



How ARRA will change your clinical device strategy

...EMR “meaningful use” requires useful and usable tools

Healthcare Informatics Webinar

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Key topics (snapshots)

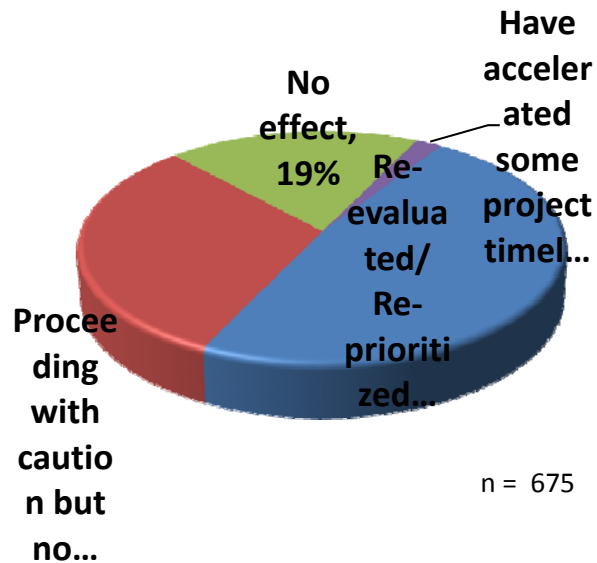


- ARRA Meaningful Use (MU) Criteria and Timelines (V2 7/16/09)
- How BCMA forces Point of Care (POC) model – what this means for hospital and nursing leadership and IT
- Why POC (“real-time”) model requires new care delivery models and supporting device strategies & solutions (no perfect model or solutions: blended devices the norm)
- Top cultural and technology issues most hospitals face in supporting POC, BCMA, devices
- Potential performance improvements from POC data access
- IT need to redefine “success” - focus on financial, clinical and service/ satisfaction outcomes (ultimate goal of EMR and ARRA MU)

Please note: **this session not a discussion of device features and functions; focus will strictly be on strategic implications and actions healthcare organizations need to consider**

Current Market Mood...fear, uncertainty, doubt

Q. How have IT projects been affected in the current economic climate?



31% - Cautious
+ 48% - Reevaluating
= 79% - Market slowdown

"We cannot find the finances to build out our hospital EMR in order to qualify for the ARRA funds."

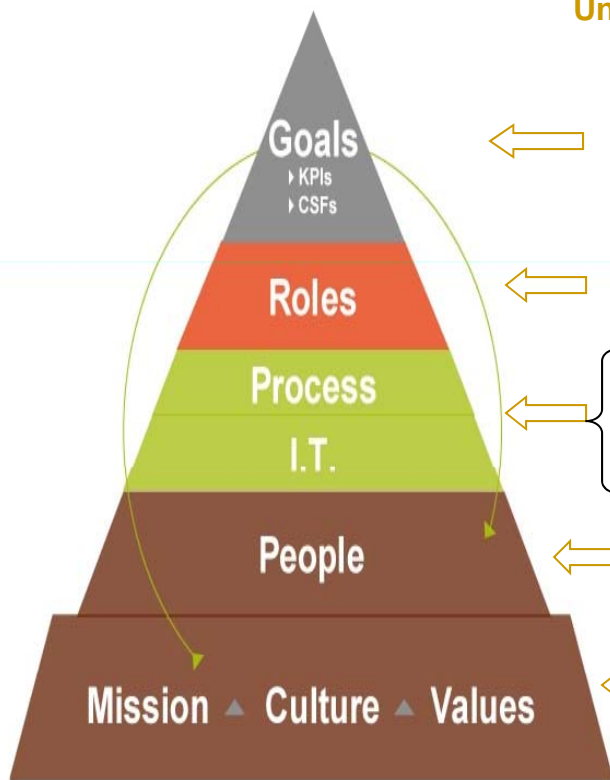
"We are spending lots of time in committees trying to decipher the legislation. Hope we're not spinning our wheels. For now the best we can say is "business as usual."

Healthcare Informatics Research Series, *Trends in Financial Strategies and Technologies*, Vendome Group, 2009

ARRA "Analysis" or "Paralysis"?

“Meaningful Use” not driver of most EMR or device initiatives

HIGH PERFORMING ORGANIZATIONS



Universal Goal – ↑ Patient Safety -

Negligible progress - \$BB 10 yr investment by HCOs & vendors (post 1999 landmark IOM study)*

- **KPIs** (aka metrics) - hospital execs/clinician vs hospital IT/vendor - goals not “aligned” → “in conflict”
 - HCO/clinician goals – ↓ errors (financial performance)
 - Hospital IT & IT Vendor goals – schedule, IT budget, systems sold / installed
- **CSFs** – e.g. Device Adoption (WF-enabling, ergonomic) and ratios; Network support (budget!)

IT **Role** in change management / process design unclear (often un-or under- budgeted)

Med Management **Process** ultra complex and integrated - *key device driver*

- Devices applied to flawed processes (paper-based or existing EMR)
- Solution strengths & limitations drive vendor recommendations to hospitals

IT largely not improving clinical outcomes or meeting user needs **

People – Users demanding more useful (W-enabling) and usable (ergonomic) IT
Vendors pressured – market and wall street/investor demands

Execs must lead “**Culture** of Quality” (drive process design/IT)***

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*How we should approach IT
and measure success*

KPI = Key Performance Indicator
CSF = Critical Success Factors

* **To Err is Human – To Delay is Deadly - Ten years later, a million lives lost, billions of dollars wasted** ; Consumers Union’s Safe Patient Project. May 2009

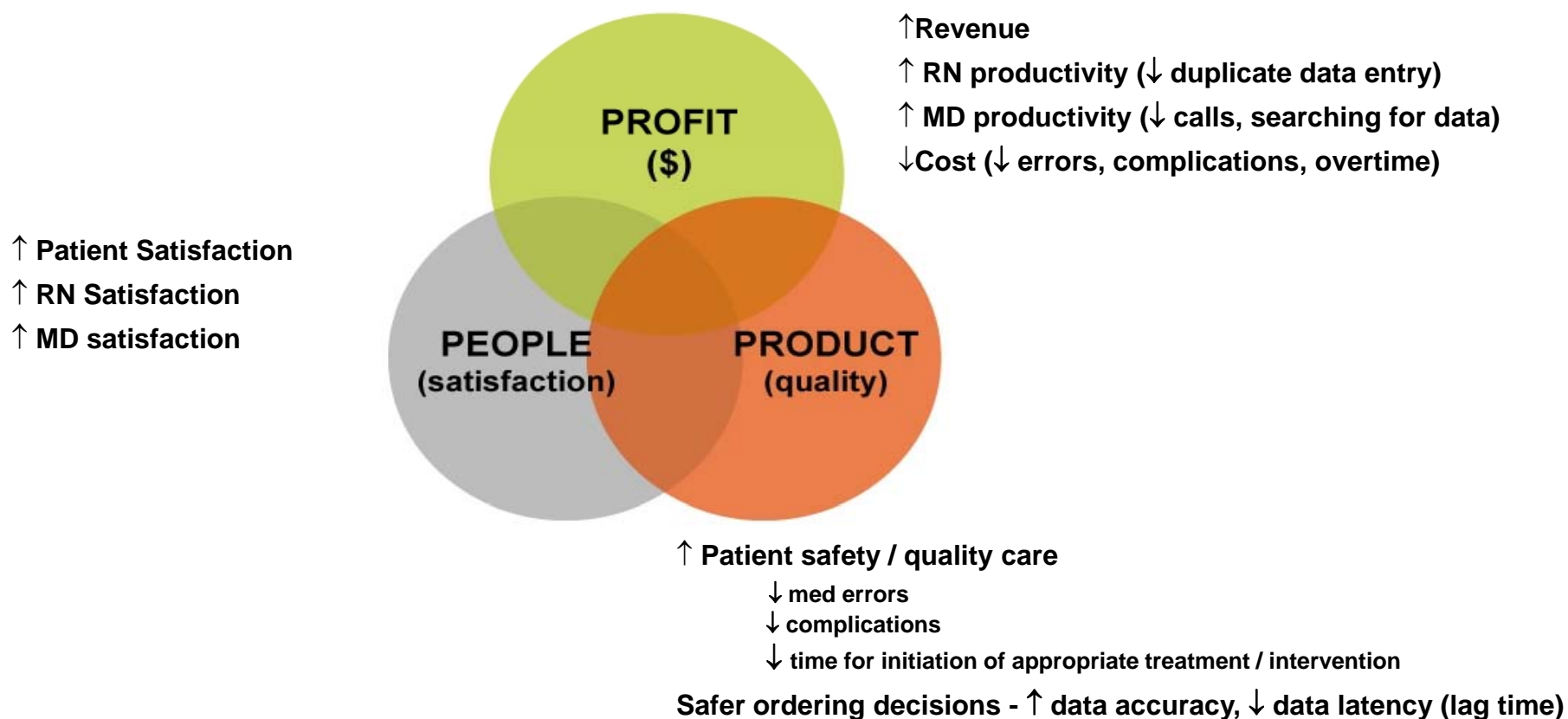
* Hearst Newspaper National Investigation Aug 2009

** Nursing Adoption of IT: A look from the Inside Out, KLAS 2007, Numerous hospital, clinical and IT industry reports (2008 and 2009)

*** Joint Commission Alert 9/09

Potential benefits of MU – “real time” POC data entry via enabling clinical devices

KEY PERFORMANCE INDICATORS



Results of Poorly Designed or Implemented Devices

KEY PERFORMANCE INDICATORS

Nurses report:

- 64% say wireless not reliable for patient care
- >75% of COWs not reaching the POC

(Spyglass: "Healthcare Without Bounds:
Point of Care Computing for Nursing," 2007)



↑ COST - ? ROI

↓ Productivity (MDs and RNs)

↑ Errors - ↓ Patient Safety

(Joint Commission, ISMP, IOM,
Koppel*, etc.)

↓ EMR adoption MDs (a factor)

↓ Poor RNs devices adoption

– abandoned or underused

↓ Poor service / pt satisfaction

(KLAS, Advisory Board Company, IOM, etc.)

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* *Technology Evaluation : Workarounds to Barcode Medication Administration Systems: Their Occurrences, Causes, and Threats to Patient Safety*
Ross Koppel, et al. JAMIA 2008

Koppel R, et al: Role of computerized physician order entry systems in facilitating medical errors. *Journal of the American Medical Association*, 2005, 293:1197-1203

MU EMR Device Drivers – Criteria & Timeframes*

	2011 – Framework / Foundation	2013 – Processes	2015 – Outcomes
	Infrastructure, Data Exchange, Basic Functions <ul style="list-style-type: none"> - Demographics - Privacy, Security, Interoperability (Tech Standards) - Data sharing (structured, codified clinical data) - Basic functions, e.g. Vital Signs, lists 	Fully robust EHRs <ul style="list-style-type: none"> - CPOE/eScribing - Evidence-based Orders - Clinical documentation - Closed Loop Medication Management 	Performance Improvement
	Patient lists <u>CPOE</u> – 10% of all orders any type entered by authorizing provider type, e.g. MD, RN, DO, NP Drug data base One <u>C</u> linical <u>D</u> ecision <u>S</u> upport (CDS) Rule Lists <ul style="list-style-type: none"> □ Allergy (Active) □ Medication (Active) □ Problem – (current & active dx - ICD9 or SNOMED) Vital signs: BP - Ht/Wt (BMI)	CPOE for all orders types - Evidence-based order sets eScription (at discharge) CDS at Point of Care <u>Closed-loop Medication Management including eMar “with computer assisted administration”</u> <u>Clinical Documentation in EHR</u>	Enhanced CDS (US high-priority conditions)
	Other: Initial Quality Reporting to CMS (e.g. % of diabetics with A1C under control)	Additional Reporting (e.g. NQF) Chronic Disease Management (patient lists, CDS)	More Metrics TBD - Quality - Safety - Efficiency (SNOMED)
Device Impact	CPOE (10%) – multiple form factors, locations RN POC REAL TIME – in-room and mobile models (note benefits of Medical Device Integration) Interdisciplinary – rounding Patient and Family Engagement (POC device)	MD expanded use – local and remote Closed Loop Med (eMar BCMA) – “forces POC, real time” (drives RN/RT device strategy) Documentation – POC, local and remote	Multi-media Medical Device Interoperability

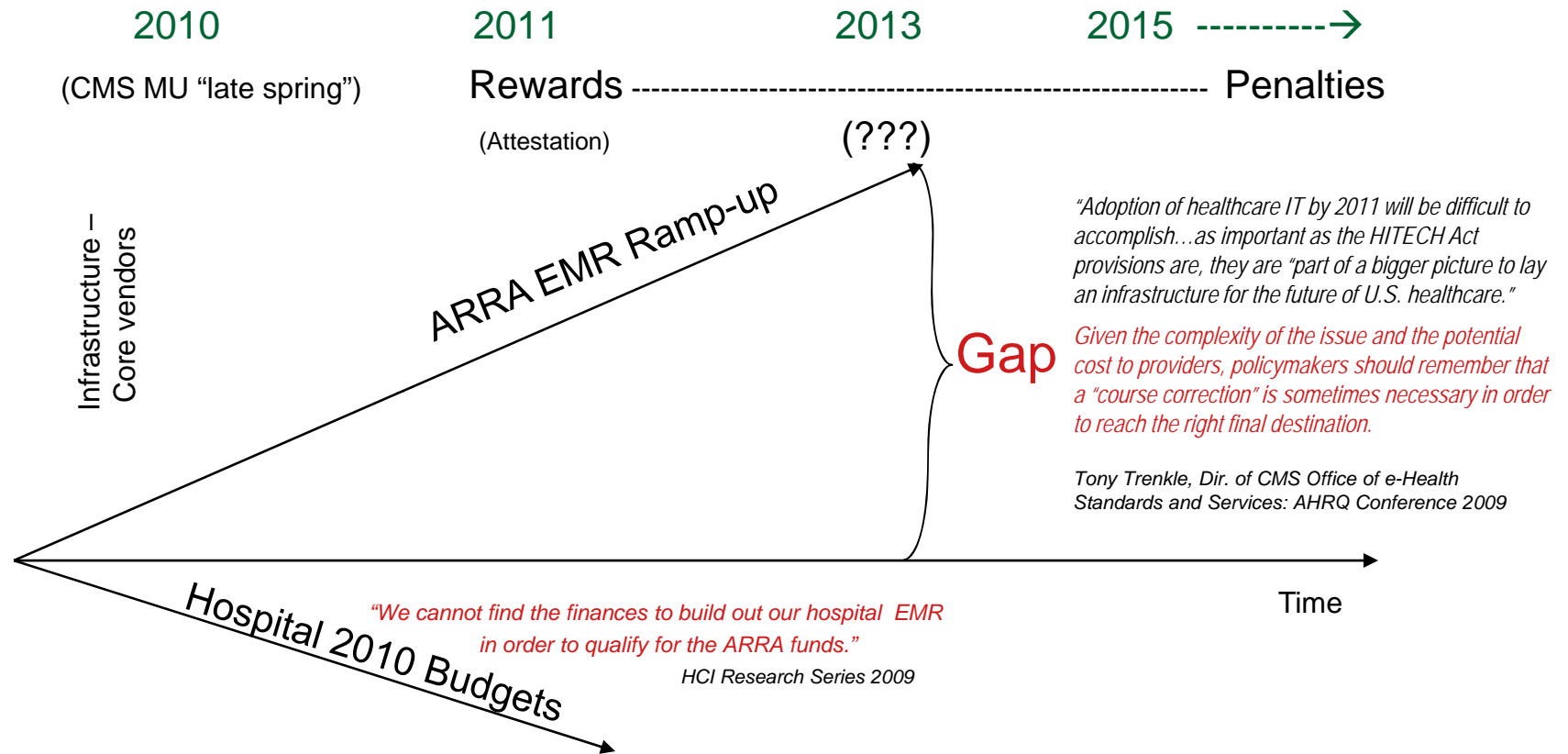
Source: Farrell Associates

* EXCERPTED by Farrell Associates from ARRA MU Version 2 MU criteria (July 16, 2009)

http://healthit.hhs.gov/portal/server.pt/gateway/PTARGS_0_10741_887553_0_0_18/Proposed_Revisions_to_Meaningful_Use_post_7_16_2009_FINAL_PT1_508.pdf

Red items = key MU EMR criteria that drive device strategy

Aggressive ARRA Ramp up / Shrinking IT Budgets



CPOE

1973 – 85+% CPOE (pioneer site)

2008 – 2.5% / 2.8 (Q12009)*

2011 (CPOE 10%)

2013 CPOE

Closed Loop Med Admin

2008 - 2.5% (2008) / 3.6 (Q1 2009) *

* Data Source: HIMSS Analytics

2013 Closed Loop Med Admin

Meaningful Use = Improved Outcomes

Blumenthal Hints at Meaningful Use

HDM Breaking News, October 2, 2009

In a new letter to the industry updating federal activities, David Blumenthal, M.D., national coordinator for health information technology, explains why "meaningful use" of electronic health records is the crux of the Medicare and Medicaid incentives in the American Recovery and Reinvestment Act. He also gives some hints on how a proposed rule due by year-end will define meaningful use.

"By focusing on 'meaningful use,' we recognize that better health care does not come solely from the adoption of technology itself, **but through the exchange and use of health information to best inform clinical decisions at the point of care," Blumenthal writes.** "Meaningful use of EHRs, we anticipate, will also enable providers to reduce the amount of time spent on duplicative paperwork and gain more time to spend with their patients throughout the day. It will lead us toward improvements and sustainability of our health care system that can only be attained with the help of a reliable and secure nationwide electronic health information system.

"The concept of meaningful use is simple and inspiring, but we recognize that it becomes significantly more complex at a policy and regulatory level. As a result, we expect that any formal definition of 'meaningful use' must include specific activities health care providers need to undertake to qualify for incentives from the federal government.

"Ultimately, we believe 'meaningful use' should embody the goals of a transformed health system. Meaningful use, in the long-term, is when EHRs are used by health care providers to improve patient care, safety, and quality."

Blumenthal's full letter available at <http://healthit.hhs.gov/portal/server.pt>.

POC Models Drive Device Strategy & Solutions – BCMA forces IT to POC

The Reality of Meaningful Use

EMR Adoption Model SM			
Stage	Cumulative Capabilities	2008 Final	2009 Q1
Stage 7	Medical record fully electronic; HCO able to contribute CCD as byproduct of EMR; Data warehousing in use	0.3%	0.3%
Stage 6	Physician documentation (structured templates), full CDSS (variance & compliance), full R-ACS	0.5%	0.8%
Stage 5	Closed loop medication administration	2.5%	3.6%
Stage 4	CPOE, CDSS (clinical protocols)	2.5%	2.8%
Stage 3	Clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology	35.7%	37.0%
Stage 2	Clinical Data Repository, Controlled Medical Vocabulary, Clinical Dec, may have Document Imaging	31.4%	32.1%
Stage 1	Ancillaries – Lab, Rad, Pharmacy – All Installed	11.5%	9.0%
Stage 0	All Three Ancillaries Not Installed	15.6%	14.5%
Total Hospitals		n = 5166	n = 5170

Data from HIMSS Analytics™ Database N=5166/5170 ©2009 HIMSS Analytics

- Investment highest - Stages 4 & 6

- Hospital IT expenses and budgets related to clinical sophistication



- Stage 6 sites: 80 to 100% of chart electronic

- Average ratio of IT capital budget to operating budget is 30%

- Average total capex to reach Stage 6 for academic facilities: \$58 million

- Average total capex to reach Stage 6 for general med/surg: \$7.4 million

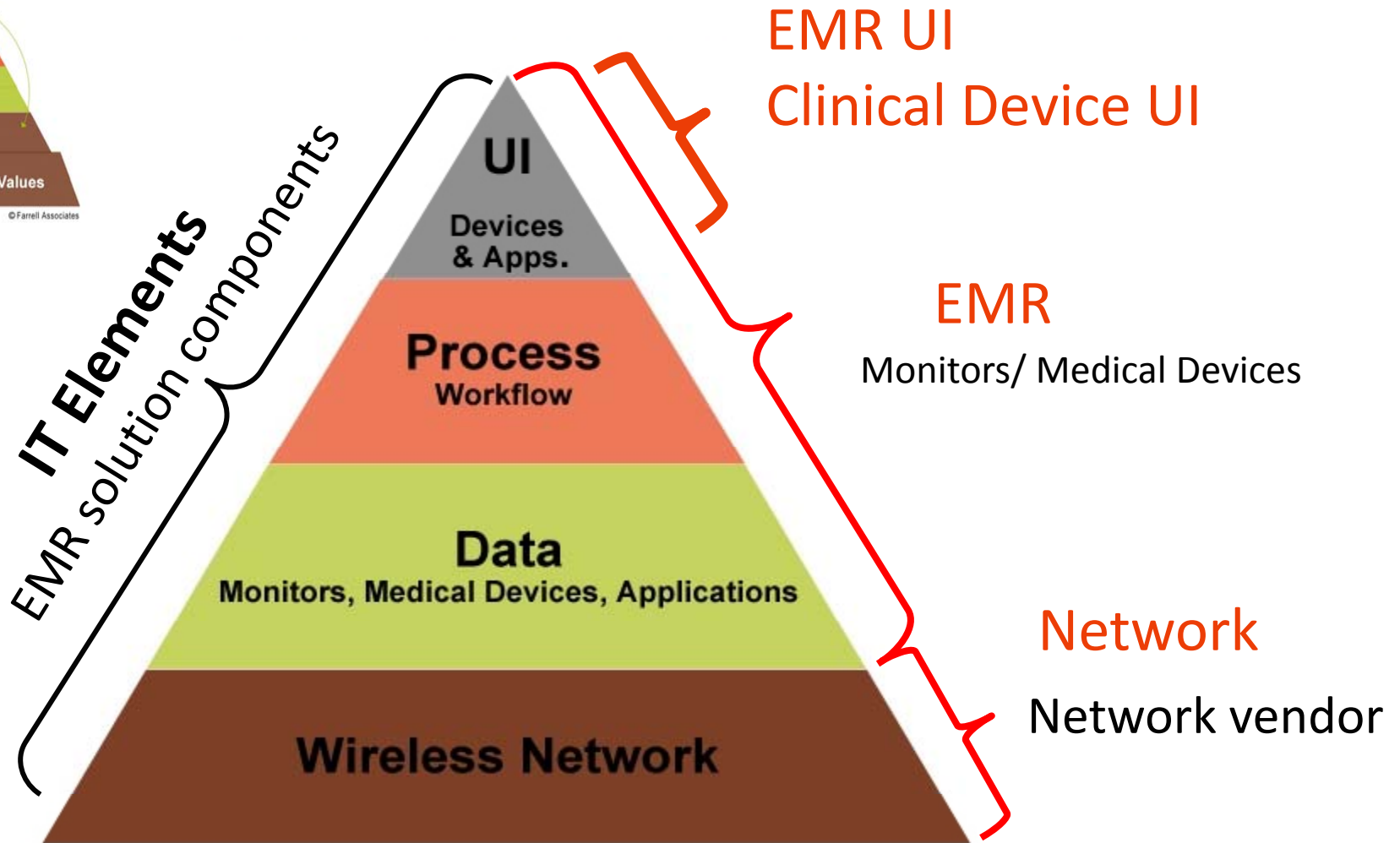
- Average duration for all facilities to reach Stage 6 from the initial EMR project launch- 7 years

Source: HIMSS Analytics 2008

CDR—clinical data repository
 CMV—controlled medical vocabulary (such as SnoMED)
 CDSS—clinical decision support systems
 CPOE—computerized prescriber order entry
 PACS—picture archiving and communications systems

Electronic Medical Record Solution

HIGH PERFORMING ORGANIZATIONS

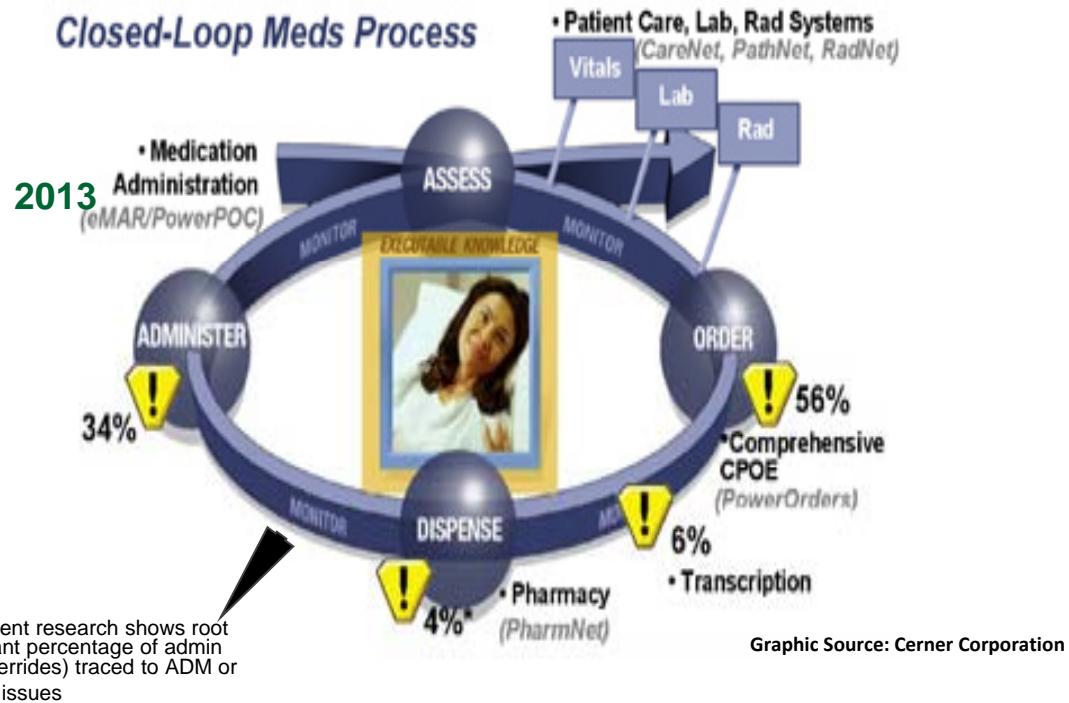


IF IT applied to flawed processes...



Strapping New Technology On Old Processes Will Not Necessarily Propel You in The Right Direction!

Focus on improving patient safety **outcomes** in your medication-use **process** – enable via **EMR and devices**



Closed loop med process changes device models and recommendations re: form factors, mix, requirements, locations, and ratios

ADM = Automated Dispensing Machine, e.g. Pyxis

(Year) = ARRA MU adoption year

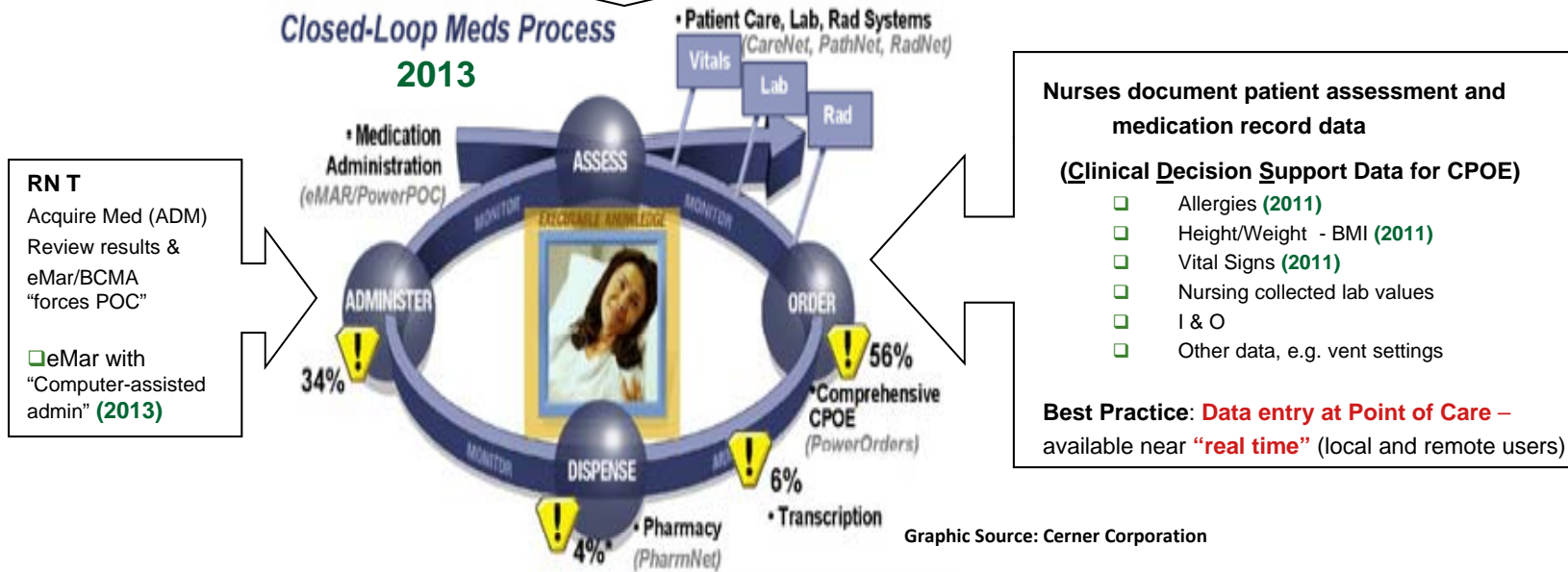
Focus on improving patient safety **outcomes** in your medication-use **process** – enable via **EMR and devices**

MD / Providers review results and enter orders (2011:10% – 2013 all)

- Locally
- Point of Care
- Nursing Station
- Remotely
- In hospital (ED, etc.)
- In community (clinic, home)

Up to date assessment and eMar data **CRITICAL** for safe and effective orders

Closed-Loop Meds Process 2013



ADM = Automated Dispensing Machine, e.g. Pyxis

(Year) = ARRA MU adoption year

POC data includes monitor & device data – huge value seen in device integration

- Patient data collected by nursing at POC

- Allergies

- Height/Weight

- eMar (BCMA)

MEDICAL DEVICE INTEGRATION –
initial targets

- Vital signs - e.g. spot check and continuous monitoring devices

- RN collected values from bedside monitors, e.g. O2 sat, glucose

- Intake (IVs) & Output - e.g. Smart pumps

- Other patient assessment data and device values, e.g. ventilator settings



Medical Device Integration – Potential Benefits

Effect on Clinical Workflow, Quality of Care, Patient Safety	Key Metrics	Clinician Type	Baseline (pre iSirona)	Improvement (post iSirona)
Amount of time spent charting/documenting	% of time nurses spend charting / documenting device data	Nurse	25%	15%
Data Latency	Amount of time elapsed from when patient data is generated by device and when it is validated in clinical system	Nurse	12 hrs	2 hrs
Time Delivering Patient Care	% of time delivering patient care	Nurse	80%	85%
Quality and availability of patient device data	On scale of 1 – 10, how would you rate the timeliness, accuracy and breadth of data available in clinical systems	Nurse	5	9
		Physician	5	9

Excerpted from Case Study (ICU, CVICU)- Wise Regional Health System, Texas

iSirona 2009

Key Recommendations

- **Map device strategy to your organization goals (plans / schedules) – don't let ARRA drive bad practice**
- **Document, align and prioritize HCO goals (target performance outcomes, benchmark and continually measure)**
 - Assign accountable business owners for targeted benefits
 - Measure IT based on enabling HCO goals, not just IT budget and schedule compliance
 - Focus success at YOUR organization – ARRA not an implementation plan or phasing strategy
 - ID / budget CSFs (change management, process design, device ratios, infrastructure, etc.) – if unaffordable or unachievable, go to “Plan B”
- **Design device strategy/model and select solutions in context of targeted goals and projected ROI/benefits**
 - Match device strategy and solutions to “future state” care model and processes factoring physical and IT environment, culture etc. (devices must support but won't drive change to POC model!)
 - Focus on factors promoting sustained device adoption/user satisfaction and benefits/TCO not just device “selection” and initial costs
- **Establish - Prudent Priorities, Sensible Sequencing, Reasonable timelines**
(based on HCOs specific goals, requirements, physical environment etc. - ability to absorb change and fund)
- **Promote collaboration – Execs, clinicians, IT and Biomed for integrated solutions (maintain user view)**
- **“Create user raving fans” - promotes HCO ROI (EMR and devices) and vendor sales!**
- **Remember: Business and clinical requirements continually evolve - investment never ends**
 - Continual demands for performance assessment and improvement
 - Continual changing of goals and metrics
 - Continual changing of IT – new and improved vendor solutions, innovation



How ARRA Will Change Your Clinical Device Strategy

Rick Hodge, EVP Healthcare Solutions
InfoLogix, Inc.



Mobility in the Context of ARRA

- What we're hearing from 1,500 hospitals across North America: urgency to get started because of aggressive deadlines, but trepidation over beginning something that may or may not qualify for funds under MU
- InfoLogix takes a holistic approach: solutions to improve clinical and financial performance, mobilize healthcare applications, and optimize EMR implementations.
- Nationwide team of RNs, Doctors, Pharmacists, etc. with over 20 years of combined experience in consulting, IT and clinical healthcare disciplines.
- “Walked in Your Shoes” – we feel your pain from complex workflows, aggressive schedules, budget cuts, etc.
- Key differentiator: can't stop at simply evaluating EMR options and implementing systems; success is entirely dependent on bringing the integrated data directly to the point of care

How InfoLogix Can Help

- Hospital mobility strategy
- Core competency in workflow redesign
- EMR evaluation and implementation
- Wireless network support services (infrastructure is key)
- End-user adoption through eLearning support
- Mobile device strategy and options

Best of Success in Your ARRA Challenges!
