

European Hospitals EMRAM Maturity Overview

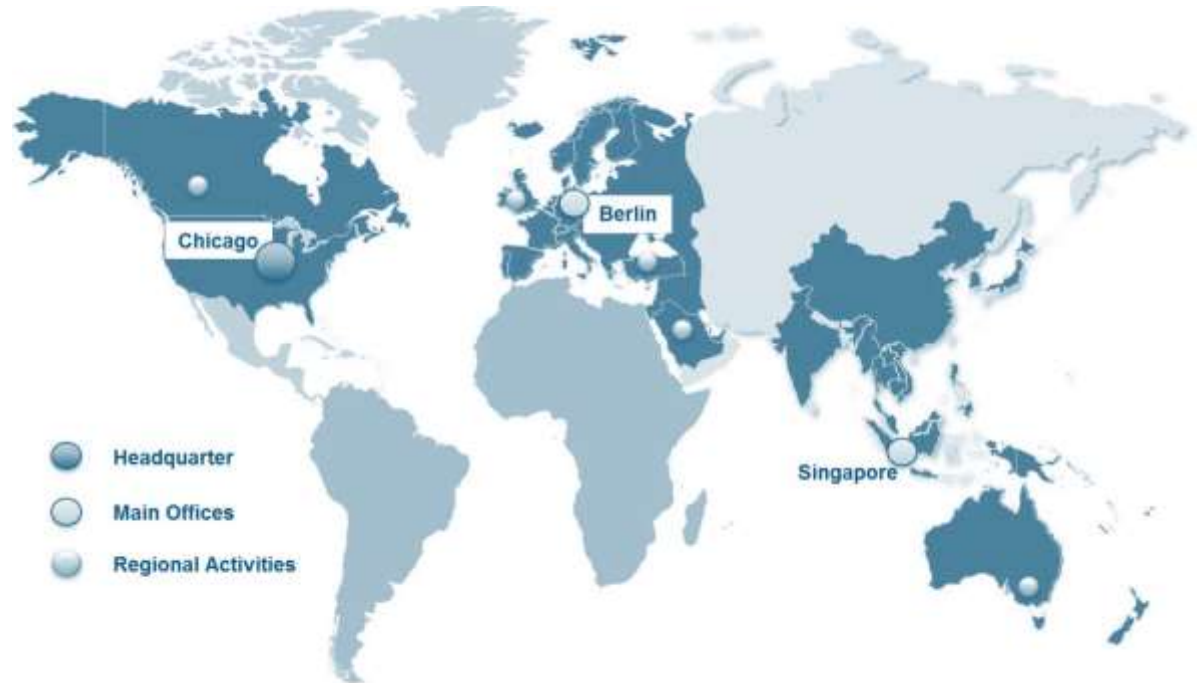


CIO Summit 2015 Session 1

HIMSS WORLDWIDE AT A GLANCE

Mission: Thought leadership for better health engagements and care outcomes through information technology

- Not-for-profit organization founded in 1961, headquartered in Chicago
- Providing global leadership for the use of information technology (IT) to optimize health and care outcomes
- Represents 56,000 individual and 600 corporate members, plus 250 not-for-profit partner organizations with a presence in 200+ countries all over the world



ABOUT HIMSS ANALYTICS

- Wholly-owned, not-for-profit subsidiary of the Healthcare Information and Management Systems Society (HIMSS)
- Collects and analyzes healthcare information related to IT adoption and environments in numerous countries
- Delivers thought leadership, services, and analytical expertise to the Healthcare IT Community
 - ❖ Providers
 - ❖ Government
 - ❖ Vendors
 - ❖ Consultancies

THE EMR ADOPTION MODEL, „EMRAM“

HISTORY OF THE ACUTE CARE EMRAM

- ❖ The acute care EMRAM was developed in 2005

- ❖ Why the structure?
 - It is the typical manner by which hospitals rollout enterprise clinical systems

- ❖ The first Stage 7 validation occurred in Q1 2009
 - Three years+ after EMRAM introduction

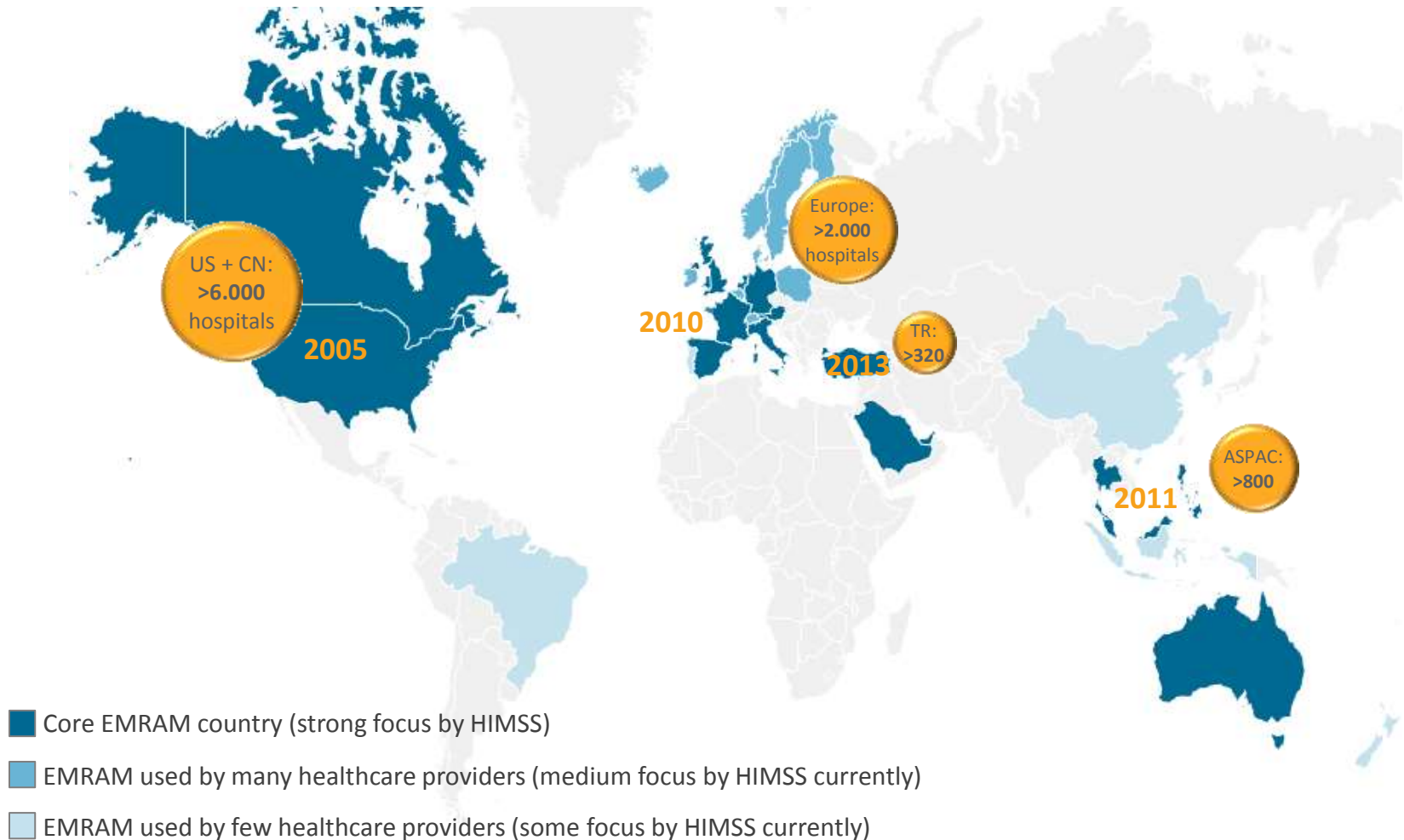
 - At the time the acute care EMRAM was introduced, all the software required was available, somewhere

WHY DO WE DO IT?

- ❖ Provide information on EMR adoption in acute care hospitals
 - What is the status quo?
- ❖ To inform government policy
 - Numerous countries and regions use HIMSS and EMRAM to gather data for their policy formulation
- ❖ To “drive the market”
 - To push the adoption of EMRs (for quality, safety, efficiency... reasons)
- ❖ To benchmark the progress of digitization and identify “best practice” hospitals
 - How does my hospital, region, country etc. compare with others?
 - Where is the market heading, which trends can be seen?
 - From which institutions can I learn something?
- ❖ To identify conditions and/or circumstances that are supporting and stimulating EMR adoption

EMRAM EVALUATIONS ACROSS THE GLOBE

Since 2005 the EMRAM has been used in more and more countries



EMR Adoption ModelSM

Stage	Cumulative Capabilities
Stage 7	Complete EMR, Data Analytics to Improve Care
Stage 6	Physician documentation (templates), full CDSS, Closed loop medication administration
Stage 5	Full R-PACS
Stage 4	CPOE, Clinical Decision Support (clinical protocols)
Stage 3	Clinical documentation, CDSS (error checking)
Stage 2	CDR, Controlled Medical Vocabulary, CDS, HIE capable
Stage 1	Ancillaries - Lab, Rad, Pharmacy - All Installed
Stage 0	All Three Ancillaries Not Installed

“Paperless” patient record environment for **highest quality** of care,

- ↑ Full electronic clinical decision support, **and** highest medication safety
- ↑ Electronic diagnostic image management
- ↑ Electronic order entry with CDS and result reporting
- ↑ Clinical documentation – especially nursing care
- ↑ A patient-centered electronic data repository
- ↑ Electronic diagnostic and pharmacy department information

Care Improvement by EMR Adoption

... clinical value potential of each EMR Adoption Model Stage

Stage 7	Paperless environment enabling data continuity to deliver and manage patient care for all hospital services and supporting coordinated care delivery → Optimized quality of care and patient safety → Optimized clinical operational and business process efficiency
Stage 6	Optimized diagnostic and care delivery efficiency by standard treatment protocols; Further reduction / elimination of medical errors → improved patient safety; Reduced / eliminated paper-based documentation and dictation and transcription costs; Improved billing and coding
Stage 5	Elimination of film reduces costs and need for storage space, image sharing works faster and more efficiently, redundant imaging can be avoided
Stage 4	Improved care delivery efficiency and reduced medical errors with CPOE
Stage 3	Optimised collection of nursing and clinical information; Standardized care delivery → first improvements of care quality
Stage 2	Optimised access to diagnostic results, sharing of patient-information
Stage 1	Improved key dept. operations and access to diagnostic information
Stage 0	Low clinical value; mainly patient administration and hospital management

WHERE ARE STAGE 6 HOSPITALS?

- US, Canada, Ireland, UK, Netherlands, France, Spain, Italy, Switzerland, Belgium, Finland, Sweden, Turkey, KSA, UAE, India, Malaysia, Brazil, Singapore, Australia, China

EMR ADOPTION MODEL AWARDS

... Stage 6 & 7 awarded hospitals in Europe (Summer 2015)



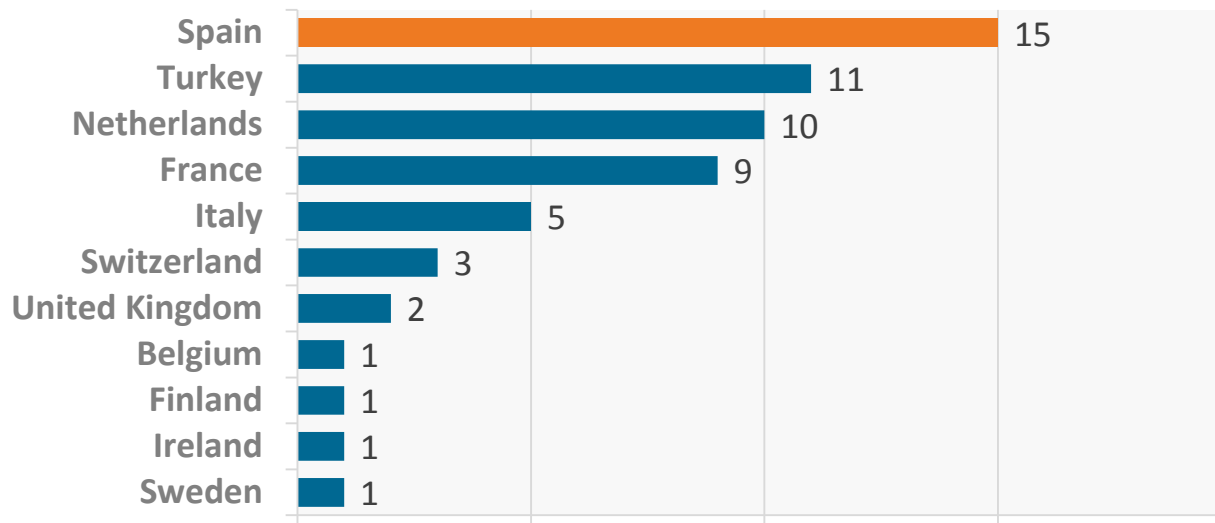
3 hospitals identified across Europe so far:

- Hospital de Dénia Marina Salud S.A., Spain
- University Hospital Hamburg Eppendorf, Germany
- Radboud University Medical Center, Netherlands



59 hospitals identified across Europe so far, of which:

European Stage 6 Hospitals by Country



Cross Country EMRAM Score Distribution# (2015 Q2)

Stage	United States*	Canada*	Austria	Netherlands	Germany*	Italy*	Spain*
Stage 7	3.7%	0.2%	0.0%	0.0%	0.6%	0.0%	0.4%
Stage 6	22.2%	0.8%	0.0%	9.5%	0.0%	1.4%	3.9%
Stage 5	30.8%	0.9%	35.7%	38.1%	11.6%	19.4%	42.4%
Stage 4	13.6%	3.3%	2.4%	3.2%	6.7%	0.9%	5.2%
Stage 3	19.7%	31.4%	0.0%	1.6%	4.9%	4.7%	1.7%
Stage 2	4.3%	30.6%	38.1%	46.0%	23.8%	40.3%	26.2%
Stage 1	2.2%	14.2%	2.4%	1.6%	0.6%	22.3%	6.6%
Stage 0	3.5%	18.7%	21.4%	0.0%	51.8%	10.9%	13.5%

N = 5462

N = 641

N = 42

N = 63

N = 164

N = 211

N = 229

Cross Country EMRAM Score Distribution# (2015 Q2)

Stage	United States*	Canada*	Australia	New Zealand	Singapore	Malaysia	Thailand	Philippines
Stage 7	3.7%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Stage 6	22.2%	0.8%	0.4%	0.0%	77.8%	0.4%	0.0%	0.0%
Stage 5	30.8%	0.9%	6.3%	5.0%	0.0%	6.4%	14.9%	0.0%
Stage 4	13.6%	3.3%	0.7%	0.0%	11.1%	2.6%	0.0%	0.0%
Stage 3	19.7%	31.4%	0.7%	0.0%	0.0%	0.4%	1.1%	0.0%
Stage 2	4.3%	30.6%	72.7%	92.5%	0.0%	2.6%	8.0%	1.4%
Stage 1	2.2%	14.2%	2.2%	2.5%	0.0%	2.1%	24.1%	1.4%
Stage 0	3.5%	18.7%	17.0%	0.0%	11.1%	85.4%	51.7%	97.2%

N =
5462

N = 641

N = 271

N = 40

N = 9

N = 233

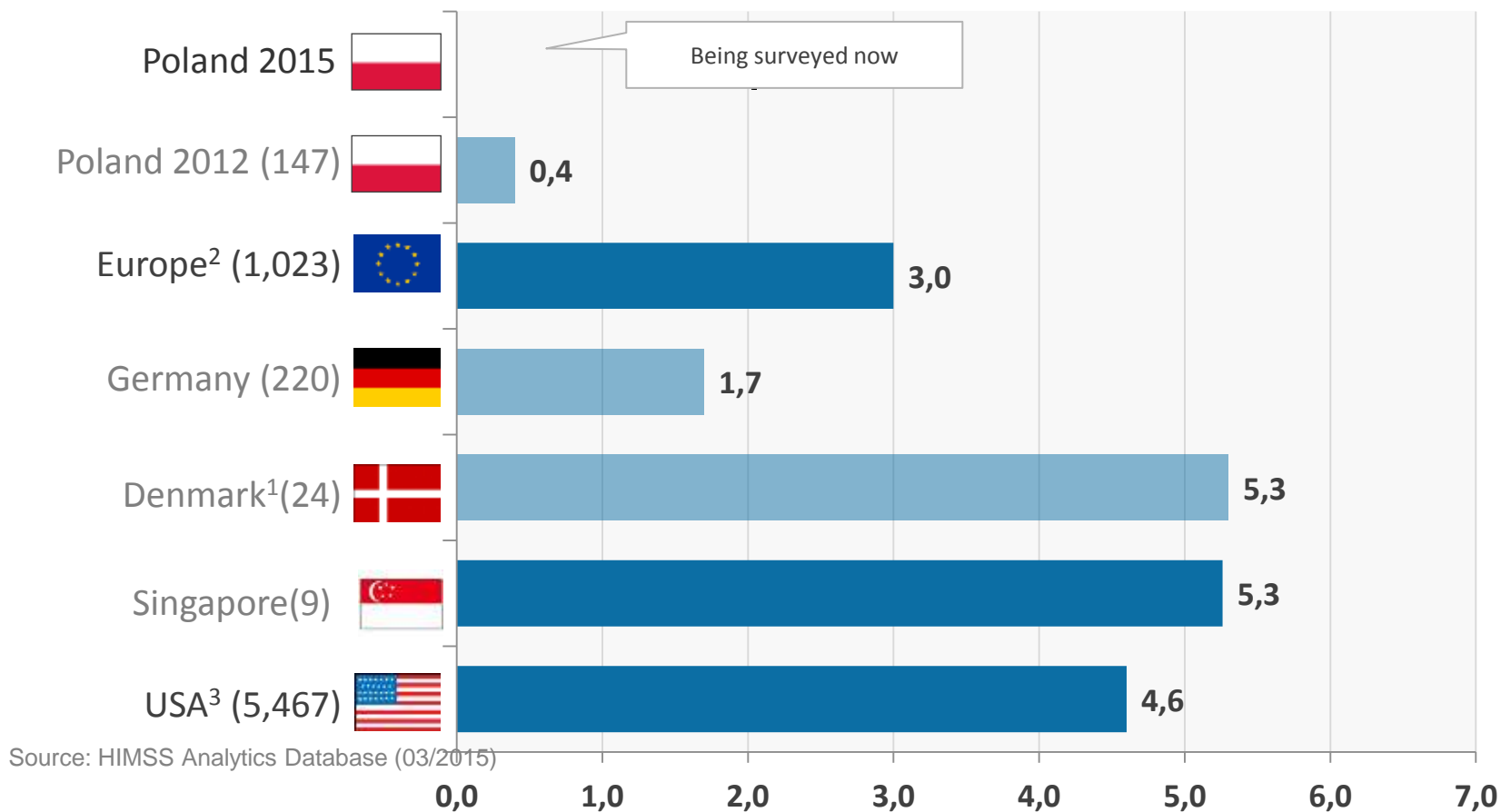
N = 87

N = 72

EMR ADOPTION IN EUROPE AND THE US

... based on HIMSS Analytics EMR Adoption Model

EMR Adoption Model Scores, Means per Country



1) Only public hospitals

2) Excl. Poland; incl. Austria (45), Belgium (9), Denmark (24), Finland (2), France (14), Germany (220), Iceland (1), Ireland (1), Italy (276), Netherlands (62), Norway (3), Poland (3), Portugal (25), Slovenia (2), Spain (222), Switzerland (8), UK (106)

How Long it Takes To Make “Significant” Progress

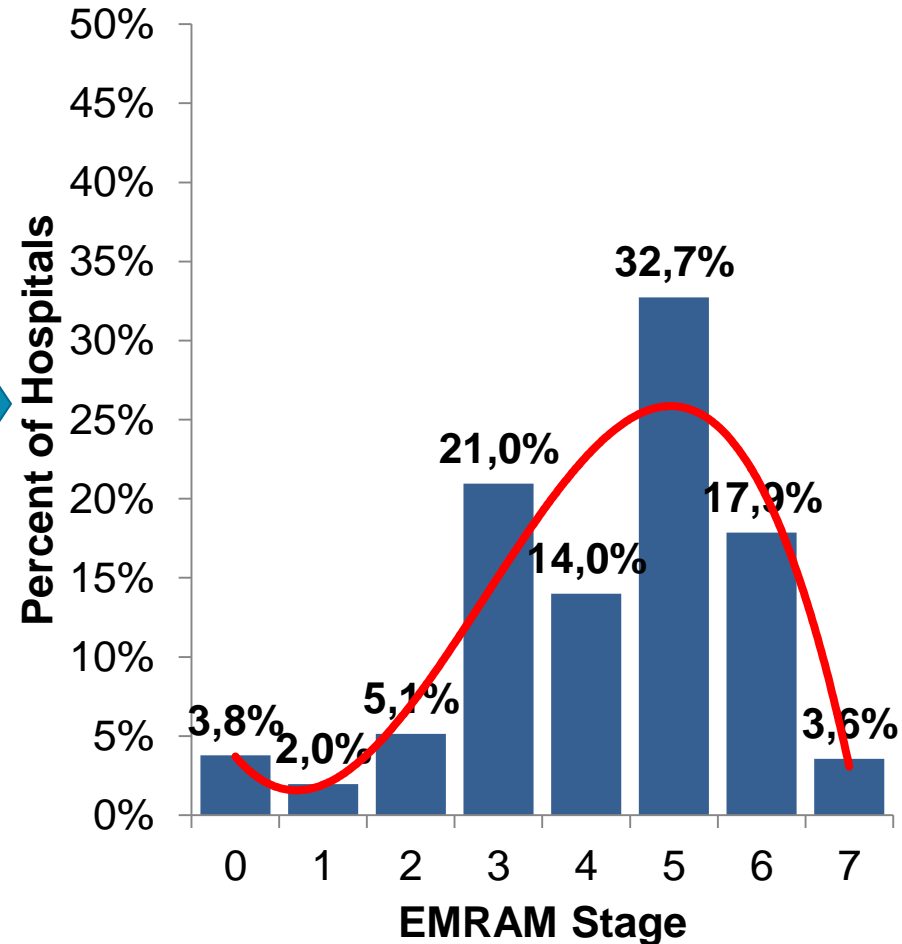
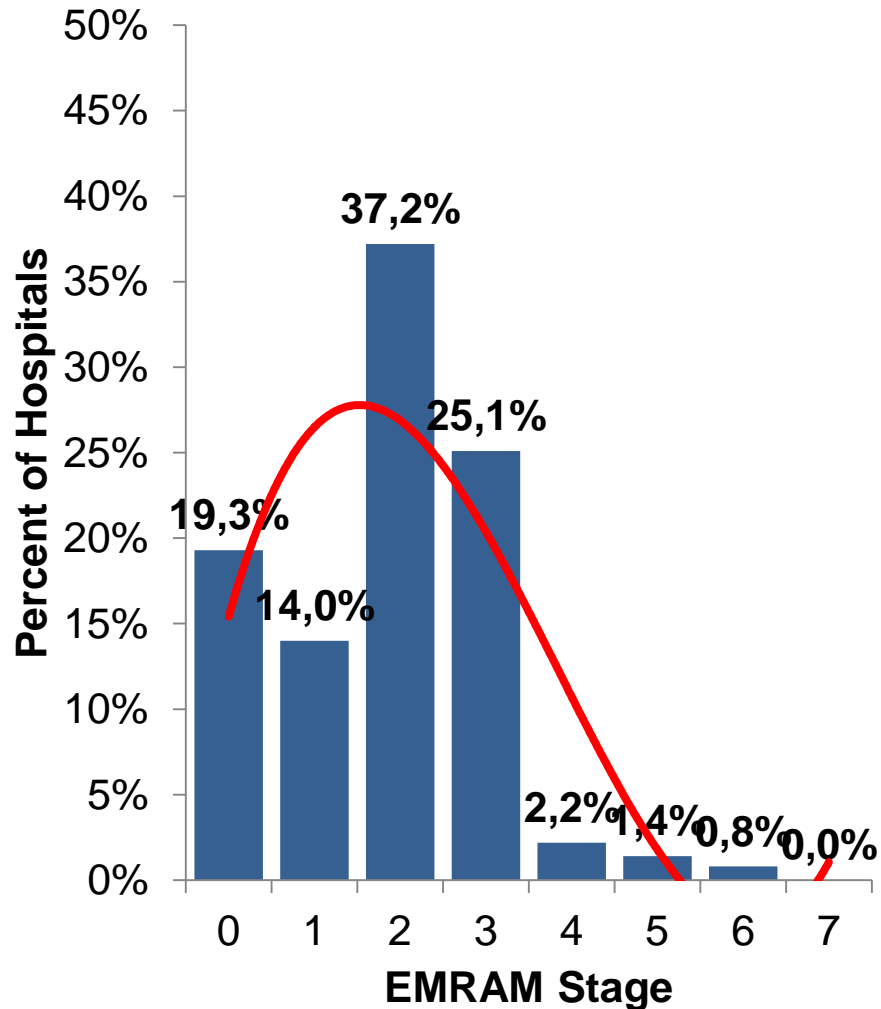
	2006	2007	2008	2009	2010	2011	2012	2013	2014
Stage 7	0.0%	0.0%	0.3%	0.7%	1.0%	1.2%	1.8%	2.9%	3.6%
Stage 6	0.1%	0.8%	0.5%	1.6%	3.2%	5.2%	7.3%	12.5%	17.9%
Stage 5	0.5%	1.4%	2.5%	3.8%	4.5%	8.4%	11.5%	22.0%	32.9%
Stage 4	3.1%	2.2%	2.5%	7.4%	10.5%	13.2%	14.0%	15.5%	14.0%
Stage 3	18.7%	25.1%	35.7%	50.9%	49.0%	44.9%	41.7%	30.3%	21.0%
Stage 2	40.0%	37.2%	31.4%	16.9%	14.6%	12.4%	11.4%	7.6%	5.1%
Stage 1	17.4%	14.0%	11.5%	7.2%	7.1%	5.7%	4.8%	3.3%	2.0%
Stage 0	20.4%	19.3%	15.6%	11.5%	10.1%	9.0%	7.5%	5.8%	3.7%
# of Hospitals	N = 4,237	N = 5,073	N = 5,166	N = 5,235	N = 5,281	N=5,337	N=5,310	N= 5,458	N=5,467

COMPARE US & CANADA

For an Important Lesson in Role of Government

- Same major vendors – Allscripts, Cerner, Epic, Meditech
- Very similar culture Primarily of European decent
- But a completely different financing mechanism
 - Canada: NO federal funding, just federal mandates for care
 - Canada: NO federal funding for acute healthcare IT
 - Result: drastically different e-health investment levels
- **Message: It takes government leadership to drive adoption**

Huge Shift in the U.S. in Seven Years: 2007 - 2014



The Canadian hospital market reflects a decidedly different adoption trajectory

- **Same vendors**
- **Similar culture**
- **Different Financing**



Essentially No Shift 2010 to 2014

