



دور نما و چالش‌های پیش روی سلامت الکترونیک از دیدگاه بخش خصوصی

دکتر افشین نیاکان
کمیسیون سلامت دیجیتال سازمان نظام صنفی رایانه کشور



بررسی وضعیت جاری

- بیش از ۳۰ سال تجربه پیاده سازی سامانه های سلامت الکترونیک
- بیش از ۴۰۰ شرکت فعال در حوزه انفورماتیک پزشکی که ۳۵ مورد در حوزه HIS فعال هستند.
- بیش از ۱۵ سال است که سامانه EHR در وزارت بهداشت به عنوان متولی قانونی نظام سلامت راه اندازی شده
- تمامی حدود ۱۱۰۰ بیمارستان کشور مجهز به سامانه HIS و PACS هستند که اکثر آنها با سامانه EHR تبادل داده یک طرفه دارند.
- تمامی داروخانه ها، مراکز تصویر برداری، آزمایشگاهی و پلی کینیکی کشور از یک برنامه نرم افزاری استفاده میکنند.
- با استفاده از نرم افزارهای با تراز جهانی، عملاً رادیولوژی دیجیتال جایگزین فیلم رادیولوژی در کل کشور شده است.
- سطح ۱ سلامت (بهداشتی) سالها است که از چندین سامانه مختلف استفاده میکند.
- نسخه و نسخه پیچی الکترونیکی مدتی است که عملیاتی شده و بیمه ها از آن استفاده میکنند.
- طی دو دهه گذشته تلاش های متعددی برای تدوین کدینگ واحد و قوانین همکنش پذیری صورت گرفته شده.
- در حوزه های BI, AI, IOT سرمایه گذاری و فعالیت های متعددی صورت گرفته شده.

مشکلات مطرح از دید مسئولین و کاربران

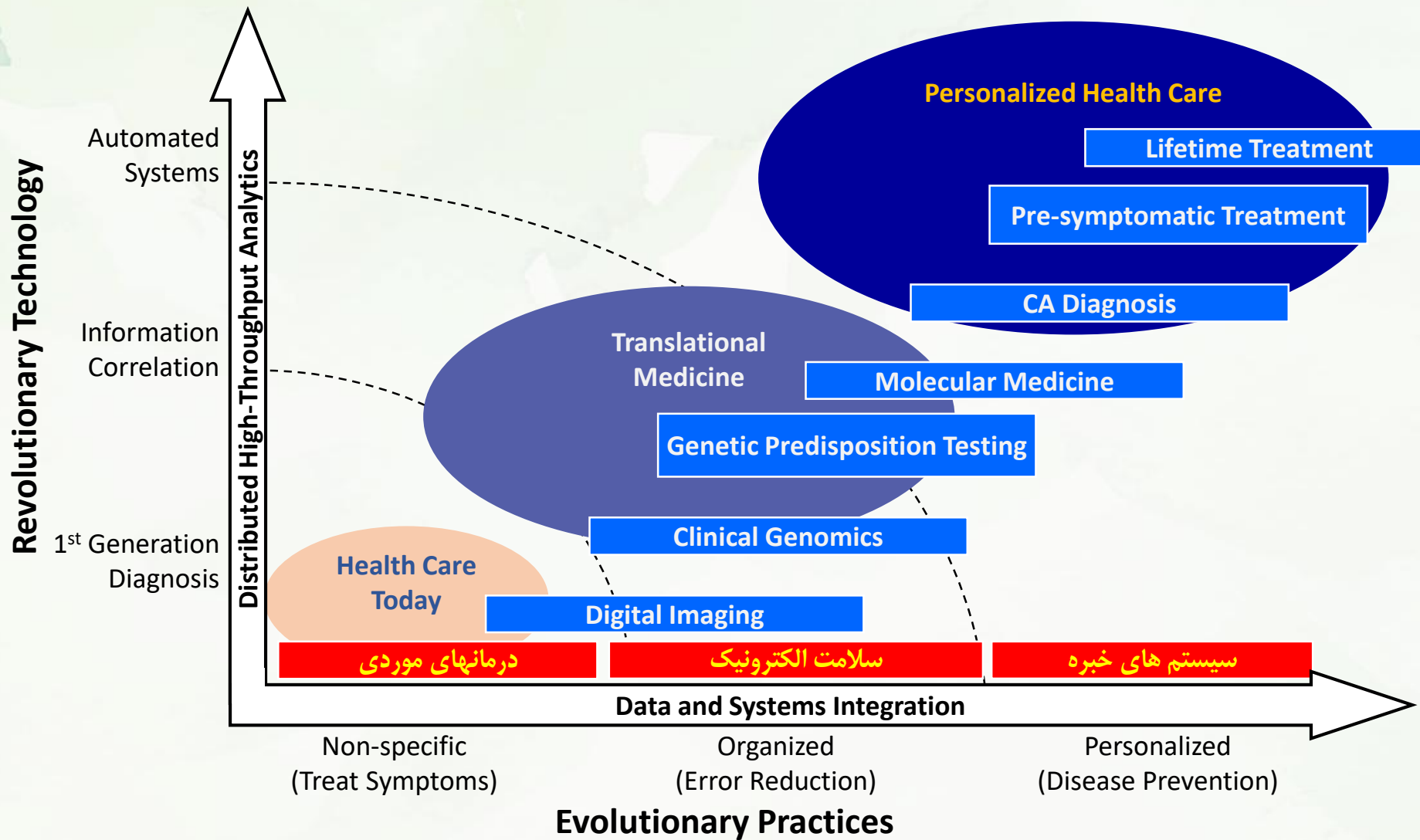
- برنامه های موجود تمامی نیازهای کشور / کاربران را پوشش نمی دهند
- تکنولوژی اکثر برنامه ها قدیمی است و نیاز به بازبینی دارد
- خدمات و سرویس دهی شرکتها مطلوب نیست
- هزینه درخواستی برای ارائه خدمات/ محصولات بالا است
- مراکز درمانی توان پرداخت هزینه برنامه ها را ندارند
- دستورعملهای وزارتی و یا حاکمیتی دیر انجام می شود
- برنامه ها کاربر پسند نمی باشند
- برنامه ها تحت کلود نیستند
- امنیت سامانه ها کم است.
- از هوش مصنوعی و یا هوش تجاری در برنامه ها به درستی استفاده نشده
-

مشکلات مطرح از دید بخش خصوصی فعال در سلامت دیجیتال

برای مطرح نمودن موضوع لازم است که اول دیدگاه و برداشت خود را از سلامت الکترونیک به هم **نزدیک** کنیم

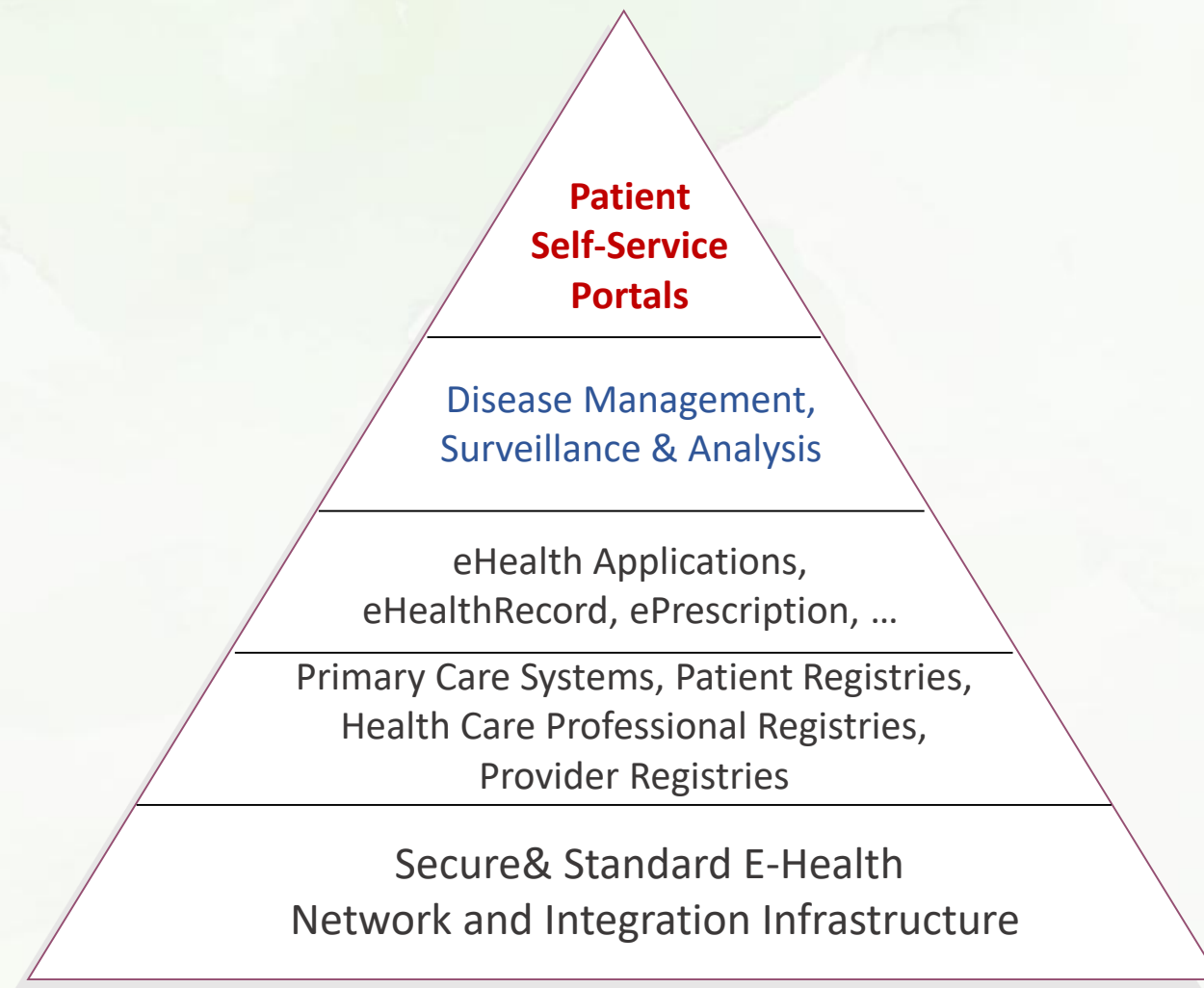


مسیر حرکت سلامت



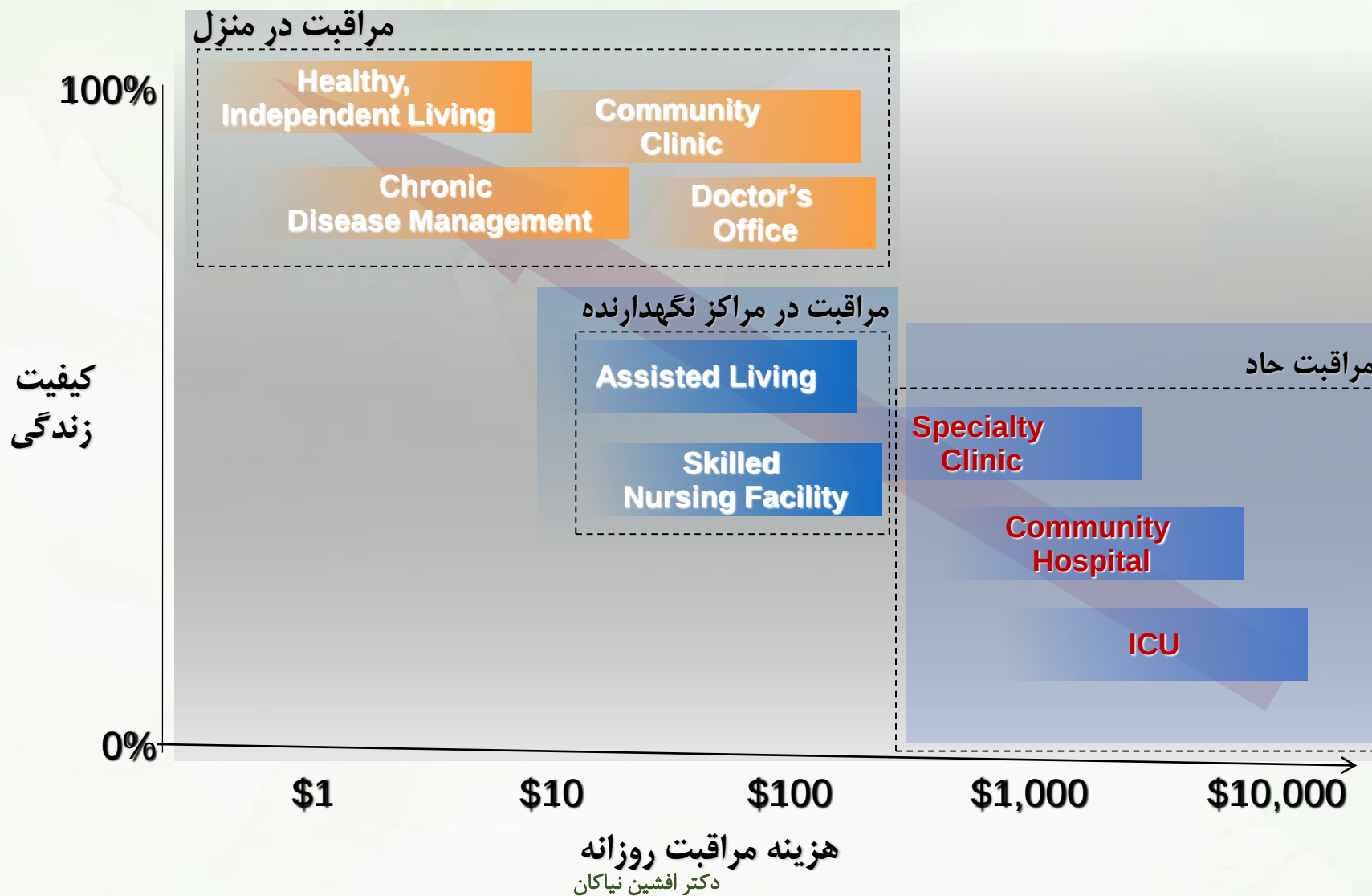


اصول سلامت الکترونیک





هدف سلامت الکترونیک

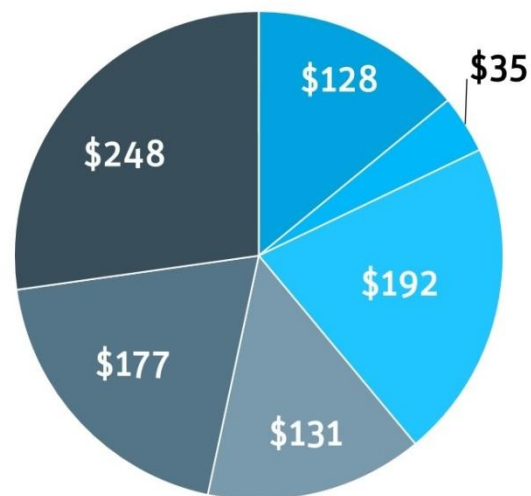




چالش‌های عملیاتی نظام سلامت

Healthcare Systems and Professionals Are Plagued by Operational Challenges

Estimated Annual Cost of Operational Inefficiencies on Healthcare System (\$B)



- Failures of Care Delivery
- Failures of Care Coordination
- Overtreatment
- Pricing Failures
- Fraud and Abuse
- Administrative Complexity

\$910 Billion

Estimated annual cost of inefficiencies in the U.S. healthcare system

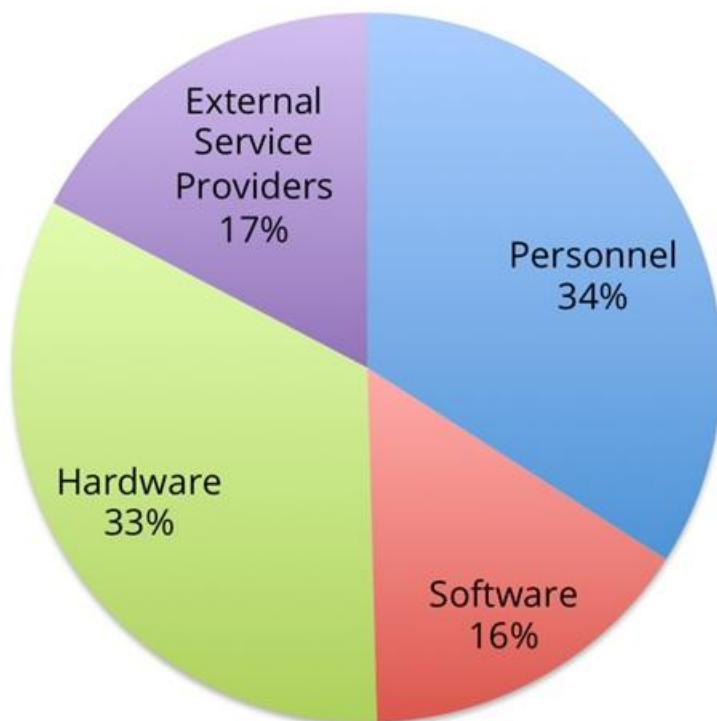
Provision of Care

Failure of Health System

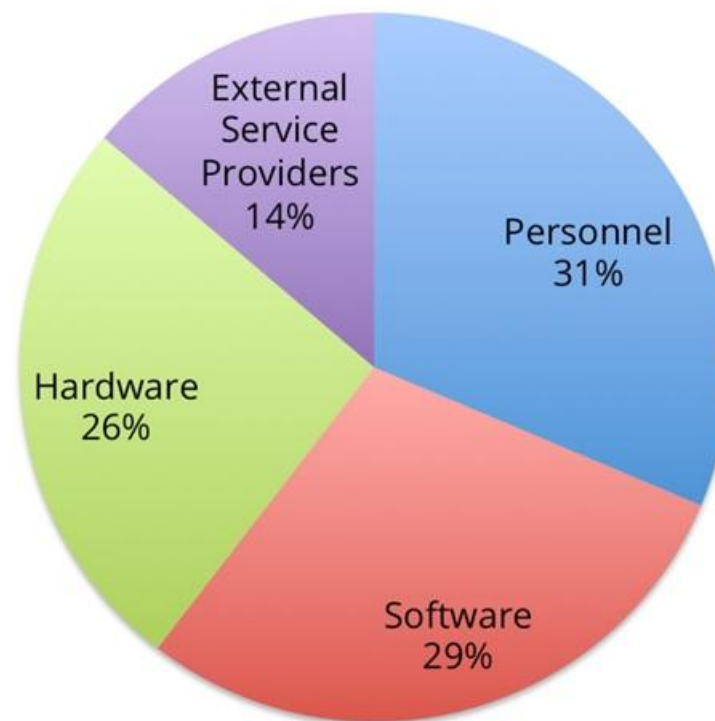
Lack of automation is prevalent in the industry. The majority of the inefficiencies and waste in the healthcare system relates to administrative complexity, pricing failures and fraud and abuse. Overlaying electronic documentation support and data analytics tools across these disparate data silos will better identify outliers and lower total systematic costs.

سهم اجزای مختلف، در پیاده سازی سامانه های دیجیتال

Before Reallocation of Costs
- in % of total IT Costs -



Corrected Cost Allocation
- in % of total IT Costs -



حلقه گم شده در پیاده سازی بیمارستان هوشمند

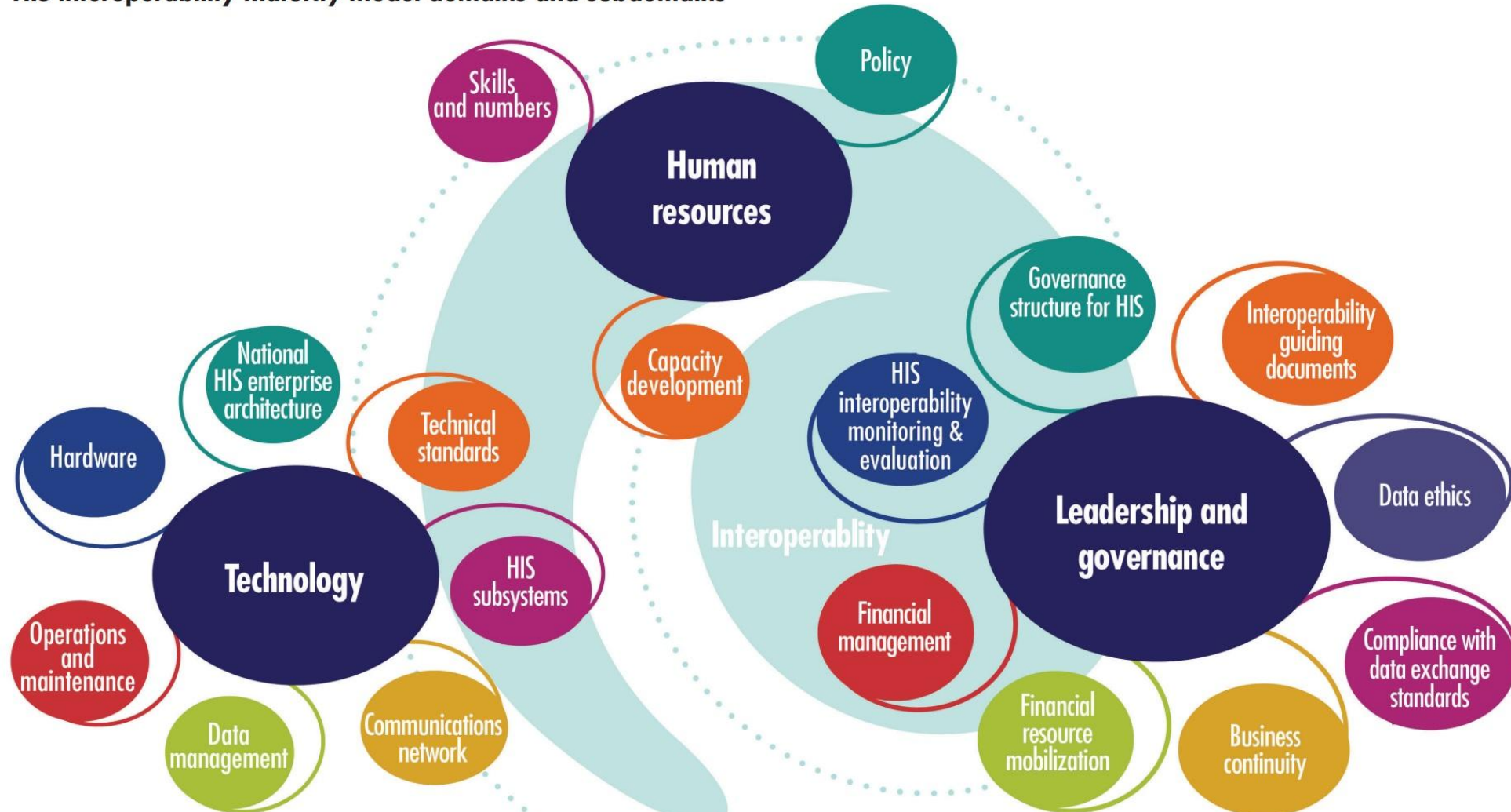
وقتی از بیمارستان هوشمند صحبت میکنیم هدف ما رسیدن به یک ساختمان هوشمند و یا تجهیزات هوشمند نیست، بلکه موفقیت ما در ارائه بهترین خدمات با کمترین هزینه به بیماران است.

در دو سطح مختلف شاخصهای جهانی برای ارزیابی میزان موفقیت در پیاده سازی سلامت الکترونیک وجود دارد که معیارها و شاخصهای آنها با همدیگر اختلاف دارند

- بلوغ سلامت الکترونیک در سطح ملی (همراه با شاخصهای ارزیابی آن)
- بلوغ سلامت الکترونیک در سطح بیمارستانی (همراه با شاخصهای ارزیابی آن)

بلوغ سلامت الکترونیک (سطح ملی)

HIS interoperability maturity model domains and subdomains



مدل ارزیابی بلوغ سلامت الکترونیک (سطح ملی)

Maturity model (Health information System)

HEALTH INFORMATION SYSTEMS INTEROPERABILITY MATURITY MODEL						
Domain	Subdomain	Level 1: Nascent	Level 2: Emerging	Level 3: Established	Level 4: Institutionalized	Level 5: Optimized
		The country lacks HIS capacity or does not have a chance or represent isolated, ad hoc efforts.	The country has defined HIS processes and or ongoing monitoring or measurement protocol exists.	The country has documented HIS performance monitoring, quality improvement, and evaluation are systematically used.	Government and stakeholders use the	The government and stakeholders routinely review interoperability activities and modify them to adapt to changing conditions.
Leadership and governance	Governance structure for HIS	Evolving governing body for health information systems (HIS) is constituted on a case-by-case basis OR no governing body exists.	An HIS governing body is formally constituted and has a scope of work that includes the people responsible for data governance oversight. The governing body oversees interoperability directly or through a separate technical working group (TWG).	The HIS governing body conducts regular meetings with stakeholder participation.	The HIS governing body is government-led, consults with other ministries, and monitors implementation of HIS interoperability using a work plan. It mobilizes resources—financial, human resources (HR), and political—to accomplish its goals.	The HIS governing body is legally protected from interference or organizational changes. The HIS governing body and its TWGs are nationally recognized as the lead for HIS interoperability. The governing body works in liaison with other similar working groups regionally and/or around the world.
	Interoperability guidance documents ¹	HIS interoperability guidance documents are absent. Interoperability is implemented on a case-by-case basis.	Interoperability guidance documents are developed, tested, and adopted, and include reference terminologies and technical standards for data exchange.	The interoperability guidance documents are government-owned. They are consistently used and referenced in efforts to guide implementation of HIS interoperability.	Processes are in place to regularly monitor the implementation of the interoperability guidance documents. The interoperability guidance documents are regularly reviewed and updated based on lessons learned from implementation. These documents reflect international best practices.	

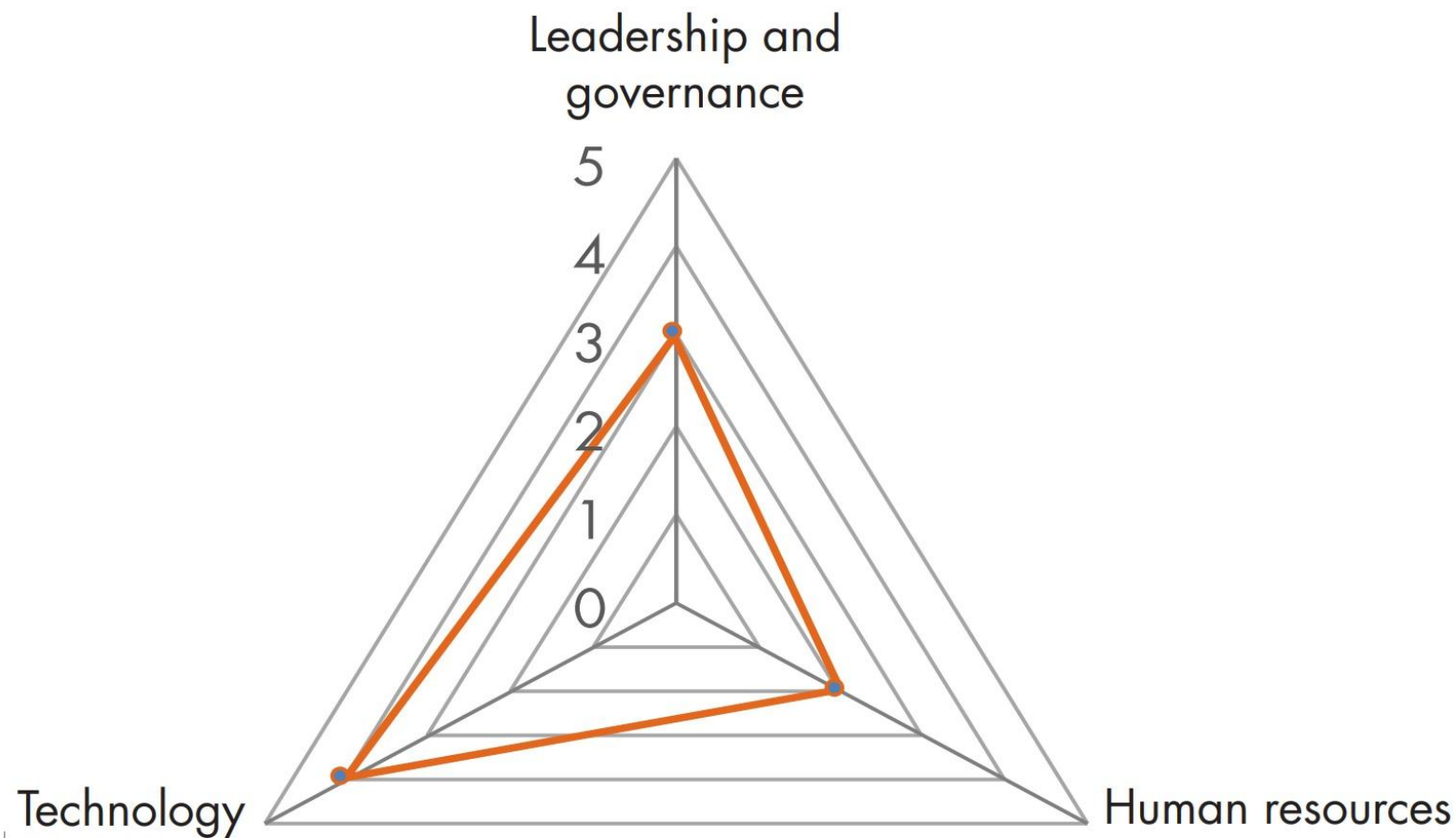
Domain

Subdomains

Attributes

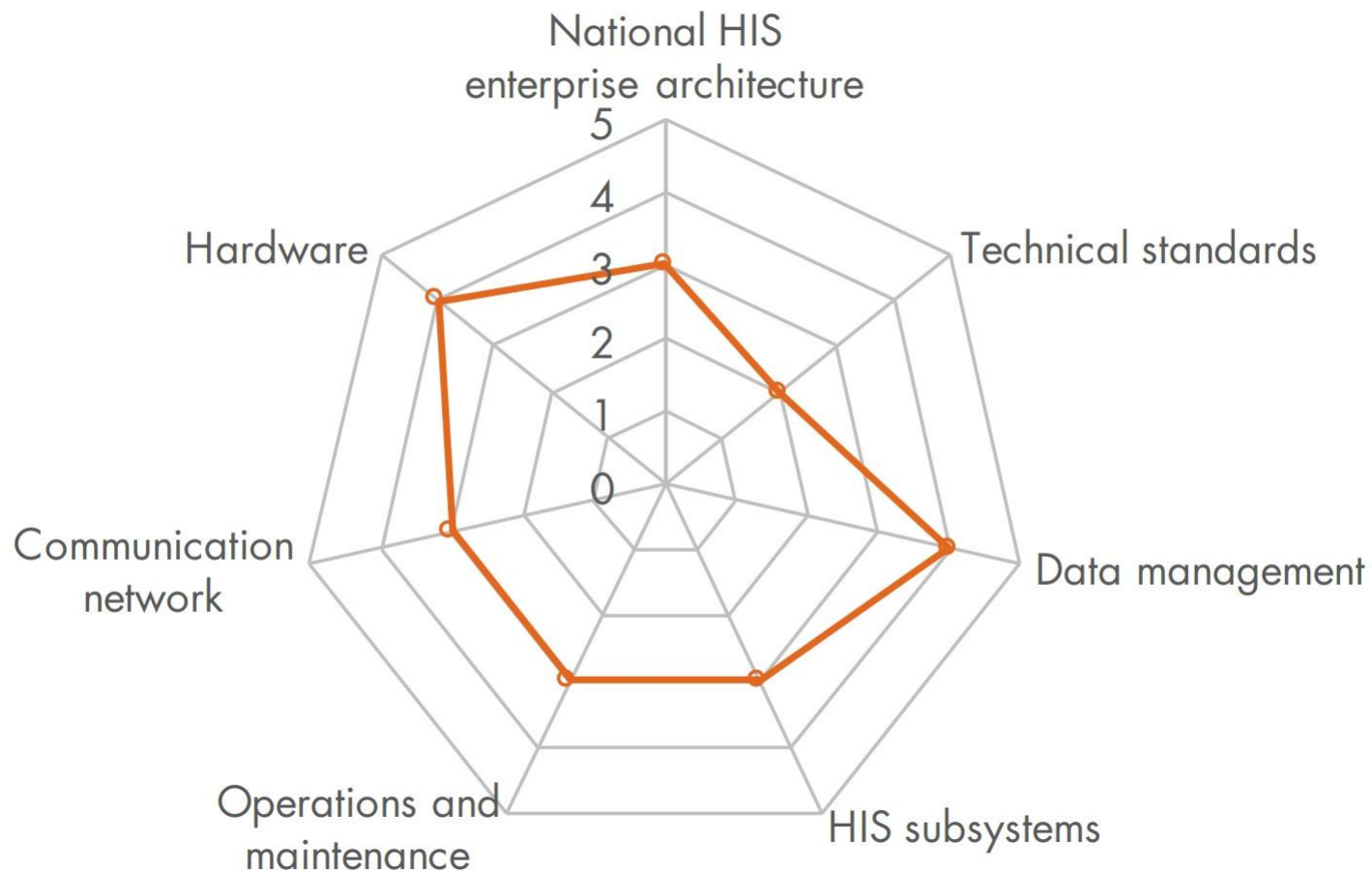
مدل ارزیابی بلوغ سلامت الکترونیک (سطح ملی)

Sample radar graph for domains



مدل ارزیابی بلوغ سلامت الکترونیک (سطح ملی)

Sample radar graph for the technology domain





سازمان نظام صنفی رایانه‌ای کشور

گزارش سال ۱۹۹۹
WHO از بلوغ
سلامت الکترونیک
(سطح ملی)

CURRENT GLOBAL DIGITAL HEALTH INDEX COUNTRIES

WHO region:		DIGITAL HEALTH MATURITY PHASE
Africa	Benin	3
	Ethiopia	3
	Mali	3
	Nigeria	3
	Sierra Leone	2
	Uganda	2
Eastern Mediterranean	Afghanistan	2
	Jordan	4
	Kuwait	3
	Pakistan	2
Europe	Portugal	4
The Americas	Chile	3
	Peru	3
South-East Asia	Bangladesh	4
	Indonesia	3
	Sri Lanka	3
	Thailand	4
Western Pacific	Lao People's Democratic Republic	2
	Malaysia	5
	Mongolia	3
	New Zealand	3
	Philippines	4

دکتر افشین نیاکان



چالش اصلی

عدم اطلاع درست از فرایند و معیارهای بلوغ سلامت الکترونیک

برای ارائه بهترین خدمات با کمترین هزینه به بیماران

در مراکز درمانی

بلوغ سلامت الکترونیک (سطح مراکز درمانی)

	Stage I	Stage II	Stage III	Stage IV	Stage V	Stage VI
Data analysis	- Isolated and fragmented data analysis solutions - Heavy and complex production of internal and external reports - Data integrity issues - Inability to handle large volumes and variety of data - Problems when collecting data from different systems - Lack of analytical and IT resources - Use of spreadsheets and local database	- Key data collection and integration - Centralized data repositories - Automated production of internal reports - Automated production of daily metrics available on BI platforms - Daily productivity is automatically estimated and delivered to managers - Ability to drill down from a summary to the particular conditions of the patient	- Efficient and consistent report production and adaptability to changing requirements - Decreased variability in healthcare processes and increased focus on internal optimization and waste reduction - Senior managers monitor productivity in terms of staff and combination of skills - Department managers monitor daily productivity results on their dashboards	- Patient care is adjusted, based on metrics - Final users have started to incorporate analytical patient data, including big data, in operations and daily tasks - Costs and quality are monitored via organizational performance dashboards - Financial results and clinical patient data form a competitive advantage to increase profit	- Organizational processes for intervention are supported by predictive risk models - Clinical risk intervention, modelling and predictive analysis - Full integration of service line data in the strategic planning process - Existence of an Analytics Ecosystem that supports innovation and data exploitation - Clinical outcomes screened with data warehouses and big data sources - Alarm management or clinical data intelligence production	- Adoption of personalized medicine and prospective analyzes - Patient care adjustment based on population results and genetic data - All valuable data are available for analysis and exploration - Real-time data are used in critical activities, such as patient care - Internal and external data sources to improve and optimize costs and quality - Permanent data analysis mentality and culture
Strategy	- There is no global strategy for IS/IT - There is no formal strategy - Ad hoc strategies adopted by different IS sub-areas to answer isolated problems and needs - IT governance processes are not enforced and the organization does not recognize their need	- Development plans in silos and static structures - Lack of understanding of how to achieve success - The impact of high-level strategies and goals is not mapped - Strategic planning has little impact on day-to-day operations, budgets and resources - Individuals are left on their own to interpret goals, strategies and priorities - IT governance processes are casual and uncoordinated	- Plans are shared between silos - Different plans with a shared impact are aligned - Low prioritization between groups for high-level projects, goals and plans - There is a measuring tool (although minimal) to assess success and/or impacts - A formal strategy with a technology-centric tendency - IT governance processes follow a regular path	- Strategic plans share a common format - Strategic plans are shared with other strategic initiatives - Available metrics measure the impact of high-level goals in each programme - Projects are prioritized based on impact and alignment with established goals - Increasingly inclusive planning for all groups, plans and strategies - IT governance processes are documented and reported	- A specific group reviews goals and measures progress - Strategic goals become managed programmes - The strategy is regularly reviewed and updated - Funding processes are aligned to support strategic goals - Faster and more efficient planning and impact analyzes - Evolution strategies based on new opportunities and developments in the sector - IT governance processes are monitored and measured	- Plans are agile and interactive - Plans to change impacts are understood and shared with other plans - Projects and costs are measured against strategic goals - Metrics support decision-making processes connected with goals and forms of achieving success - A strategic review involves all stakeholders for more comprehensive initiatives - Best IT governance practices are followed and automated
People	- Inconsistency when performing existing practices - Lack of responsibility and capacity of managers/staff - Practices based on customs and habits - Teams lack emotional involvement - Lack of awareness about the relevance of usability - No initial training plan according to the type of user - Individualist attitude among ICT professionals	- Enforcement of a basic set of people management practices - Adoption of communication and coordination procedures - Introduction of performance management - People receive training - Existence of continuing training plans by type of user - The IS/IT team may receive some training in usability, although this is provided during work, rather than as a formal process	- The development of an infrastructure to increase workforce capacity - Analysis and development of skills - Human resource planning - Recognition of the usability value - Internal awareness programmes on usability	- Previously implemented work practices are now standardized and adjusted - Development of careers, work groups and practices, based on skills - Participatory culture - Integration of skills at work - A small team with usability-related responsibilities - Formal training to expand usability skills - Sharing expert staff with other health units	- Autonomous work groups - Quantitative management of performance and measured practices - Management of organizational capability - Guidance and counselling - All usability benchmarks are implemented, including the existence of a team focused on user experience - Staff are trained and know how to apply best practices when developing assessment systems for internal and external use - Healthcare professionals must participate in the definition/design of their clinical pathways	- Continuous improvement in individual and work group skills - Work groups are aligned with organizational capability/performance - Continuous human resource innovation - Business benefits are understood, usability is completely acknowledged, and the results are strategically used by the organization - Ongoing integrated development training for teams - Users are trained/encouraged to learn new skills

بلوغ سلامت الکترونیک (سطح مراکز درمانی)

	Stage I	Stage II	Stage III	Stage IV	Stage V	Stage VI
Electronic medical record	• Patient clinical data are administrative only • Independent client management and departmental systems • Primary records and clinical images in microfilm or paper formats • Requires access to paper-based systems because not all repositories are electronic • Relies on statistical formats • Content is kept in separate repositories • There is no master patient Index system	• Integrated clinical diagnosis and treatment support • Integrated use of master patient index with departmental systems to organize content • Early PACS and ERP integration • DICOM images are accessed via separate repositories • Basic scanning of medical records in selected areas only • Record management for physical content only • Electronic integration with administrative systems • Administrative capabilities in resource management, electronic discharge submission, treatment schedule and electronic claims/payment processing	• Clinical activity support • Clinical documentation includes electronic clinical order, report results, prescriptions, multi-professional care • PACS available outside radiology • Medical record recovery (EMR, ECM, DICOM) through portals • Limited EMR and DICOM integration with heavy reliance on unstructured content • Limited electronic record management • EMR with limited interoperability • CIS, LIS, RIS, PACS and medication/pharmacy management systems are implemented	• Adoption of clinical knowledge and decision-making support • Electronic access to guidelines, rules alerts and support systems • Closed-circuit medication administration • Large-scale PACS dissemination and communication • Internal portals used to access repositories with relevant contents, such as EMR and PACS • EMR connection with automated ID, barcodes and OCR for image captioning • Static forms replaced by e-forms • Integrated CPOE with billing system	• Medical documents based on structured templates • Outpatient and inpatient regimes • PACS process innovation • Complete PACS and patient medical record integration • Integration of specialized medical modules	• Fully electronic medical records for all areas • Complete recovery of medical records through an EMR-based portal • Adoption of mobile telemedicine and wireless access to clinical data • Patient records become a collaborative tool • Complete point-of-care data (tablet, voice or workstation) • Management of audit requests, incidents and investigations • Content organized to support results-based analyzes • Use of BPM for cross-functional processes • Medical record use by several healthcare providers
Information security	• Absence of policies to ensure IT/IS security • Investment in security systems is not a priority • The impact of vulnerabilities is not evaluated	• Early stage of conformity • Lack of policies and procedures defined to protect the organization • No contingency plan in crisis situations • Reactive and unplanned security control • Goals change in response to attacks with the implementation of some type of protection	• Applications and network security are implemented • Changes are not managed in a centralized way and security requests are performed ad hoc • Goals focus on business activities of the organization and the protection of central systems • Systems are falsely perceived as being protected • Unique credentials for portal access	• Security awareness programmes are adopted only for key resources • IT security procedures are formally defined • Responsibility for IT security is assigned, but execution is inconsistent • Ability to perform some penetration and detection tests • Closely monitored and mandatory access controls	• Centralized management of security-related issues and policies • Users are reliable, although system interaction is perceived as a vulnerability • No ad hoc changes • Implementation of central configuration models, from which all settings are derived • Security policies and procedures are in force • Identity management of in/out professionals	• Formal policies and procedures to prevent, detect and correct security problems • Corporate governance aligned with security needs • Internal audit policies with published results and implemented actions • Identification of security issues/incidents is systematically monitored • Notification system for security incidents • Email filters and intrusion detection systems are used
Systems and it infrastructure	• Uncoordinated and unconnected systems with limited applications • LAN infrastructure • Key financial and administrative systems are implemented • Infrastructural management is manual, unarticulated and ad hoc • At this level, IT focuses on downtime avoidance • Lack of monitoring causes reactive and ad hoc procedures • Unpredictable service performance • Lack of interoperability awareness and supporting processes • Usability focuses on products and processes, rather than on people	• Internet-based infrastructure with HIPAA • Manual, yet coordinated, infrastructure management • Knowledge storage in silos • Services are managed and predictable • The organization is focused on obtaining infrastructural control • Interoperability solutions are firstly applied in clinical/administrative areas • Product and service usability focused on users • Sporadic incursion in usability practices with limited resources	• Communication infrastructure based on Secure HL7 • Infrastructure for collaboration and knowledge-sharing • Reactive, yet becoming proactive • Stable IT infrastructure • The organization recognizes the importance of adopting norms and best practices	• Cooperative infrastructure involving medical communities • Adoption of electronic prescriptions • Implementation of international coding of diseases, alerts/contraindications for educational purposes • Incorporated nursing documentation system • Management of the emergency and cardiology departments • Interoperability guidelines defined for healthcare norms, services, policies, processes and legal compliance	• Fully connected and paper-free infrastructure (SaaS model) • Physician portal and patient portal • Wireless infrastructure • Available processing data tools for research purposes • Consolidated infrastructure level with OaaS model and RaaS model • Knowledge-sharing and collaboration inside the team • Proactive infrastructure and continuous service improvement • Interoperability assessment processes	• Infrastructure in a regional/national network connecting all service providers • Aggregate data from all hospitals and regions enable governmental healthcare planning initiatives • Remote patient monitoring and telemedicine • Continuously improving interoperability capability based on monitored process feedback • Focused on becoming a catalyst for innovation • Infrastructure for knowledge-sharing and business collaborations, both internal and external • IT/IS and healthcare stakeholders work as a team

بلوغ سلامت الکترونیک (سطح مراکز درمانی)

Table 8. Final importance ranking of IST subareas.

Subarea (influencing factor)	Sum 1	Rk1	Sum 2	Rk2	Mean	Final Rk
People	204	2	268	1	236.0	1
Electronic medical records	210	1	206	2	208.0	2
Systems and IT infrastructure	197	3	217	4	207.0	3
Strategy	188	8	224	3	206.0	4
Information security	195	5	193	5	194.0	5
Data analysis	196	4	176	6	186.0	6
Interoperability	195	5	109	7	152.0	7
PACS	190	7	92	8	141.0	8
Cooperation	166	9	81	9	123.5	9
Usability	161	10	72	10	116.5	10
Telemedicine	148	11	3	11	75.5	11
mHealth	132	12	15	12	73.5	12

IT: information technology; PACS: picture archiving and communication system.



تاکید بر کیفیت درمان و پرداخت مبتنی بر کیفیت

Value-Based Care Creates New Challenges for Systems

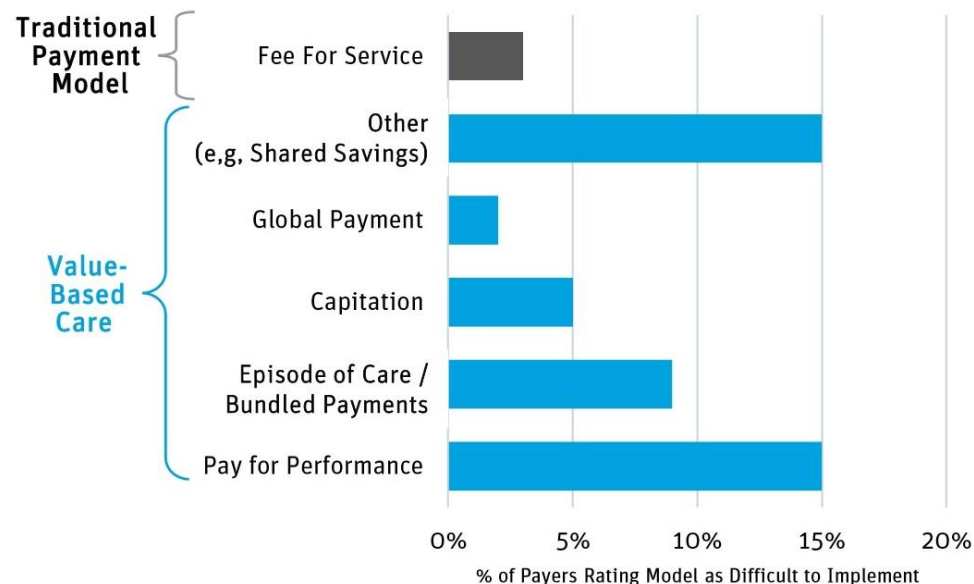
Shift to value-based care is coming...

50% of Medicare payments expected to be value-based in 2018

But healthcare systems are unprepared:

Only **20% of healthcare CEOs** say they are ready to fully implement value-based care

Healthcare Systems Rate Value-Based Care Payment Models More Difficult to Implement



Adopting value-based care requires improving outcomes while controlling costs. Healthcare systems also face difficulty in allocating payments in value-based care models. Digital health companies can help create tools to analyze patient risk and generate actionable insight on how to provide more efficient care.

Fee for Service – Fixed fee payment for service rendered

Pay for Performance – Incentives to providers based on KPIs

Global Payments - Fixed budget of care for population of patients with sophisticated risk adjustments incorporated

Capitation – Fixed budget of care for population of patients

Bundled Payments – Single payment per episode of care

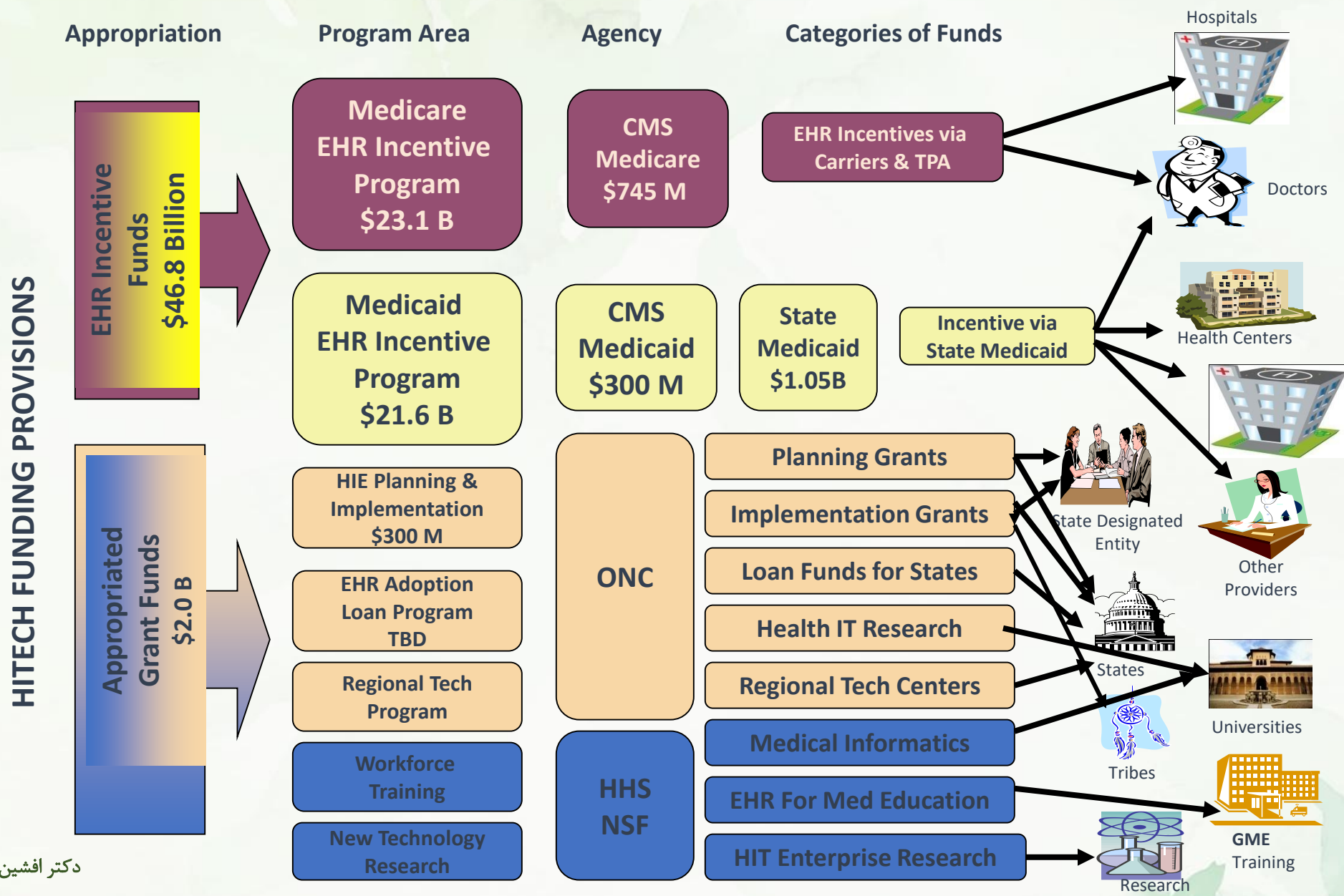
Other (Shared Savings) – Incentives to encourage cost saving

دلیل موفقیت سایر کشورها

1. داشتن برنامه استراتژیک
2. استفاده از تجربیات جهانی و نخبگان داخلی برای برنامه ریزی اصولی
3. داشتن ثبات در اجرای برنامه ها
4. سرمایه گذاری مناسب برای رسیدن به اهداف
5. داشتن اهداف شفاف، و در راستای منافع ملی
6. داشتن برنامه های عملیاتی مشخص و قابل انجام، با قابلیت سنجش و ارزیابی مداوم
پیشرفت کار
7. تاکید بر کیفیت نتایج بجای ارائه آمار کمی
8. تاکید بر رشد متوازن سلامت الکترونیک و نه یک بخش خاص آن



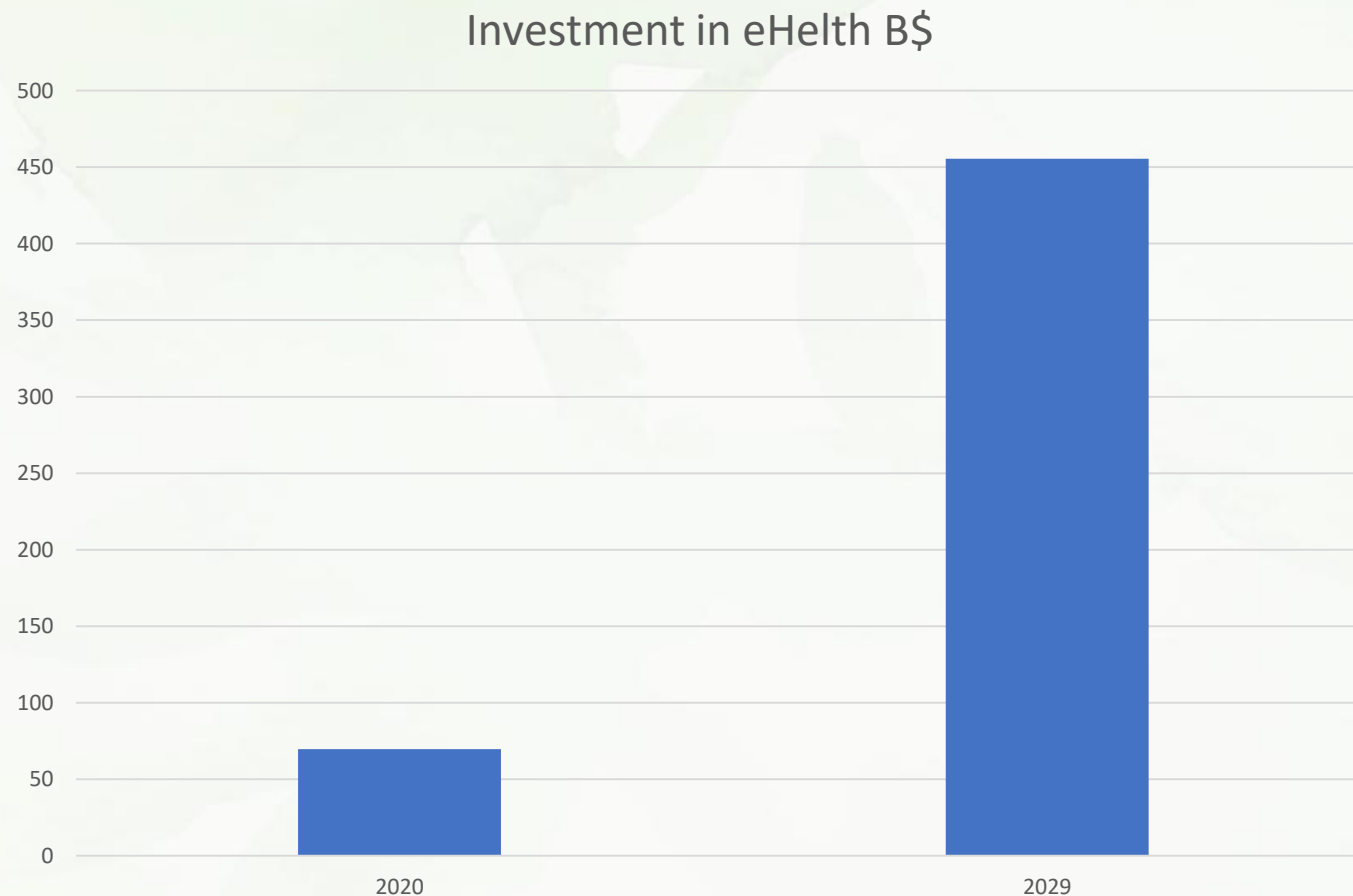
سرمایه گذاری در حوزه سلامت الکترونیک (شروع آن در آمریکا)



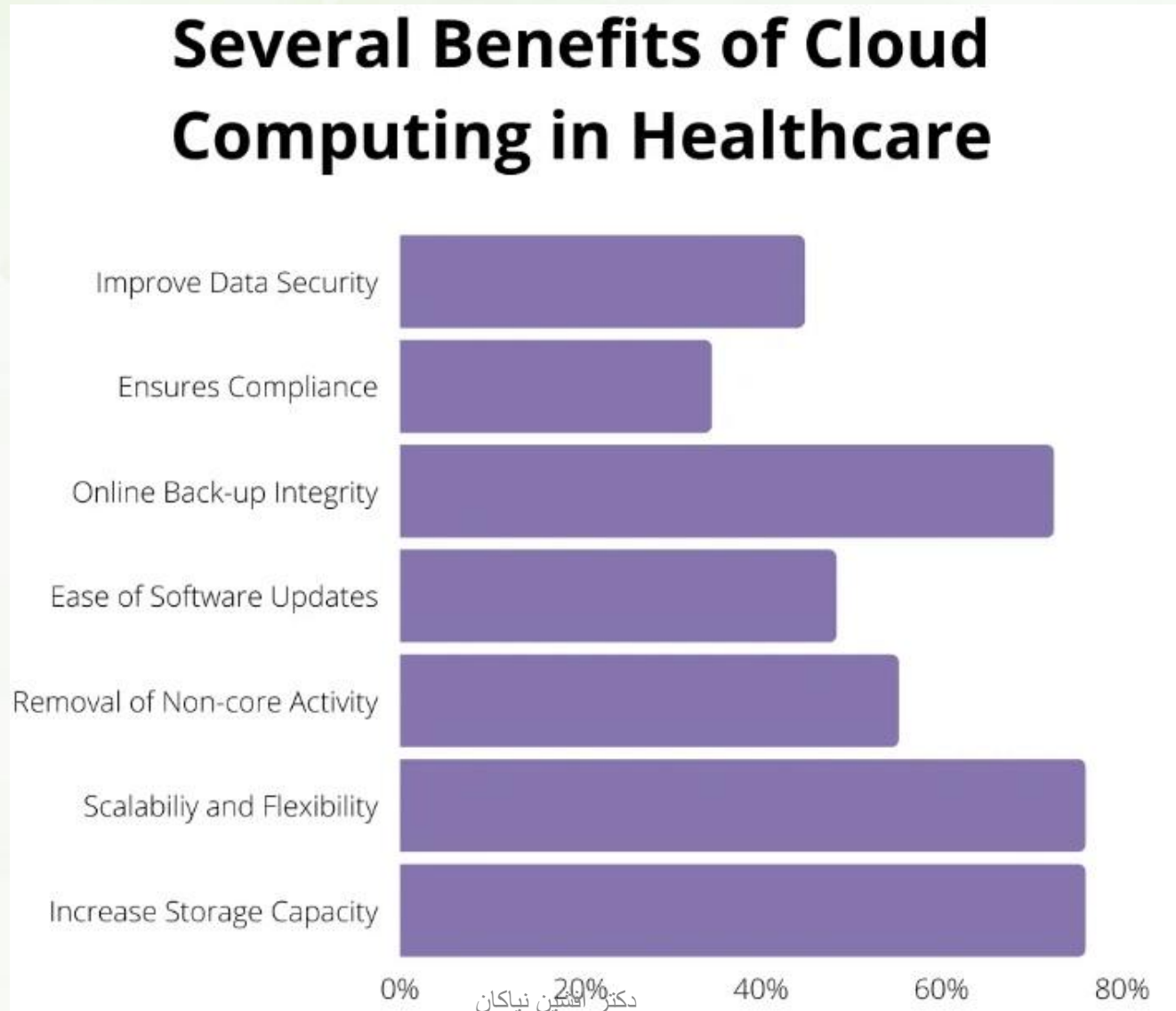


میزان افزایش سرمایه گذاری در سلامت الکترونیک در آمریکا

با رشد سالیانه ۲۳.۵٪ از B\$ ۶۹.۶۹، ۲۰۲۰، در سال ۲۰۲۹ به B\$ ۴۵۵.۶۰ می‌رسد



ارزش آفرینی رایانش ابری در سلامت الکترونیک (یکی از موارد تکنولوژی)



هزینه سامانه HIS برای رسیدن به سطح ۵ بلوغ بیمارستانی

One example of a HIS vendor that claims to offer maturity model 5 solutions is **Epic**², which is used by many large health systems and hospitals around the world. **Epic does not disclose its pricing on its website, but some estimates suggest that it costs \$500 to \$800 million to implement Epic for a large health system**³.

However, **this may not include the costs of hardware, maintenance, training, customization, and integration with other systems.**

Another example of a HIS vendor that may offer maturity model 5 solutions is Cerner, which is another leading provider of health information technology solutions. **Cerner** also does not disclose its pricing on its website, but some reports indicate that it charges **\$25 to \$75 million** for a single hospital implementation. However, this may vary depending on the size and complexity of the hospital and the scope of the project.

چالشهای ما در رسیدن به اهداف درست (۱)

نداشتن برنامه استراتژیک
عدم استفاده از تجربیات جهانی و نخبگان داخلی برای برنامه ریزی اصولی
نداشتن ثبات در مدیریت ها و اجرای برنامه ها
نداشتن اهداف شفاف، و در راستای منافع ملی
نداشتن برنامه های عملیاتی مشخص و قابل انجام، با قابلیت سنجش و ارزیابی مداوم پیشرفت کار
عدم توجه به شاخصهای جهانی بلوغ (چه در سطح ملی و چه در سطح بیمارستانی)
تاکید بر کمیت نتایج بجای تلاش برای استفاده از سلامت الکترونیک برای ارتقای کیفیت خدمات ارائه شده
عدم رعایت استانداردهای سلامت الکترونیک و ملوک الطوائفی در استقرار سلامت الکترونیک
مشکلات متعدد فرایندی و نبودن گایدلاینهای مورد نیاز
نظام پرداخت (پاداش) مبتنی بر بیمار محوری و نه کیفیت
سهم خواهی نهاد های موازی و وجود رانت

چالشهای ما در رسیدن به اهداف درست (۲)

- عدم توجه به تربیت و نگهداشت نیروی انسانی لازم و توانمند در مراکز درمانی
- دیده نشدن ارزش نرم افزار در سرمایه گزاری های مورد نیاز
- مهاجرت گسترده کارشناسان و حتی مدیران ارشد
- عدم پرورش نیروی انسانی توانمند توسط دانشگاه های کشور
- عدم امکان استفاده از بستر رایانش ابری برای ارائه خدمت به مراکز دولتی به دلیل محدودیت های امنیتی!!
- دستور عملهای متعدد و اکثرا کارشناسی نشده وزارت و بیمه ها برای تغییر در برنامه ها
- عدم پرداخت هزینه مناسب برای نرم افزار
- گرفتن وام بی بهره از شرکتهای بجای حمایت آنها.
- **عدم شفافیت و آینده روشن برای سرمایه گزاری مناسب بخش خصوصی**

راهکار

1. حاکمیت دانایی مبتنی بر دانش و تجربه
2. ثبات مدیریتی
3. داشتن برنامه استراتژیک منطقی، جامع و به روز بر اساس تجربیات جهانی
4. سرمایه گذاری منطقی و مناسب بر روی نیروی انسانی، نرم افزار و زیرساخت
5. بهینه سازی، شفافیت و تکمیل فرایندها
6. داشتن استانداردهای واحد و پایبندی به آن
7. حذف نهاد های موازی و رانتي
8. بازنگری و تدوین قوانین لازم و حذف موارد زائد
9. رسیدن به درک منطقی از ارزش خدمات، نرم افزار و نیروی انسانی بر مبنای معیارها
10. حمایت پرداخت درست و منطقی هزینه بخش خصوصی (و نه خصولتي)



با تشکر:
ادامه پنل

دور نما و چالش‌های پیش روی سلامت الکترونیک از دیدگاه بخش خصوصی

دکتر افشین نیاکان
کمیسیون سلامت دیجیتال سازمان نظام صنفی رایانه کشور