile Applications N=35 %			
Emergency/ Urgent Care	**Medication Tracking**	**Patient Portal**	**Physician Directory**
3	6	100	34

- **Emergency/Urgent Care**: Check ER/urgent care wait times; find nearest ER/urgent care facilities; obtain directions, hours, and contact information.
- **Medication Tracking**: Track medication dosage/intervals; set and receive reminders; learn about medications.
- **Patient Portal**: View health information (e.g., discharge summaries, medications, lab results, etc.) and interact with care teams by scheduling appointments.
- **Physician Directory**: Search for a physician by name, location, or specialty; request appointments or contact physicians; explore services, insurance and billing.

Mobile Applications Challenges

Utilization Challenges with Consumer-Facing Mobile Applications	
Issue	**Reason**
Ease of Use	Unintuitive; hard to comprehend; varying platforms (e.g., iOS, Android, Windows, etc.)
Health Literacy	Varying levels of literacy for end users
Patient Privacy	Highly sensitive data; failure to impart a sense of security and protections to users
Source: Net Solutions, *Top Challenges Facing Mobile Healthcare And How to Overcome Them*, March 2016. Available at: www.netsolutionsindia.com/blog/top-challenges-facing-mobile-healthcare-and-how-to-overcome-them/.	