

# Leveraging Data and e-Records in Healthcare

**Driving Improved Clinical and Financial Outcomes**

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Many Hospitals and Doctors rooms across the globe are still dependant on unwieldy, paper based patient records.

# Traditional vs. Electronic

## TRADITIONAL PAPER RECORDS **VS.** Electronic Health Records



**SPECIALISTS** spend **50 hours** or more in direct patient care per week.

**NURSES** using EHR have seen reductions in documentation time by up to **45%**

**USING COMPUTERS** to enter patient data increases the **completeness of the information**, so staff time spent searching for missing data decreases.

**EACH PATIENT VISIT** requires approximately **10-13 pieces of paper**.

And a large percentage of physicians see **50-99 patients a week**.

So each physician accumulates around **975 new pages** of paper work each week.

**1000s of tons** of paper are consumed by the healthcare industry each year, causing storage issues and environmental harm.



**PRIMARY CARE PHYSICIANS** only spend **30-40 hours** a week in direct patient care because of heavy paperwork and admin duties.

### Time Benefits



### ORGANIZATION

Paper-based records dispersed across different medical facilities are often incomplete, contributing to unnecessary, repeat testing and treatment. Dispersed records are also inefficient because new providers have to retrieve a patient's charts and notes from multiple offices.

EHR reduces the redundancies across healthcare providers and allows the assembly of a complete record of patient history in one easily accessible file. A complete patient record in digital format makes it easier to generate longitudinal reports that can improve extended care.

### SHARING RECORDS

Paper record systems waste valuable time because office staff has to transfer records by fax or mail. Because a patient's paper records across healthcare providers aren't stored in a centralized location, it's often difficult to put together a complete history.

With EHR, exchanging information is faster because office staff can skip the retrieval and faxing process and transfer records electronically. EHR provides access to complete medical information about a patient, so other providers don't have to fill in partial records.

### ACCESSIBILITY

Doctors' access to medical records is limited by location and office hours. This can impact your patients' health in unusual circumstances, such as in an emergency procedure or when vital medication is misplaced.

Web-based EHR provides 24/7 access to patient records and lab results from any location with internet access. Using mobile applications, physicians can access records on-the-go, between appointments or while on rounds.

### Environmental Benefits

**1000 TONS**

### Financial Benefits



**OUTPATIENT** facilities that adopt and use an EHR over 15 years could have net savings of **\$142BILLION**



**INPATIENT** settings that adopt and use EHR over the same time period experience net savings of **\$371BILLION**

**IN 2009**, independent physician practices using EHR had almost **\$50,000 greater total revenue** per full-time physician than practices using paper-based systems.

**AFTER 5 years** of using EHR, practices reported an operating margin **10.1% higher** than practices in their first year of EHR use.

**APPROXIMATELY 4.5 MILLION** ambulatory visits related to adverse drug events occur annually in the U.S.

**ABOUT 400,000** of these instances result in hospitalization.

These adverse drug events could be avoided by using EHR to **track patient medication history** and to **flag patients** prescribed to several medications



### Health Benefits

- Reduction of medical errors and adverse drug events.
- Safer, more reliable prescribing.
- Quicker, broader access to patient records. Provide accessibility to consolidated data, information and medical expertise at the point of care, anywhere.
- Promotes more legible and complete patient records.
- Improved analytics and trending near real time.
- Development of precise clinical processes/workflows using evidence based medicine.
- Reduction of errors in discharge summaries and fewer communications errors at transitions of care.

- Reduction of documentation time of up to 45%.
- 30 minutes more per nurse, per shift available for bedside interactions.
- Completeness of chart data is increased resulting in less time searching for missing information.
- Ubiquitous, fast access to the patient chart, anytime, anywhere.
- Ease of ordering tests and rapid routing and acknowledgment of results.
- Time saved through e-prescribing.

- Reducing supplies for paper charts and medical devices.
- Reducing physical storage space.
- Reduced chart handling labour.
- Reduced cost of transcription.
- Reduction of documentation time of up to 45%.
- Reduction of duplicate testing.
- Increase revenue capture by decreasing claim denials and improving the clinical documentation and coding process.

- Advanced and predictive analytics.
- Robust healthcare data exchange.
- Leveraging mobile platforms for patients and clinicians.
- More efficient and robust medical research.
- Revenue opportunity by re-purposing medical records space.
- Improved patient engagement, involvement and convenience.
- Improved privacy and security.
- Improved work life balance for providers.
- Population health management.

Asia Pacific EMR Adoption Model <sup>SM</sup>	
Stage	Cumulative Capabilities
Stage 7	Complete EMR; CCD transactions to share data; Data warehousing; Data continuity with ED, ambulatory, OP
Stage 6	Physician documentation (structured templates), full CDSS (variance & compliance), closed loop medication administration
Stage 5	Full complement of R-PACS displaces all film-based images
Stage 4	CPOE, Clinical Decision Support (clinical protocols)
Stage 3	Nursing/clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology
Stage 2	Clinical Data Repository (CDR), Controlled Medical Vocabulary, CDS, may have Document Imaging; HIE capable
Stage 1	Ancillaries - Lab, Radiology, Pharmacy - All Installed
Stage 0	All Three Ancillaries (LIS, RIS, PHIS) Not Installed



# Cross Country EMRAM Score Distribution

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

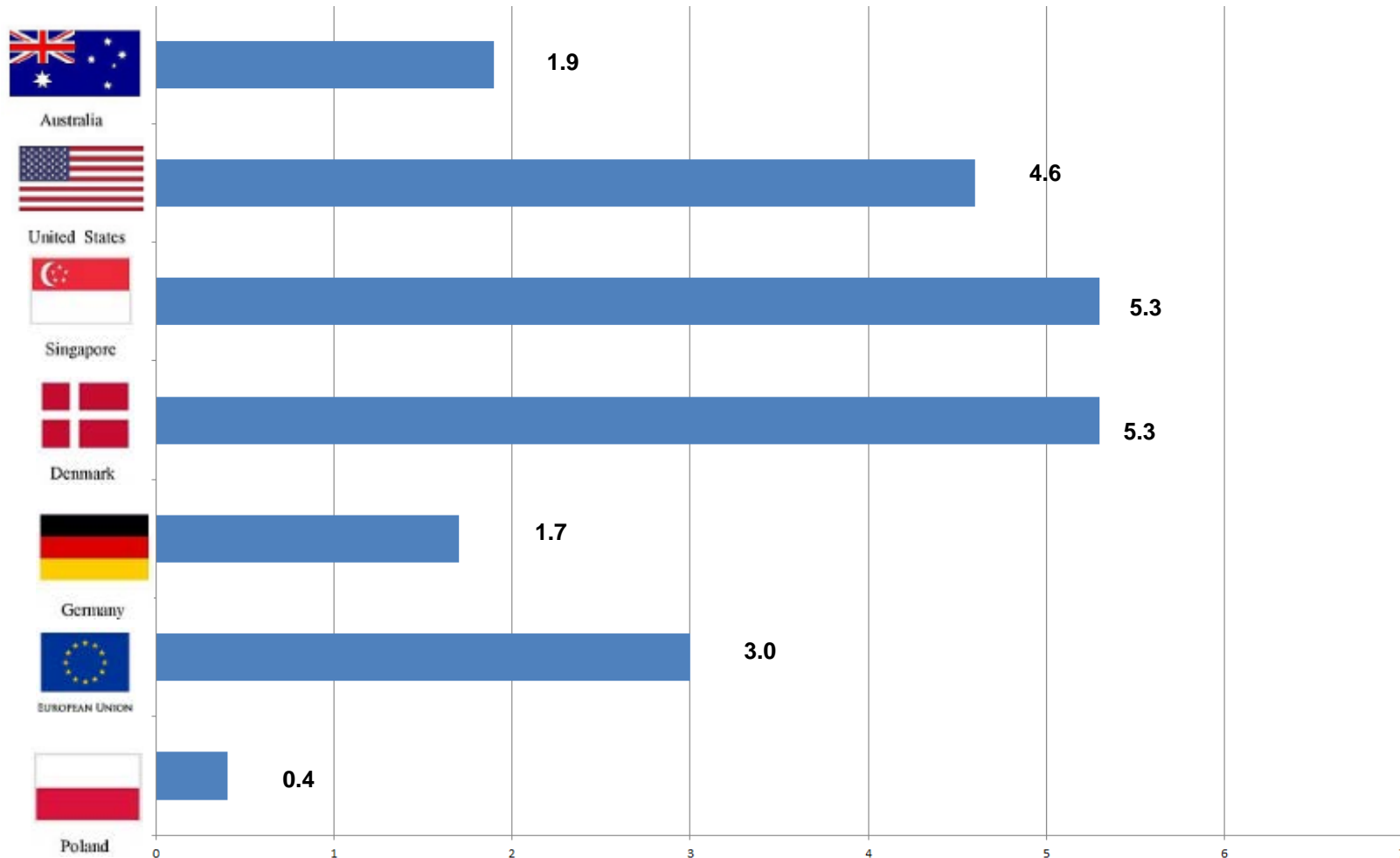
N = 211

N = 229

# Cross Country EMRAM Score Distribution

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

# Average EMRAM Scores



- High cost to purchase/implement and maintain.
- Building and IT infrastructure readiness.
- Massive change management effort and the associated resistance.
- Availability of experiences resources.
- Interoperability both internally and externally.
- Once it's in, there is a demand for more.

- Treat as a clinical/business transformation project, not an IT project, appoint clinical leaders to drive the design and adoption.
- Start by identifying specific benefits you seek and measure your progress against them.
- Don't re-invent the wheel...benchmark other's success.
- Staff the project with experienced resources.
- Must be sponsored and driven from the top. Emphasise as a burning platform/priority for the whole organisation.
- Recognise the complexity and level of disruption required.
- Don't just automate your current processes. Redesign your workflows to take advantage of the technology and improve efficiency.

- Governance – acknowledge there is both organisational and program governance and appropriately link the two.
- Establish strong, collaborative relationships with key vendors at the executive level.
- Recognize that there is no single integrated solution. Spend time designing and building appropriate system interfaces.
- Respect and embrace good practice in business continuity, high availability and disaster recovery.
- Invest in independent advice and oversight of the project.
- Seek to excel in stakeholder engagement and communication

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