

Overview of International EMR/EHR Markets

Results from a Survey of Leading Health
Care Companies

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About the study

Accenture conducted a study of leading health care software, hardware and services companies to gauge the attractiveness of eight international electronic medical record (EMR) markets of considerable size and EMR maturity. Those markets include Australia, Canada, France, Germany, Japan, The Nordics, Spain and the United Kingdom (UK). Other large markets—namely, India and China—were not studied due to conflicting opinions of overall EMR maturity.

The companies surveyed have a combined market capitalization of more than \$600 billion. As some of the largest software vendors, medical products companies and enterprise software providers in the world, these companies support operations in an

average of more than 90 countries. To account for the leadership of several niche players, we also interviewed a number of more localized companies to refine market-specific insights.

We asked survey participants a series of questions regarding the specific international EMR¹ markets and discussed key trends emerging in each market. Respondents shared deep industry insights as well as general perceptions of international markets based on overall potential, market saturation, local laws and regulations, and cultural norms. This paper summarizes the insights shared and reports the results of specific survey questions. Where appropriate, we have also included secondary data to support our findings.

1. Electronic medical records (EMRs) are defined as patient treatment records, including a patient's background information and history of patient care, maintained within a hospital or clinic. Electronic health records (EHRs) are defined as patient health records that include clinical data and information from multiple sources and that are maintained outside of a single hospital or clinic.

Executive Summary

Market forces will drive growth of global EMR markets at rates ranging from 6.6 to 9.7 percent across North America, Europe, Latin America and Asia Pacific. The global market is slated to be worth \$19.7 billion in 2013:

- North America will experience 9.7 percent growth in its EMR market—from \$7.4 billion in 2010 to \$9.8 billion in 2013. With 5,800 hospitals, EMR adoption is beginning to accelerate due to ARRA incentives and penalties.
- Asia Pacific's EMR market is expected to grow at 7.6 percent.
- Europe, Africa and Latin America will grow at 6.6 percent through 2013 driven by government incentives and a refresh of EMR systems.

Emerging markets may be a primary growth driver globally and may have the potential to implement innovative

technologies, such as cloud-based EMR solutions.

Each country we analyzed represents a distinctive EMR market defined by different health care systems, competitor landscapes and local regulations and laws, requiring customized market entry strategies.

Four trends will have the most impact on EMR growth:

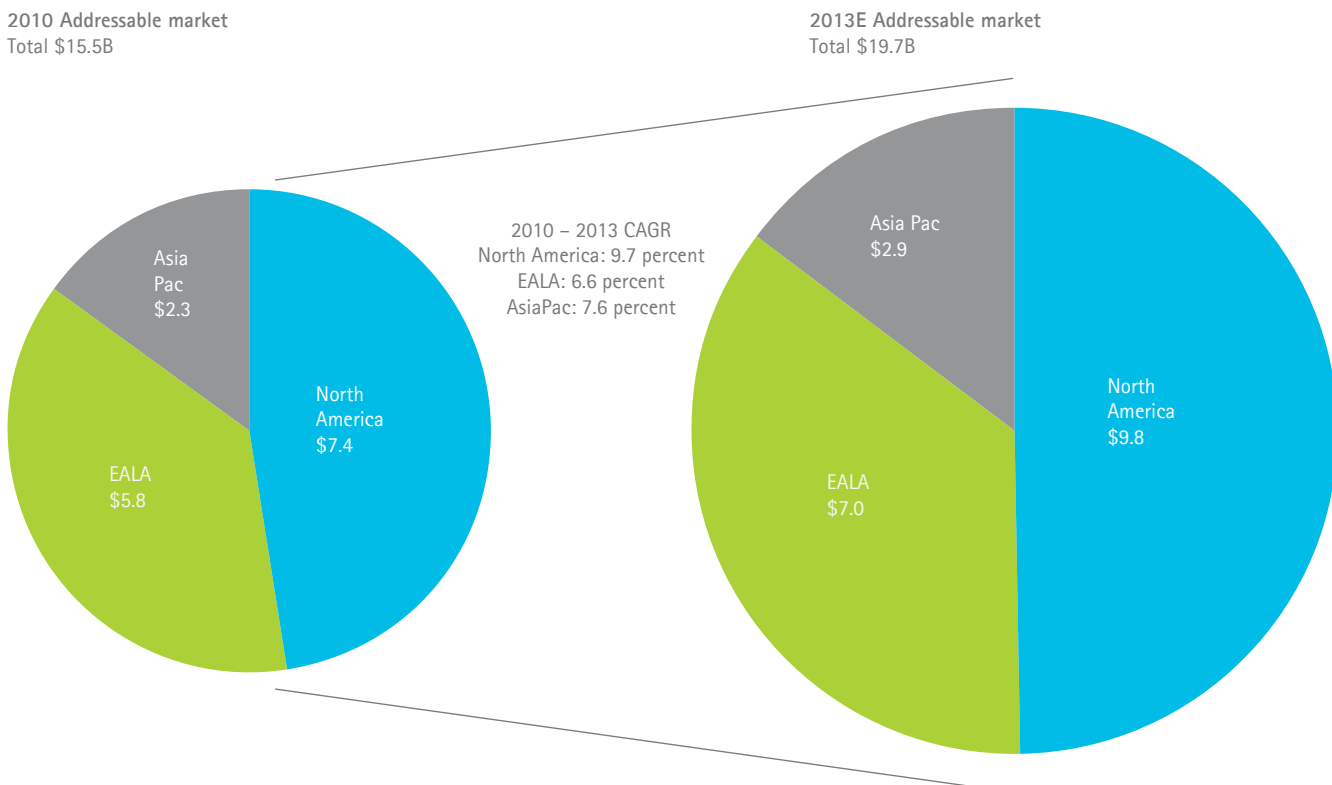
1. Government incentives are believed by 71 percent of respondents to spur effective health IT adoption. The most significant efforts include the United States' ARRA incentives and penalties and Australia's \$450 million e-health effort.
2. A shortage of clinical IT specialists will shift EMR maintenance and support strategies to outsourcing and cloud-based solutions, which over one-third of health organizations are

using in some capacity. The shortage in Canada, as an example, requires 36,000 clinical IT workers to sustain projects through 2014. Nearly 79 percent of current clinical IT workers will require additional training experience in the next year to remain active.

3. Networking the health system across regional, national and a variety of geographic regions will offer the largest and most challenging opportunities.

4. Global economic recovery will largely impact pace of adoption and sustainability of resources.

Figure 1. Global addressable hospital-based EMR market size (USD Billions)



Source: Accenture analysis

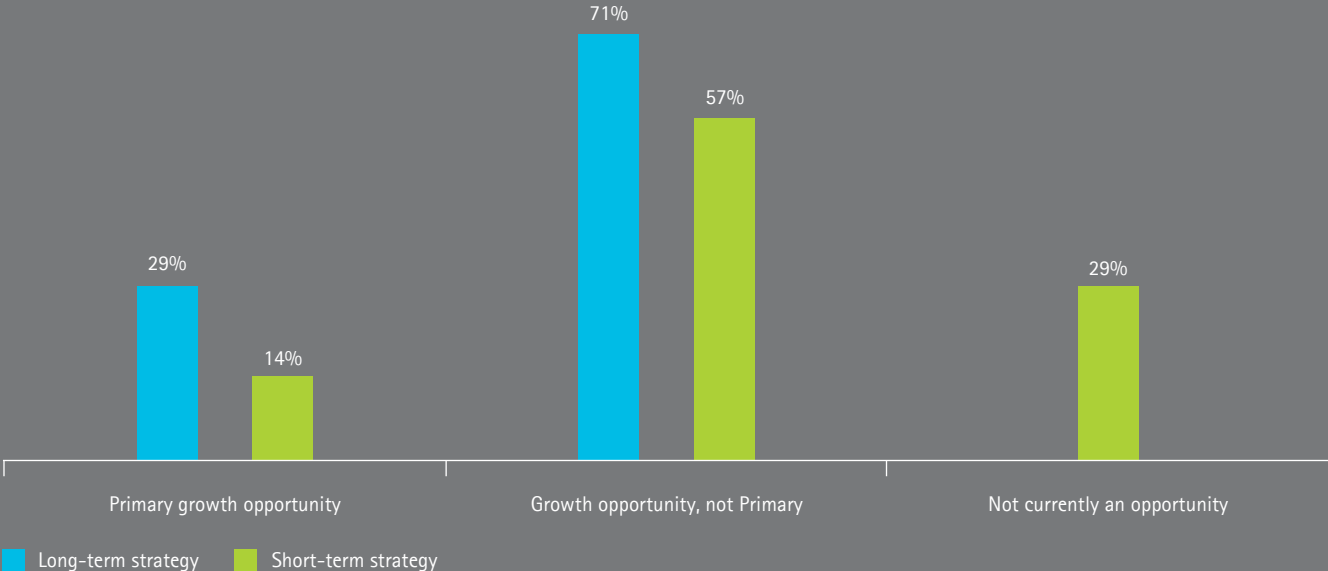
Introduction

Around the world, electronic medical records (EMRs) and electronic health records (EHRs) are being implemented to improve patient care, reduce health care expenses and fundamentally change the way in which medicine is practiced. The benefits realized by EMRs in international markets are largely consistent despite vast variations in health care systems, market structures, competitive landscapes and regulatory requirements. While international expansion remains a challenge for the companies we surveyed, 71 percent view global markets as a growth opportunity in the short term (1–3 years) and 100

percent view global markets as an opportunity in the long term (5+ years).

When asked about expansion into global markets, most respondents mentioned a standard approach: focusing first on their national markets, then identifying regional expansion opportunities or select countries in which they possess certain competitive advantages, and ultimately shifting to true global expansion into multiple markets.

Figure 2. How critical are the Global EMR markets to your company's long-term and short-term strategy?



Regional markets



Steady growth in hospital-based EMR/EHR markets is expected across North America, Europe and Asia Pacific. North America will remain the largest market, growing at a 9.7 percent compound annual growth rate (CAGR) from \$7.4 billion in 2010 to \$9.8 billion in 2013, which is driven primarily by growth in the US. In Europe, Africa and Latin America—where many countries have more mature health care markets—growth will be more modest at a rate of 6.6 percent CAGR from \$5.8 billion to \$7 billion in 2013. Asia Pacific is projected to grow at 7.6 percent CAGR from \$2.3 billion to \$2.9 billion, which is heavily dependent on the evolution of emerging markets, such as India and China. Other projections predict much more rapid growth in Asia Pacific. For instance, Frost and Sullivan states, “Although the APAC HIT market represents currently only 2.1 percent of the total health care market, it is very likely that the figure could double if not triple that in the next 10 years.”

Four primary forces could have a material impact on growth projections in each of these markets:

Emerging markets

Many emerging markets (for example, Malaysia, Thailand, Brazil, Russia, India and China) may experience rapid growth and leapfrog developed nations’ levels of EMR adoption and usage by learning from more developed nations and potentially utilizing innovative approaches such as cloud-based solutions. The future of these markets will be largely dependent on regulatory standards, government support and future trends affecting domestic health care systems.

Government funding

Many international governments, such as that of Australia, continue to announce additional funding packages for EMR and HCIT adoption, further driving adoption and presenting EMR-related opportunities.

Regional, national and multicountry integration.

The level of government funding in support of regional, national and international integration projects (for example, EU mandate 403²) could further accelerate adoption of EMR and other HCIT applications, creating large-scale opportunities in these markets.

Economic recovery

Improved economic recovery and improvement in hospitals’ financial performance may boost demand and funding available for EMR-related projects.

Labor shortage

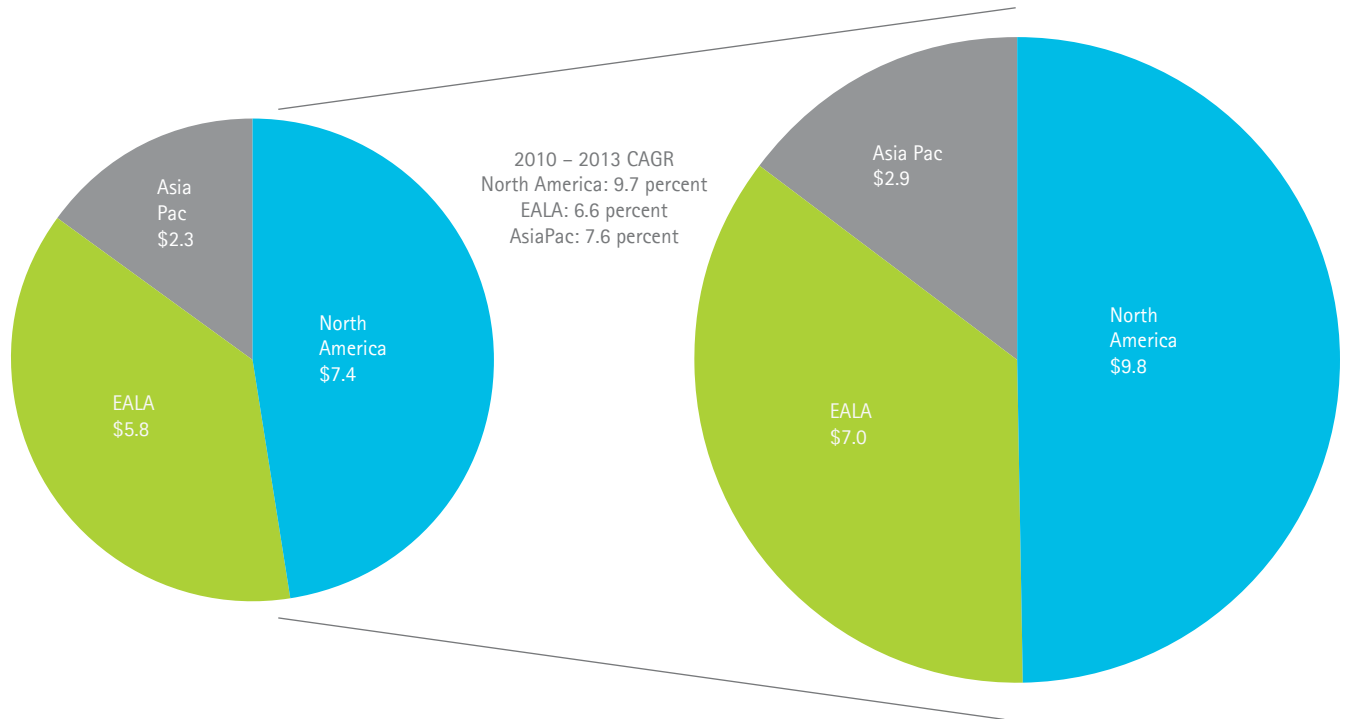
Inability to address labor shortages worldwide could have a negative impact on market growth projections in some countries.

2. EU Mandate 403 aims to provide a consistent set of standards to address the needs of this rapidly-evolving field for the benefit of future healthcare provision. Source: <http://www.calliope-network.eu/KnowledgeSharing/Standardisation/M403MandateeHealthINTEROP/tabid/353/Default.aspx>

Figure 3. Global addressable hospital-based EMR market size (USD Billions)

2010 Addressable market
Total \$15.5B

2013E Addressable market
Total \$19.7B



Source: Accenture analysis

Figure 4. Additional Factors Impacting Size and Growth of Global EMR Markets

	North America	EALA	AsiaPac	Comments
Emerging Markets	↔	↑	↑	EMR vendor discussions suggest emerging markets may be underrated
Additional government funding	↑	↑	↑	AsiaPac represents the largest growth opportunity if gov't funding increases
Multi-country Integration	↔	↑	↔	EALA seeing multiple regional efforts to integrate across country borders
Economic Recovery	↑	↑	↔	US, Canada best positioned to benefit from accelerated economic recovery
Labor Shortage	↓	↓	↓	Impact will be felt disproportionately across US

↑ Very Positive Impact
 ↑ Positive Impact
 ↔ No Impact
 ↓ Negative Impact
 ↓ Very Negative Impact

Source: SMA Interviews, Accenture Analysis

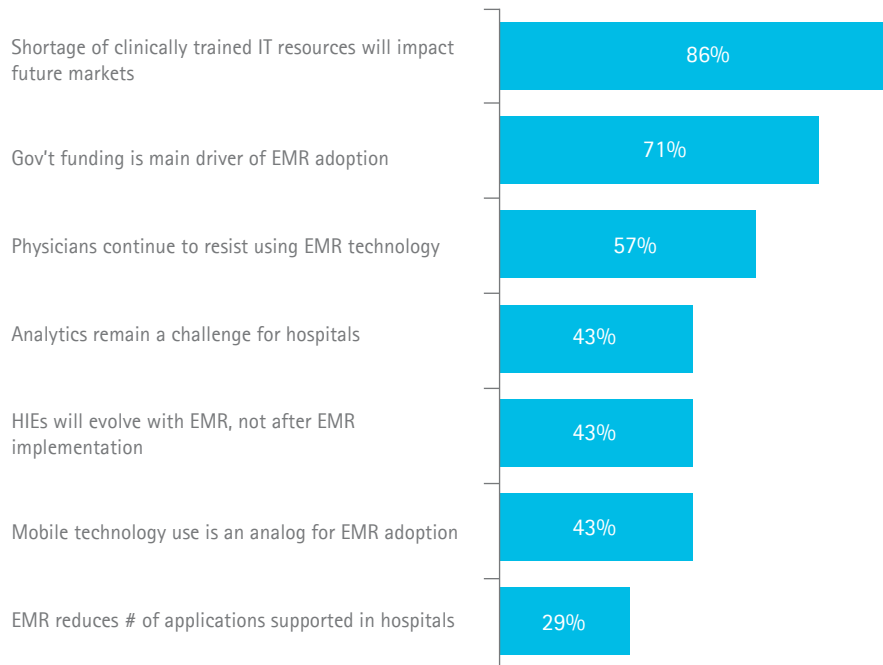
Global trends

It is clear that each international EMR market is complex enough to warrant its own discussion and certainly its own market entry strategy. However, we expect a number of trends to have an impact across each of the target markets we studied.

Labor shortage

As hospitals, primary care physician offices and clinics around the world implement and improve EMR systems, the number of end users is expected to increase rapidly. This increase will lead to the need for a greater number of clinically trained IT resources to support EMR systems. The United States, Canada, Australia and England, among other nations, are expecting and planning for significant shortages of resources and appropriate training.

Figure 5. Which of the following trends seen in the US do you think are active in Global markets? (percent of vendors in agreement)



"Canada estimated [it will need] 29,000 to 36,000 workers with 7 to 26 percent growth by 2014. Also estimated need for further training and experience to grow by 27 percent now and 38 to 79 percent by 2014 in various scenarios."

"Australia [anticipates a] shortage, to be addressed through increased supply, improved productivity and reduced demand (through system design)."

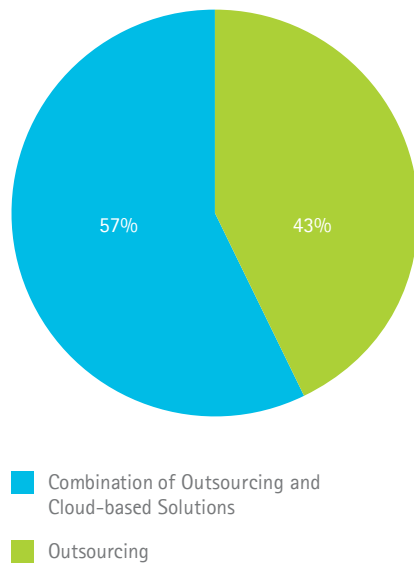
"England estimated 25,000 FTE out of 1.3 million workers in English NHS (one IT worker per 52 non-IT workers). Future people and skill shortages anticipated."

Oregon Health & Science University

An additional labor challenge will be a widespread shortage of nurses affecting many nations. Demand for nurses and nurse aids in the US is expected to steadily grow while hospitals are already struggling to retain current staff. Physician and nurse shortages are also being seen in other countries. In India, for example, the shortage is thought to be linked to the US-based phenomenon, as India-trained nurses move to the US and leave their home market.ⁱⁱ

Most survey participants agree that to cope with increasing support costs and the widespread lack of IT resources, providers will seek to outsource support functions or use cloud-based solutions. Recent research shows that health care companies are increasingly turning to cloud-based services. Almost one-third of health care companies are currently using the cloud, which is roughly on par with other, more progressive industries.ⁱⁱⁱ

Figure 6. How do you expect Global EMR markets to manage support costs in the long-term?



Government funding

Seventy-one percent of respondents agree that government funding is a primary driver of EMR adoption in global markets. In the US and Canada in particular, hospitals are experiencing very thin (or even negative) margins, making it a challenge to set aside funds for EMR-related projects. Recently, Australia announced a \$467 million national e-health initiative^{iv} sponsored by the government to link EMR systems and HCIT applications across the country. Conversely, in Japan many hospitals are struggling to afford ongoing EMR support after a previously government-funded initiative has gradually slowed.

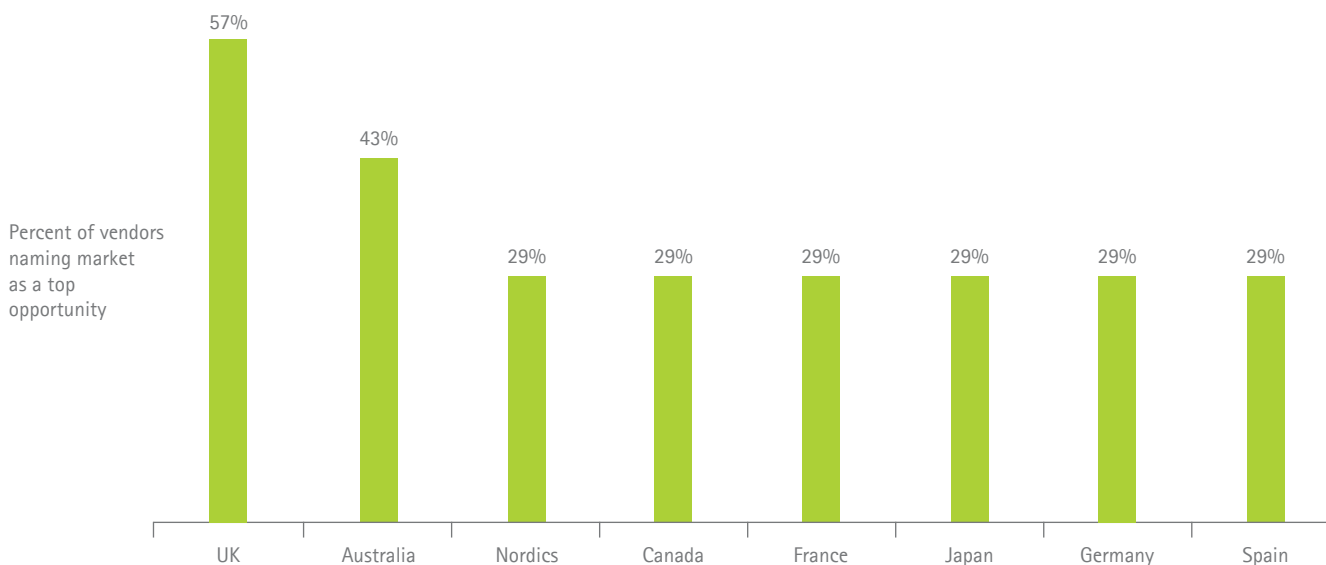
Cloud computing

Cloud-computing solutions in the EMR space show a great deal of promise to reduce costs, increase efficiency and enable redeployment of valuable resources in hospitals' IT organizations. However, many health care organizations have yet to determine how cloud computing will fit into their IT operations. A recent IDC survey states that fifty-four percent of organizations are still evaluating how to use cloud computing in their environment, while only 21 percent are using cloud computing for any applications.^v While these solutions represent an attractive option for health care organizations' IT strategies, a number of concerns and risks, especially around security and data sharing, must be considered. For many, maintaining control of data and knowing where data resides will prevent cloud solutions from being utilized. In addition, transmitting and sharing data with various locations and institutions proves to be a barrier. A recent Harris Interactive poll cites that a majority of patients (78 percent) agree that all physicians should have access to the information contained in an EMR.^{vi} However, only 30 percent agree that insurance

organizations should have access to the same data, implying a reluctance to send data outside of physician offices. Nevertheless, we expect cloud solutions to have a significant impact on health care organizations in the future—especially in a landscape in which 80 percent of IT organizations expect to increase spending on clinical IT over the next five years.^{vii}

Target country overviews

Figure 7. Which markets do you see as the top three & bottom three most profitable opportunities in the next three years?



Of the eight markets included in the analysis, the UK and Australia were most frequently identified as focus markets based on overall opportunities in the EMR space. The remaining six markets received an equal number of mentions, revealing mixed opinions on whether or not they represent strong growth opportunities.

Australia

The Australian market, while comparatively small, exhibits sophisticated use of EMR in most states and is moving forward with a national EHR program^{viii} to integrate systems across the country's eight regions. Aside from the general promotion of national e-health records, details of exactly how the nearly \$450 million will be spent are still largely undetermined.

Canada

Political changes and election cycles in Canada have negatively affected the amount of HCIT spending allocated to each of the provinces. However, overall EMR adoption is expected to rise steadily, due in part to Canada Health InfoWay, which had approved funding for 294 different EHR-related projects as of December 31, 2009.^{ix}

France

Highly competitive and localized, France is struggling with many of the same issues that other nations are facing. Although most hospitals have some type of EMR system, HCIT has been historically underfunded because few large EMR initiatives are government sponsored.

Germany

Similar to France, the German EMR market is highly fragmented and is dominated primarily by smaller local

companies. Of Germany's roughly 2,100 hospitals, about 20 percent are part of large hospital groups. These groups are in the process of expanding, leading to fewer opportunities for new entrants to have significant market influence. Most hospitals, within and outside the large groups, already have an EMR system and are currently working to make full use of their existing capabilities.

Japan

After a wave of government funding in 2000, most hospitals in Japan are now using a standardized EMR product with little customization. Local competitors, such as Fujitsu and NEC, command most of the market. Roughly 14 percent of hospitals in Japan have implemented an advanced EMR system.^x Meanwhile, without the help of government funding, the rest face the need to find capital for new systems.

Nordics

The Nordic countries (Denmark, Norway, Switzerland and Finland) are collectively viewed as leaders in terms of overall EMR adoption and use. Upwards of 90 percent of physicians are using sophisticated EMR systems in most Nordic countries.^{xi} Even so, many still struggle to share data across multiple locations and between acute and ambulatory settings. It should be noted, however, that while the Nordic countries are often viewed as one market, there are a number of critical differences among the countries. As an example, Denmark and Norway are both pursuing regional models, empowering each region to make decisions about EMR systems and usage.

Spain

Spain's 17 autonomous regions manage their own resources across the acute and ambulatory settings, have their own budgets and are connecting EMR solutions within their boundaries—resulting in what is likely to be the most effectively executed regional EMR model. Spain's health care IT infrastructure and overall EMR adoption make it a role model for many other European nations; the majority of hospitals and primary care physicians in Spain already have an EMR solution in place.

UK

The UK has seen great success and significant failure when it comes to EMR adoption. In the ambulatory setting, most physicians have implemented an EMR, are using sophisticated functionality and share clinical data across multiple offices. However, in the acute space, the National Health Service's (NHS) first attempt at standardizing EMR solutions across the country did not immediately yield the desired results. Many hospitals in the UK are re-evaluating their EMR strategy, with some essentially "starting over" with their implementations.

Additional markets

Much attention is being paid to EMR markets outside the scope of this survey—namely India and China. Despite the massive size and potential these markets represent, opinions conflict about the timelines for entering these markets. Some study participants are heavily focused on these markets and have invested accordingly. Others view India and China as still being too premature for large-scale investments; they cite critical shortcomings in the health care systems and key differences in care delivery models. As an example, the health care systems in India and China must support roughly 1,700 and 950 patients per physician, respectively, while each physician in the US is responsible for supporting only 400 patients.^{xii} In many cases, respondents indicated that these emerging markets may chart a new path and architecture given the infancy of their systems and processes.



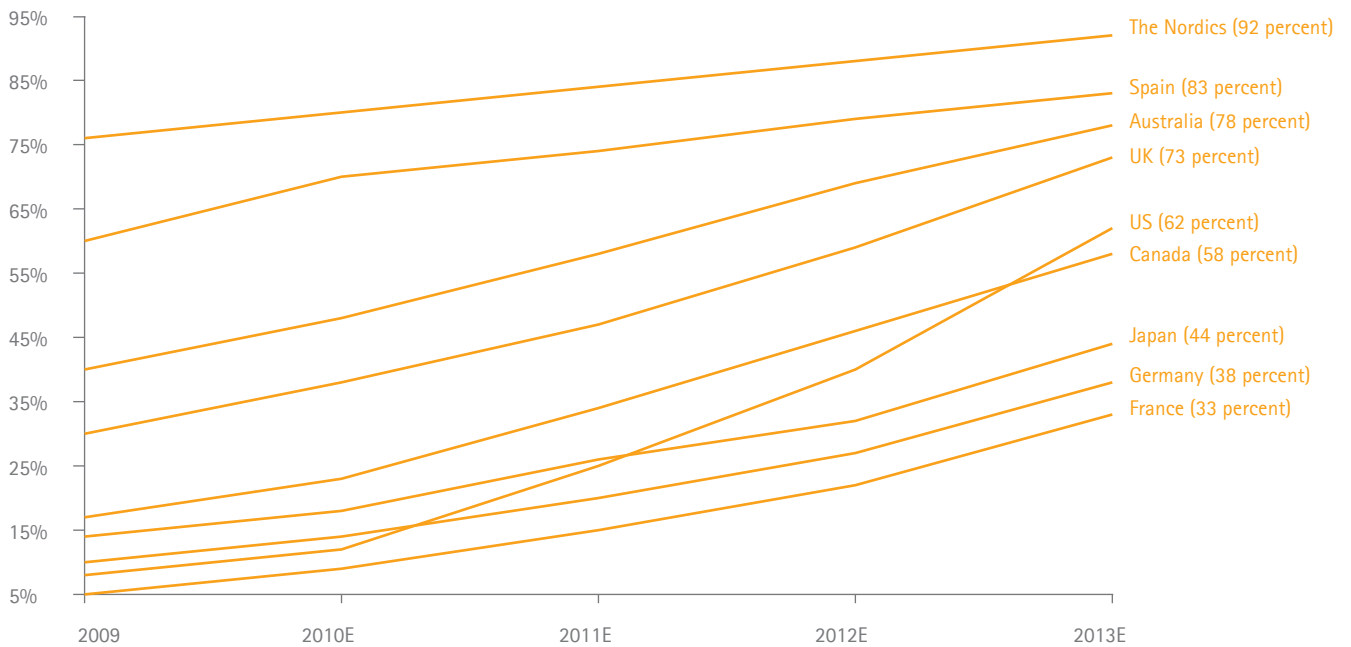
Summary of target EMR markets

	Country	2013E Addressable Market (CAGR)	# of Hospitals	Comments / Opportunities
	US	\$8.5B (7.4 percent)	5,800	<ul style="list-style-type: none"> Hospitals under increasing financial pressure ARRA incentives & penalties driving adoption Lack of funding and adequate resources
Tier 1	UK	\$1.6B (6.2 percent)	1,100	<ul style="list-style-type: none"> Largest market; many hospitals starting over and refreshing EMR systems High risk, high reward bet
	Germany	\$1.0B (5.4 percent)	2,100	<ul style="list-style-type: none"> Large market, with potential for growth – market entry most likely via partnership / acquisition Clinical support / maintenance often outsourced (typically conducted by smaller players)
	Spain	\$0.6B (5.4 percent)	800	<ul style="list-style-type: none"> We are currently supporting HIT in 5 of the 17 regional systems Open to outsourcing – decisions made at the regional level
Tier 2	Australia	\$0.4B (4.6 percent)	1,000	<ul style="list-style-type: none"> Comparatively low levels of spend and regional model prevents rapid adoption We currently have a mostly MCIM presence versus SI&T (related to EMRs)
	Japan	\$1.5B (1.2 percent)	9,000	<ul style="list-style-type: none"> Adoption slowed once government funding programs expired and funds disappeared High costs are the primary barrier for hospitals
Tier 3	France	\$0.6B (4.8 percent)	3,000	<ul style="list-style-type: none"> Local companies and cultural norms prevent large IT service providers from winning relationships Maintenance and support of clinical systems typically done by local firms
	Canada	\$0.6B (4.4 percent)	1,000	<ul style="list-style-type: none"> Insufficient government funding and poor financial performance of hospitals has slowed adoption
	Nordics	\$0.6B (5.1 percent)	240	<ul style="list-style-type: none"> High EMR adoption with sophisticated users Still struggle with sharing data across hospitals and regions, as well as analytics

Projected EMR adoption rates

While most of the developed markets have long encouraged EMR implementation, countries across the globe exhibit various EMR adoption rates. An analysis of hospital EMR adoption rates projects the Nordics, Spain and Australia to be global leaders in overall EMR implementation in 2013, while France, Germany and Japan are expected to be market laggards with lower rates of adoption.^{xiii} The United States is expected to leapfrog a number of countries in terms of hospital-based EMR adoption by 2013 and exhibits the highest projected growth rate of the nine focus markets.

Figure 7. Estimated Hospital-based EMR Adoption Rate Projections by Country



EMR Adoption projections are based on current and expected hospital adoption rates and reflective of hospitals' use of advanced functionality, including CPOE.

Source: Markets and Markets, Accenture Analysis



Conclusion

Key considerations

Each of the target markets analyzed possesses unique characteristics, and many are employing very different strategies to drive countrywide EMR adoption (for example, regional versus centralized models). Local trends, differing health care systems, cultural norms and unique regulations will continue to shape these diverse markets. Compared to the US, markets in most countries may appear significantly smaller; however, international markets still boast a range of opportunities and significant growth potential.

A few areas should be considered when anticipating how these markets will evolve:

Differentiating capabilities

For many markets, a specific set of capabilities will be required to successfully enter and operate. For example, Japan, Germany

and France are all known to be extremely competitive, localized markets, presenting an advantage to companies with superior partnership or acquisition capabilities. Also, relationships with regulatory bodies and understanding of local laws will serve companies well in markets with stringent controls over security, data sharing and confidentiality.

Market maturity

Consider the time elapsed since each EMR market has begun government-sponsored EMR programs. ARRA and HITECH have recently changed the way the US EMR market operates, while the Nordics have had many years to drive overall adoption and ongoing enhancements.

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