

The Technology Enabled Nurse

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Leading Edge Technologies: Bringing Value to Nurses and Patients

- Technology makes care safer and more efficient
 - Removes human potential for errors
 - Provides for a single set of clinical data
 - Saves time
 - Saves money
 - Saves lives

“Guiding Principles for the Development of the Hospital of the Future” (Joint Commission, 11/08)

- Technology for the Provision of Care
 - Digital technology is moving the location of care outside the traditional “four walls”
 - Care migrates from hospital, to provider office, to home
 - Allows for patient self management
 - Does not replace high-touch

“Hospital of the Future”

- Emphasis on disease management and vital sign monitoring
 - US Department of Veterans Affairs leading the way with CCHT (Care Coordination Home Telehealth)
 - Remote monitoring
 - Program of care, not episodic approach
 - Reduces hospitalizations

“Hospital of the Future”

- Care for patients provided remotely
- Care for greater number of patients with chronic disease
- Clinical practice, technology infrastructure and business processes all change
- (r)evolutionary

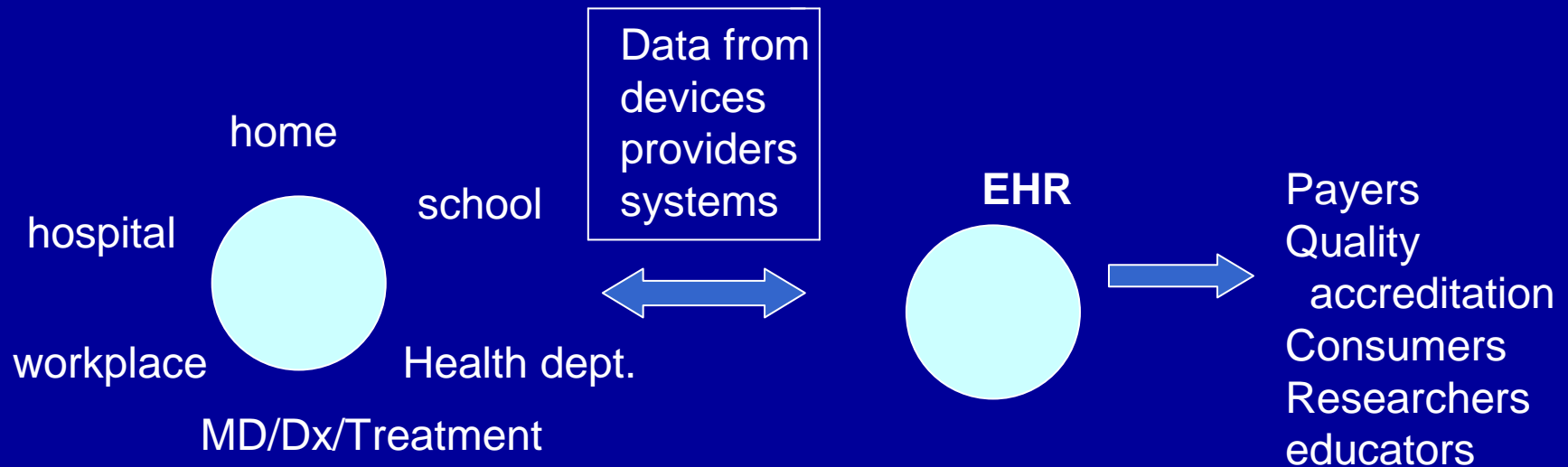
The Future--Now

- Visiting Nursing Service of New York
 - “Patient Care Record Suite” electronic record
 - Retrieve data for current caseload at POC
 - Actionable feedback for quality improvement
 - Payment based on quality outcomes
 - Enables health information exchange with EDs/MD offices

The Future--Now

- Actionable data (quantitative and observation)
 - Preventive care (reminders)
 - Patient monitoring/guide decisions
 - Urgent action
 - Safety monitoring
 - Identify need for education
 - Quality measurement/monitoring

Point of Care Data



Costs
Health outcomes
Illness progression
Waste (cost and personnel)

Nurses provide care *everywhere*
but...

while the technology to support the care
and enhance workflow exists in some
places, it is *not* everywhere.

Nurses Embrace Health Technologies

- Comprehensive enterprise electronic health record system
 - Expectation for CPOE
 - Adoption of interoperability standards
 - Promote electronic exchange of information
 - Incentives to purchase HIT systems

Nurses Embrace Health Technologies

- Greater value for technology that integrates with other technologies
- Must be labor-saving to conserve stretched professional resources
- Evidence supports safety and quality benefits
- ROI still elusive

“Principles to Guide Technology Adoption for the Hospital of the Future”

- Establish the business case and sustainable funding sources to support the widespread adoption of health information technology
- Redesign business and care processes in tandem with health information technology to ensure benefit accrual

“Principles to Guide Technology Adoption for the Hospital of the Future”

(continued)

- Use digital technology to support patient-centered hospital care and extend that care beyond the hospital walls
- Establish reliable authorities to provide technology assessment and investment guidance of hospitals
- Adopt technologies that are labor-saving and integrative across the hospital

Improving Nursing Care Through Technology

- Nurses do not want to be passive consumers of technology.
- Nurses want devices that are integrated, voice activated, handheld, use biometrics, provide translation, are portable, are wireless, auto populate, and are “smart.”
- Greater nurse satisfaction leads to greater patient satisfaction.

Improving Nursing Care Through Technology

- Technologies can create better work environment for inpatient nurses:
 - Improve efficiency, safety and quality
 - Add value to the way nurses coordinate and provide care
 - Alarm/event messaging
 - Biomedical device integration

California HealthCare Foundation, 12/08 www.chcf.org

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Improving Nursing Workflow Through Technology

- Remove nurse from unnecessary chain of tasks (increase efficiency)
- Organize work and incorporate clinical knowledge (evidence) and decision support at the point of care (improve safety and quality)
- Empower patients and others to assume new roles (interactive systems-improve efficiency)
- Route and prioritize messages and requests to enable immediate responses to patients and other caregivers/staff (improved communication increases safety)

Process Transforming Technologies

- Medication administration
 - Pharmacy robots
 - Dispensing verification
- Communication (wireless)
 - Hands free communication
 - Virtual instant conferencing
 - Interactive patient systems
- Timely acquisition of equipment/supplies
 - Identification/Tracking technologies

Process Transforming Technologies

- Wireless monitoring
 - Alarm/event messaging
- Electronic clinical documentation
 - Clinical decision support
 - Device integration
- Patient identification
 - Radio frequency identification
 - Bar code identification

Wireless patient monitoring solutions in hospitals

- Technologies provide for continuous monitoring
- Integrated into bed, mattress pad
 - Weight measurement
 - BP, Heart rate, Respiratory rate
 - Body movement
- Integrates with nurse-call or other system to alert RN

Smart Devices

Translation feature
Turning
Vibration/percussion
Motorized



Improving Design and Adoption of Technology by Nurses

- “Technology Drill Down” (American Academy of Nursing Workforce Commission funded by Robert Wood Johnson Foundation):
 - Created a process for identifying technology solutions to medical/surgical unit workflow inefficiencies.
 - Discovered workflows most affected by technology.
 - Described attributes of technology most user friendly and desired by nurses.

Desired Outcomes of Technology Solutions

- Eliminate other work
 - Documentation
 - Charging
 - Inventory
 - Duplicate communication
- Provide access to resources
 - MD
 - Pharmacist
 - Interpretation
- Accomplish regulatory work
 - Patient identification
 - Documentation
- Efficient use of space

Making Care Safer and More Efficient-the Business Case

SAFER

- Improved safety and delivery system reliability
- Return RN to bedside for additional direct care time
- Implement technology to reduce opportunities for error and improve:
 - Medication administration process
 - Communication among care givers
 - Timely acquisition of equipment/supplies
 - Patient identification

Making Care Safer and More Efficient-the Business Case

EFFICIENT

- Reduce Nursing Demand by
 - Eliminating waste in nursing workflow resulting from:
 - Inefficient work patterns
- Fewer Interruptions
 - Missing supplies/equipment/medications
 - Inaccessible information/documentation
- Reduce physical burden of work to improve retention

The Business Case--Return on Investment

- Elimination of wasted time--more time with patients
- Entering patient information once
- Increased retention
- Decreased errors
- Improving patient and staff satisfaction
- Interoperability
 - Achieve communication integration
 - Achieve work flow process and safety improvements

Summary

- HIT and medical devices can be deployed to improve the care environment.
- Leading edge technologies are available today that improve safety and efficiency.
- Nurses must be included in redesign of workflow, identification of technology solutions, and selection of new devices/technology.
- Technology can return valuable time for direct care to the RN.