

2015 Defense Health Information Technology Symposium

Implementing an Integrated Communication System for the 21st Century



“Medically Ready Force...Ready Medical Force”

DHA Vision



“A joint, integrated, premier system of health, supporting those who serve in the defense of our country.”



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Learning Objectives



- Identify the benefits of an Integrated Communication System (ICS) within a military healthcare organization
- Recognize the potential return on investment that has been obtained within a military healthcare organization by implementing an ICS
- Identify the potential components of an ICS
- Become familiar with the technical and support requirements for an effective ICS
- Understand the guidelines and strategy for implementation of an ICS within a healthcare organization

Agenda



- Organizational Overview
- Why Hands Free Communication?
- Facts, Assumptions & Constraints
- The Hands Free Communication System (HFCS) and its Capabilities
- Integration & Implementation
- Outcomes
- Future of HFCS

Please complete your evaluations

Colorado Springs Military Health System (CSMHS)



Military Treatment Facilities (MTFs):

- **EACH:** Community Hospital
 - Enrollment: 73K
 - Surgical Specialties, Primary Care, ER
 - 28 M/S Beds, 14 MH Beds, **Few IM Specialties (Occupancy Rate of >75%)**
- **USAFA:** Large Clinic, Ambulatory Surgical and Primary Care
 - Enrollment: 28K
- **Peterson:** Medium Clinic, Primary Care Only
 - Enrollment: 27K

- Colorado Springs seen as a “Growth” Market
- All Facilities Near/At Capacity
 - 92% Enrollment from all eligible prime
- Growing at a rate of 1K/year



**Colorado Springs
Military Health System**

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Evans Army Community Hospital



Our Duties

- Deploy a healthy force
- Deploy in support of the force
- Execute an Army Medical Action Plan that returns the Warrior in Transition to the force or successfully transitions the veteran to civilian life
- Manage care of the total Army Family



A Day at EACH

- Eligible Population: > 170,000
- Enrolled Population: > 70,000
- Licensed Beds: 92
- Pharmacy (New and Refill Rx): 2,964
- Outpatient Encounters: 2,626
- Radiological Procedures: 373
- Emergency Room: 150
- Operating Room Cases: 20
- Inpatient Admissions: 19
- Births: 6

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Problem Statements

- There are inherent barriers to communication from staff to staff and patient to staff across the continuum of care mainly due to distance, location, as well as physical layout of each department
- For the last three years, The Joint Commission has identified communication as one of the top 3 root causes of sentinel events



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Project Objectives



- Identify a tool to mitigate the effects of the communication barriers identified
- Facilitate horizontal and vertical direct communication throughout the facility
- Improve communication
- Improve quality of patient care, safety, and patient and staff satisfaction.



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Integrated Communication System



- Provides voice driven Integrated Communication System (ICS) at critical hospital speed, driving better outcomes and experience for the patient and the caregiver
- ICS has the capability to deliver critical text messages and alerts to highly mobile care teams, ensuring a safe, positive experience for the patient
- It improves the caregiver/patient experience by reducing response time and increasing time at the bedside. This increased opportunity to communicate reestablishes the human connection in healthcare delivery
- Empowers mobile workers by instantly connecting them to the people and information they need

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- The Army Medical Command requires a system that facilitates safe, effective, timely communication to enhance patient care delivery (National Patient Safety Goal #2, The Joint Commission Standard PC 02.01.21 and PC 02.02.01)
- June 2012 ICS was implemented in the Emergency Department at EACH as a solution for inefficiencies in workflow and physical layout of workspace constraints
 - ❑ Improvement in patient satisfaction
 - ❑ Improvement in staff satisfaction
 - ❑ Decreased the number of patients that left without being seen (50%)
- June 2013 ICS was implemented on the Family Care Ward
 - ❑ Improved staff communication
 - ❑ Improved workflow and utilization of the nursing staff
 - ❑ Improved nurse patient contact time (75% faster response time – 4 mins to less than 1 minute to answer patient call)
 - ❑ Increased inpatient satisfaction (20%)
 - ❑ Decreased patient falls (68%)

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Assumptions



- MTFs will have the infrastructure to support an Integrated Communication Solution
 - Wireless infrastructure
 - Voice over IP capability
 - IP addresses
 - IMD/IT/HID staffing for Project management and Functional administrator
- ICS will be issued to the clinical areas that have been identified as adapters that will benefit from the technology
- Users of ICS will integrate communication with all current technologies to leverage and maximize capabilities using middleware if necessary
 - Nurse call, queuing, HIE, security, Code teams, infant abduction solutions, etc.
- MTF will adopt a Functional vs. System Administrator approach

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Constraints



- Requires Organizational support and must be consistent with Strategic Goals
 - Key Stakeholders must support, facilitate, and adopt timely implementation of the ICS
- Regional Commands don't have BCAs and assessments to standardize readiness for acquisition and implementation
- Initial acquisition cost, ROI is proven but upfront cost
 - ROI depends on user acceptance and usage of the system
- Integration and Implementation requires manpower commitments

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Voice Features and Capability

Features

- Staff Assignment
- Messaging Interface
- SIP Telephony
- Administration Suite
 - Report Server
 - Scheduled Reporting
 - Device Management
- Integrates with Nurse Call (two way)
- Integrates with Queuing technology
- Call flow design, all calls are answered.
- Integration to alarm and alert systems to expedite communication of critical data

Unique Calling Capability

- Hands Free
- Role-Based
- Activity-Based
- Group Calls
- Broadcasting to many
- Call by name



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Expected Benefits



Benefit	Potential Cost Savings or Earnings
Decreased patient falls	Every missed fall saves on average \$4,200.00. ¹ (Expected reduction for EACH of 21 falls/year for a total of over \$94,000/year)
Increased OR capacity	ICS can create an additional 350 hours of OR time and resulting revenue generation. ²
Increased OR efficiency	Savings of 2.7% of time required on individual case. Improved productivity of 9%. ²
Patient Satisfaction	15% improvement over the first 180 days with an expected end result of staying above 70% patient satisfaction within inpatient services resulting in expected returns of over \$150,000/quarter (over \$600,000 per year)
Streamline and Simplification of Communication	Reduced unnecessary steps and eliminate “phone tag” and Optimization of one on one provider-patient contact, and interdisciplinary healthcare team. ³
Safety	Patient can immediately make contact with nurse. Nurse or provider can escalate to required personnel as situation dictates.
Staff Satisfaction	Increased staff satisfaction, increase quality of care and patient safety, and time savings for staff.
Inpatient Satisfaction	TRICARE Inpatient Satisfaction Survey (TRISS) Question # 21, which measures the overall rating of the hospital.

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Integration

Platform integration to multiple systems delivering critical alerts and communication capabilities to the right user, at the right time and place

- Integration with Nurse Call system
 - Patient to staff and staff to patient communication
 - Pain Button Integration



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Implementation Timeline



Hands Free Communication System at Evans Army Community Hospital

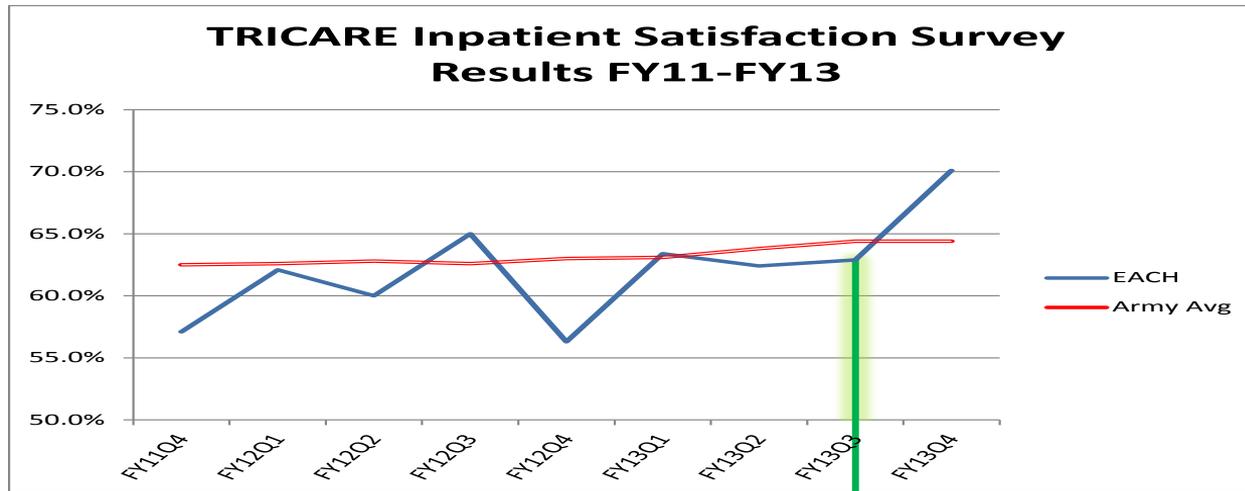
- March 2012 – ED (stand alone)
- June 2013 – Family Care Ward (integrated with nurse call)
- December 2013 – Mother & Baby, L&D, OR, PACU, Same Day Surgery, Pharmacy, Lab, Patient Administration, Nutrition Care Division, and Pediatrics (PCMH Pilot)
- March 2015–PCMH Expansion and Specialty Clinic Completion
- June 2015 - Maternal Floor Integration Complete
- Winter 2016 – Expected expansion to other sites (Air Force)

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Inpatient Satisfaction Increase

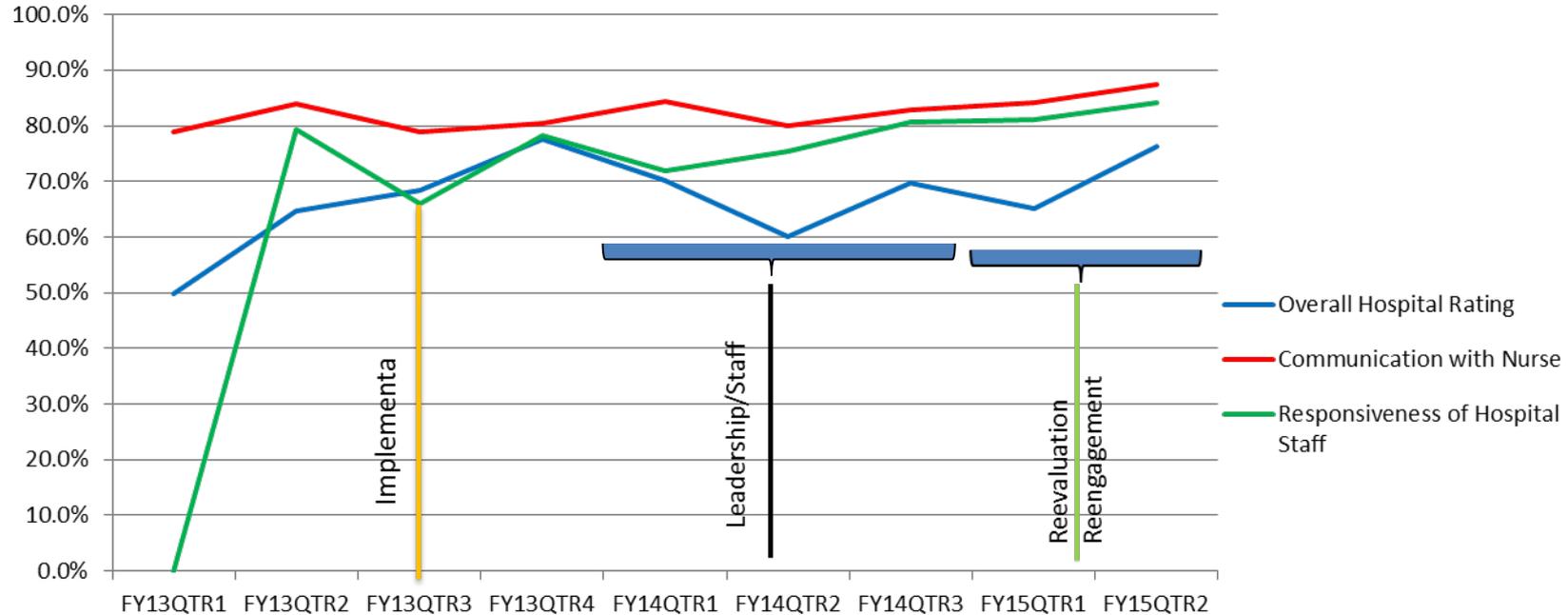


20% improvement in inpatient satisfaction over 10 months with the HFCS implemented resulting in expected returns of over \$150,000/quarter (result of pay for performance model)



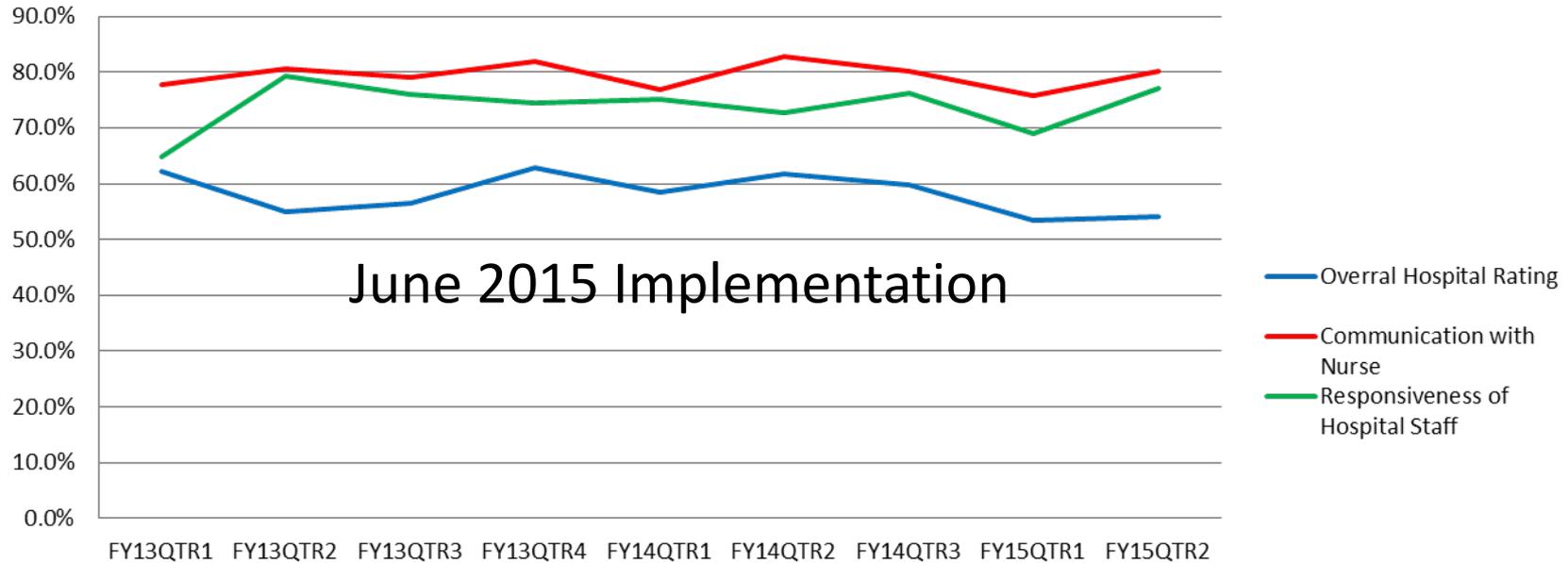
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Inpatient Satisfaction Medical Floor



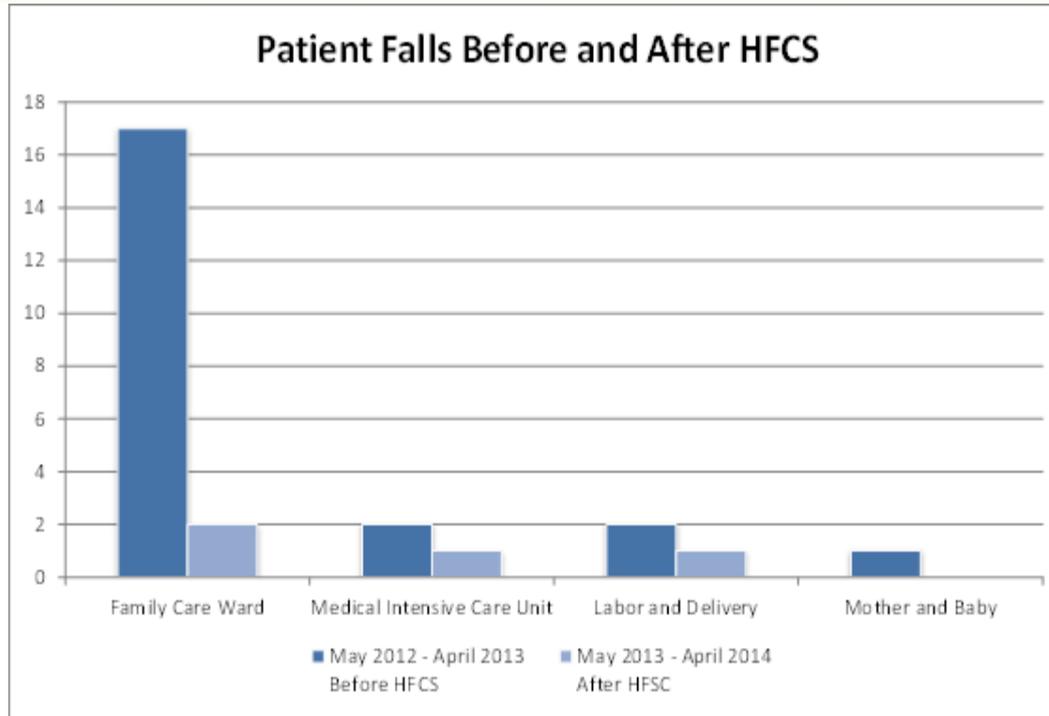
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Inpatient Satisfaction Obstetrics/Maternal



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Patient Falls Reduction



- 88% reduction in patient falls within 10 months after implementation
- Hospital wide implementation, yearly potential cost avoidance of over \$94,000 ¹

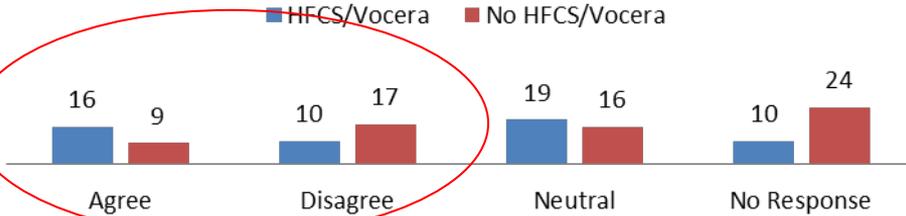
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Staff Satisfaction Survey

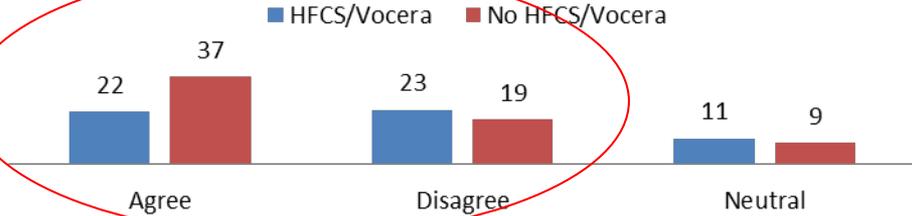
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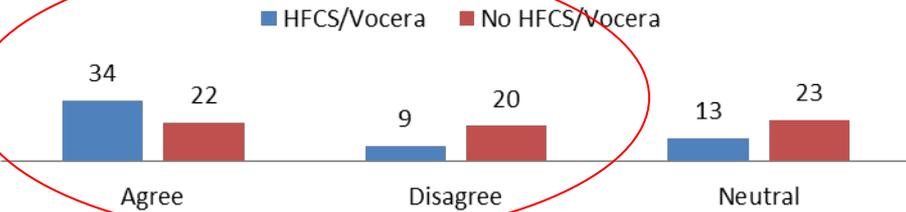
Are you satisfied with current communication method



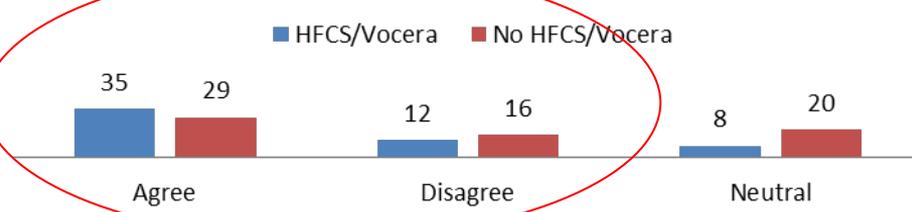
I spend a lot of time walking around looking for staff



Able to contact staff in a timely manner



Able to communicate effectively with staff on my unit



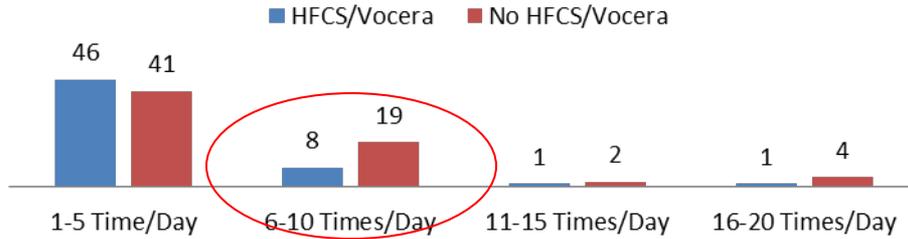
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Staff Satisfaction Survey

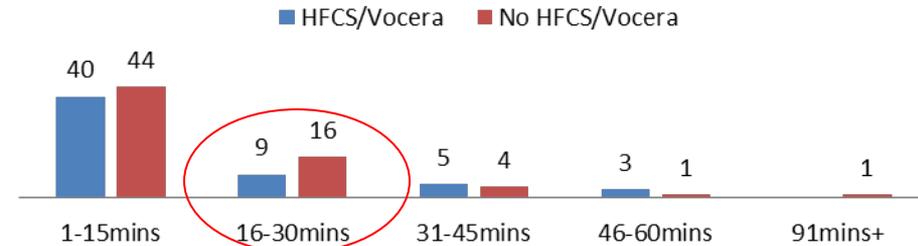
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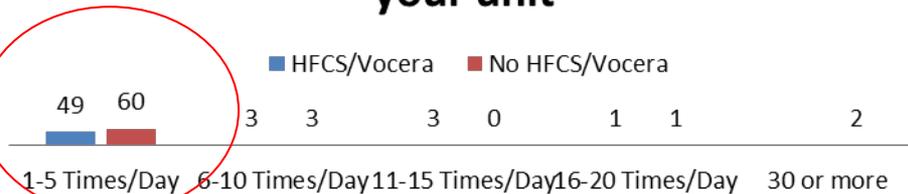
How many times per day you go looking for staff within the unit



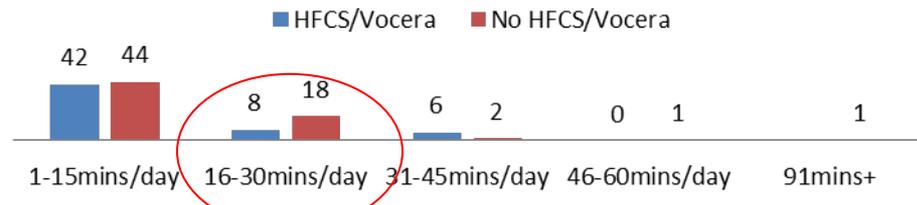
How much time do you spend per day looking for staff within the unit



How many times do you spend per day looking for people outside of your unit



How much time per day do you spend looking for people outside of...



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Additional Outcomes of ICS



- At the end of one year, the system was used by 17 departments on a weekly basis to make 2000 staff-to-staff calls and 800 patient-to-nurse calls handled by 667 staff users
- Increase Nurse Patient Contact time
 - Decreased nurse response time from an average of four minutes to less than one minute within Inpatient areas.
- Decrease in ambient noise with group calling thru the system (ie. Dr. Strong/PMDB group)
- Improved staff communication
- Increase efficiencies in OR turnover and OR equipment & instrument delivery accuracy
- Improved workflow and utilization within PCMH environment
 - Reported gains in time by nursing personnel in the PCMH clinics of 1.5 hours/day
 - Reported gains in time by Primary Care Provider in the PCMH clinics of 40 minutes/day

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Future Enhancements



- Queuing Integration
 - Decrease wait times
 - Improvement in patient flow within the clinics
- Results Delivery Integration
 - Improvement in provider/patient awareness
 - Workload recapture potential
- Dictation Integration
 - Uses provider time efficiently
 - Immediate Dictation Capabilities from any location

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Recommendation



- Continue to use ICS as communication solution at MTFs increasing patient safety, quality of patient care, safety, and patient and staff satisfaction
- Develop a standardized readiness assessment for MTFs by Department using Leadership buy-in and infrastructure as a determination if a location is ready for ICS
- Create Matrixes to show where ICS improves efficiency as well as safety that demonstrates ROI for tracking and to determine expansion
 - ❑ OR turnover times pre and post
 - ❑ Wait times for beds for transfer (housekeeping) pre and post
 - ❑ Inpatient Falls
 - ❑ Response time for Code teams
 - ❑ Time to call answer nurse call
 - ❑ Staff satisfaction
 - ❑ Usage reports

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Summary

Why an integrated Hands Free Communication System?

- Reduced sentinel events due to communication
- Dramatically improved communication efficiencies & patient throughput – 2 new appointments per provider/day
- Improved patient experience and patient satisfaction - \$150K per quarter
- Improved care team collaboration and communication
- Improve patient outcomes - 88% reduction in falls (\$94K per year)
- Augment patient safety: monitoring/alarm
- Create quiet healing environment
- Reduce readmissions/lengths of stay
- Increase staff safety & satisfaction
- Streamline operations



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References



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3. Richardson, J. E., Shah-Hosseini, S., Fiadjoe, J. E., Ash, J. S., & Rehman, M. A. (2011, January). The effects of a hands-free communication device system in a surgical suite. *Journal of the American Medical Informatics Association*, 18(1), 70-72. doi:10.1136/jamia.2009.001461
4. University of Arkansas for Medical Sciences (UAMS) Uses Vocera for Fall Prevention and Other Key Processes (2012). Retrieved from [Uses of Vocera for Fall Prevention Article](#).
5. Vocera Hands-Free Communication Improves Satisfaction for Patients, Nurses, and Physicians at DMC Huron Valley-Sinai Hospital (2013). Retrieved from [Hands Free Communication Satisfaction Improvement at DMC Huron Article](#) on 19 November 2013.

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Questions?



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