


SINI 2016
26th Summer Institute in Nursing Informatics

Informatics at the Crossroads of Care Coordination

July 20-22, 2016
University of Maryland School of Nursing, Baltimore, Maryland



Transforming Information Systems to Meet Enterprise Wide Goals
Applying Informatics to Optimize Care

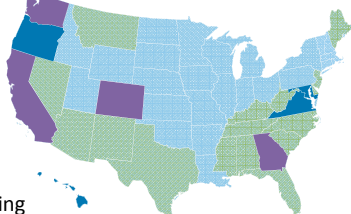
Ann OBrien RN, MSN, CPHIMS
Director of Clinical Informatics
Kaiser Permanente
ann.o'brien@kp.org

Objectives

- Describe current drivers that are transforming health care
- Discuss opportunities to leading change
- Explore how nursing informatics can be a key enabler to healthcare transformation

Kaiser Permanente

- 7 regions serving 8 states and the District of Columbia
- More than 10.6 million members
- 187,000 employees
(more than 51,000 nurses)
- 38 medical centers
(with hospitals)
- More than 620 medical offices
(ambulatory care)
- \$60.7 billion operating revenue (2015)



3

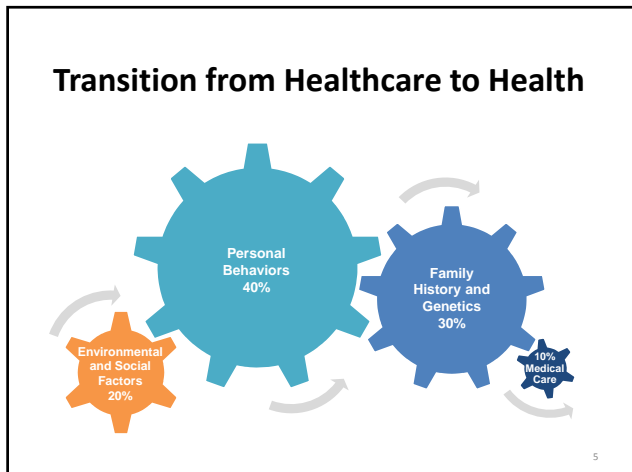
The New Health Ecosystem

Forbes

- Dave Chase, Leonard Kish

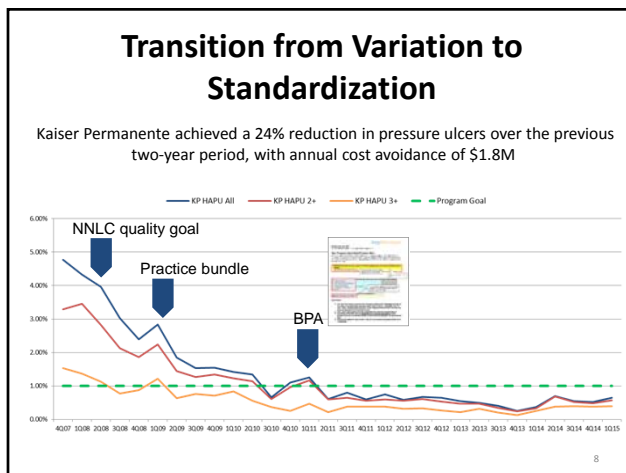
- To improve care and reduce costs with this new science, we must focus on that **other 80% of outcomes are non-clinical**, including social and psychological determinants.
- True health system leadership comes from not just being stewards of hospitals and clinics but **stewarding social and economic factors** and the physical environment of a community, which account for half of outcomes.
- The most trusted professions are nurses. With the trust individuals have in our profession they activate consumers/patients **to do things we wouldn't normally do**. Respect this trust.
- The **most important "medical instrument" is communication**. Communications drive actions, build relationships and create trust.

4



Kaiser Permanente Nursing SmartCARE Strategy

- Vision**
 - Disruptively innovate and transform the inpatient work environment to enable simple, reliable patient care delivered by nurses and their inter-professional partners through the wise use of data, analytics, and information technology.
- KP SmartCARE**
 - Simplifies the nurse’s path
 - Supports the nurse with knowledge
 - Reduces the nurse’s non-value add tasks

Transition from Reactive to Proactive

- Well designed clinical decision support can provide a brief moment of clarity in the storm of data collection when providing patient care

	No	ESI	Severe Steps	SIRS
SHORTNESS OF BREATH	2	3	⚠️	☹️
OTHER	3	3	⚠️ Draw sepsis labs*	
WEAKNESS	3			
ABDOMINAL PAIN	3			
		3		☹️
KIDNEY PAIN	3			☹️
SHORTNESS OF BREATH	3			☹️

ERT has been met at Tue May 10, 2016 7:30 PM

- Alerts display based on nursing data and lab results
- Having this data readily visible is prompting timely intervention from ED clinicians

9

Delirium: How Big is the Problem?

More than **7 million** Americans suffer from delirium each year.

More than **60% of patients** with delirium are not recognized by the healthcare system.

Source: American Delirium Society: <https://www.americandeliriumsociety.org/about-delirium/healthcare-professionals>

10

Transition from Nursing-centric to Interprofessional Care

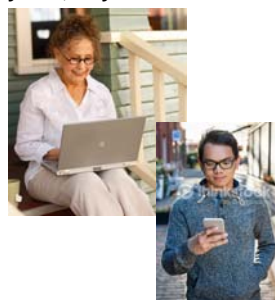


"Alone we can do so little; together we can do so much."
Helen Keller

Transition from Routine to Personalized

From "static" to "dynamic" Anytime, Anywhere

Data > Information > Knowledge



*Real time alerts & reminders can assist the patient care team to connect data points that others may have observed or entered into the EHR.
* Personalize care based on patient risk factors, needs, preferences, social determinants and shared decision making.

12

Transition from Chaotic to Integrated

Convergence of voice, secure text messaging, alarms, alerts, intelligent routing, simple documentation and BCMA on smart devices will improve safety by decreasing the cognitive burden.



13

Medical Errors

The Third Leading Cause of Death in the US

- The annual list of the most common causes of death in the US compiled by the CDC relies on ICD code however causes of death not associated with an ICD code such as human and system factors are not captured.
- The 1999 IOM Report describes incidence as 44,000-98,000 annually but is considered limited and outdated.
- The US DHHS reported 180,000 deaths due to medical error per year among Medicare beneficiaries alone. If this rate is applied to all US hospital admissions it would be over 400,000 deaths /year more than 4 times the IOM estimate.
- Standardized data collection and reporting processes are needed.
- **Measuring the consequences of medical care on patient outcomes is a prerequisite to creating a culture of learning from our mistakes and moving us closer to the IOM's goal of creating a learning health system.**

Artificial Intelligence

- Healthcare is wrestling with the threat & promise of AI.
- In May 2014, Stephen Hawking warned that the commercially-driven creation of intelligent machines could be *"potentially our worst mistake in history."*
- AI is already here, it's just not evenly distributed.
- Google has completely reorganized AI and machine learning. IBM has done the same, declaring itself the leader in cognitive computing.
- IA is "going to create even more opportunity — and much more displacement." Max Ventilla, the former head of personalization for Google; now at a start up AltSchool
- OpenIA Mission: *"to advance digital intelligence in the way that is most likely to benefit humanity as a whole, unconstrained by a need to generate financial return."*

"Is IA the Worst Mistake in History?"

John Battelle Linked In Big Ideas & Innovation, Technology & Entrepreneurship

The Pace of Change

- According to IBM, 90% of the world's information was created in the past 2 years.
- A new technique lets scientists edit DNA literally rewriting the embryo's genetic code...

"If we start to say that people with genetic conditions should not exist, then what message does that send to people who have that disorder?"

Calum MacKellar
Director of Research
Scottish Council Human Bioethics



Moving from Data to Knowledge

- Goal: *"By 2020, 90% of clinical decisions will be supported by accurate, timely, and up-to-date information and will reflect the best evidence available."* (IOM 2015)
- Creating a road map:
 - **Simplify and speed documentation.** (AMIA EHR 2020 Taskforce May 2015 JAMIA)
 - **Ensure nursing data is accurate, complete and timely.**
 - **Promote biomedical device integration for decreasing duplicate documentation & non-value added tasks.**
 - **Create, standardize and share best practices, nurse-initiated protocols and clinical decision support tools.**
 - **Maximize clinical decision support to link data entry to evidence based, personalized care.**
 - **Develop real time dashboards and reminders to support nursing workflow and data visualization.**

Precision Nursing**

Patient centered, highly reliable, evidence based and personalized nursing practice across the continuum of care that supports:

- Quality outcomes
- Safety
- Decreased costs
- Efficiency
- Nurse satisfaction

**Nursing Knowledge Big Data Science
University of Minnesota Sponsor
Transforming Nursing Documentation
Workgroup 2016

Valuing Nursing & Nursing Data

Pam Cipriano, President of the ANA

- 2016 is the year of Patient Safety
- 1 out of every 100 people in the US is a nurse
- Nurses are the primary coordinators of care
- Reinvent the plan of care so it is patient-centered, interoperable, longitudinal and meaningful.
- Rediscover the patient's story
- Move away from episodic care and data

Nursing Informatics

Leaders in Care Transformation

- Make the Complex Simple
- Use EHR to ensure a knowledge-enabled workflow
- Partner with CNEs to decrease variation in practice
- Eliminate data silos in your EHR
- Ensure Evidence based and personalized care
- Present knowledge in real time to enable EBP
- Promote highly reliable processes to decrease errors & decrease costs
- Build a seamless experience across care settings
- Model the Way with team based care
- Create and Deliver Value

Suggested Reading

- *“Medical Error-The Third Leading Cause of Death in the US”* Martin Makary, Michael Daniel BMJ 2016
- *Start with Why* Simon Sinek
- *Teaming: How Organizations Learn, Innovate and Compete in a Knowledge Economy*
Amy C. Edmondson Harvard Business School
- *Healthcare Information Management Systems: Cases, Strategies & Solutions* Charlotte Weaver, Marion Ball, George Kim and Joan Kiel Editors 2015
- *Big Data-Enabled Nursing: Education, Research, and Practice.* Connie W Delaney, Charlotte A Weaver, Judy J Warren, Tom Clancy, Roy L Simpson. Springer, London, Publication date 2017



*“The Greatest glory in living lies not in never falling,
but in rising every time we fall.”*

- Nelson Mandela

Q&A



ann.o'brien@kp.org

23