

**SINI 2009** Informatics at the Point of Care:  
Summer Institute in Nursing Informatics A Barrier or a Bridge?

## Using Voice technology at point of care: Bridging the Gap for Nurses

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## Agenda


- Voice-Assisted Care (AccuNurse®)
- Butler Memorial Hospital's Experience with Voice
- Nursing IT Pilot & Beta Test
- Outcomes
- Next Steps

## Voice-assisted care

Wireless, hands-free and  
"eyes-free" care system

Simply by talking, you can:

- Document
- Communicate
- Manage Tasks



### Wearable Unit

Wireless Device  
Memory Chip Storage  
Automatic Update to EHR  
Shared Use  
Requires Charging  
Durable



Headset

- Voice-activated
- Individual Use Only

### Control Buttons

1. Start Voice Dialog (PLAY)
2. Stop Voice Dialog (STOP)
3. Record – Menu

Manipulated Through Clothing



## Voice Technology

- Developed by Pittsburgh-based Company: Vocollect, Inc.
- 20 Years of Successful Deployments
- Warehouse -to Nursing Home – to Acute Care Hospitals
- Solution Comprises:
  - Wearable Computer and Headset
  - Speech Recognition Engine
  - Software Application



## AccuNurse

Charge Nurse enters residents' care plans into AccuNurse intranet site. AccuNurse converts care plans into easy-to-follow voice messages.

Care staff wear light-weight headsets and communication devices. Throughout the shift, they access the latest care plan and use verbal cues for documentation.

AccuNurse converts responses into text and the information is updated in the AccuNurse database.

As care is completed, care staff "tell" AccuNurse so documentation is completed at the point-of-care.

Nurses can view completed tasks and reports in real-time.

## Document Vitals

175 is 16... Document Vitals

## AccuNurse in Action

Staff multi-tasks while recording activities

What is the... database?

Database

DIET	Bk	L	G	F	G	F	G	F	G	F
E-100N										
G-100N	L	F	F	F	G	G	S	E		
F-100N	D	F	G	G	F	E	G	G		
P-25N/0-100N										

## Butler Memorial Hospital

- 302 Beds
- Located 45 Minutes From Pittsburgh
- 1,700 Employees
- One of the Top 100 Hospitals in Nation for Cardiovascular Care
- In 2008, Awarded Top 100 Best Places to Work in PA

## Butler Memorial Hospital

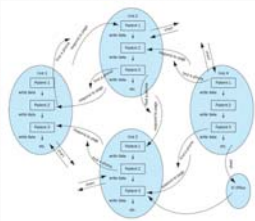
- Started with a vision, an idea
- Director of Emerging Technology & Director of Vocollect New Venture
- VP of Quality
- Outcome -IV Nurse process improvement

## IV Team

- 18 Nurses
- Supports All Units Including PACU
- Using Meditech Documentation System

## IV Team Challenges

- Increased Number of IVs Per Shift
- Pages Often Incomplete/Missing Information
- Inconsistent Outcomes in Changing IVs On Time
- Process Improvement Needed for Transferring Tasks Between Shifts



## University Of Maryland School of Nursing (beta test)

- Beta testing
- Student nurses
- Challenge system
- Outline educational needs
  - Educational manuals
  - Time lines
  - FAQ



## Purpose of Pilot (Pilot Test)

- Validate Voice Technology in IV Application
- Validate New Workflow
- Assess Ease of Use
- Evaluate Improvement Over Current Processes
- Gauge Staff and Patient Reactions
- Identify Additional Functionalities Needed
- Measure Results To Determine Purchase Decision



## Nursing IT Pilot Project

- Three-week Project
- Six IV Nurses, One Per Shift
- Nursing Manager Lead, Senior Executive Sponsor, IT Dept
- Data Entry for All Patients
  - Routine IV insertions
  - Dressing changes
- Verification of Captured Data at End of Every Shift



## What Does Voice Enable?



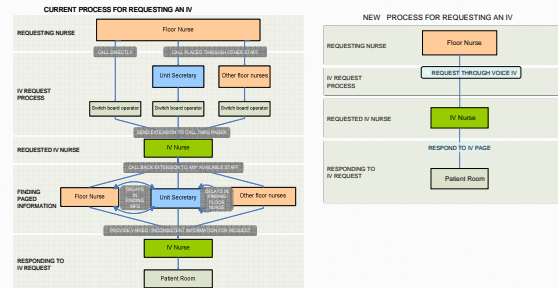
- Charting
- Reminders
- Prioritized Tasks
- Receiving Pages
- Integration

## Outcomes

- 75% Reduction in Documentation Time
- Little Difference In % Complete Documentation
- Eliminated Pre-shift Task Lists
- Improved Point of Care Documenting at Bedside
- Improved Communication Via Pages by 60 to 70% (No missing info., e.g. purpose, time needed, gauge size, etc.)
- Reduced Potential for Infection by Reducing Contact with Multiple Devices
  - 1 device touched once per task vs. 4 devices touched 3.3 times per task
- Process to Request IV Streamlined



## Streamlined Processes



## Benefits for IV Nurses



- Allows Nurses to Work “Hands-free, Eyes-free”
- No Need to Carry Pagers or Paper Charts or Look for Computers or Kiosks
- Allowed Nurses to Spend More Time With Patients at Bed-side
- Organized List of Daily Routine Tasks
- No Need to Find Phone To Respond To Pages
- AccuNurse Automatically Prioritizes pages

# HealthData Management

April 2009

## THE 2009 NURSING I.T. INNOVATION AWARDS

Nurses replace clipboards with headsets to document their work

## Barriers to Adoption

- Organizational
  - Adapting to New Technology
  - Need To Wear Lightweight Headset
  - Getting Technical Infrastructure In Place
- Cultural
  - Change in Tradition, New Process
  - Culture Change For Multiple Clinicians
  - Need For Adequate Training



## Challenges During Pilot

- **Complaints** – Not Having Ability To Document Certain Events Due To Limited Pilot Scope
- **Delayed Pages** – Lack of Wireless Coverage
- **Adjustment** – Relying on Verbal Info Without Seeing Written Document
- **Loss of Words** – Not Knowing What To Say To the Device
- **QA** – Double Documentation During Pilot



## Integration

- Need to understand what you want to accomplish
- Most systems have ADT feeds – not a problem
- AccuNurse can accept feed from most system
- HL7 interfaces needed by EMR systems
- Boston Workstation – Simulates a end-user

**Strongly support nurses not having to double document**

## Lessons Learned

- Have Buy-in With Executive Sponsor and Stakeholders
- Validate Current Process Workflows
- Communicate, Identify What the System Will and Will Not Do
- Identify Project Lead and Power Users (Champions) Early
- Define Agreed-upon Goals and Outcome Measures Early

## Next Steps: Future Plans

Full Rollout Underway In 2009:

- Entire Hospital Being Wireless-enabled
- Full Meditech Integration Path Identified

## Potential Impact on Quality & Patient Satisfaction (HCAHPS)

HOSPITAL CONSUMER ASSESSMENT OF HEALTHCARE PROVIDER AND SYSTEMS

- With improved communication and reminders, voice-assisted care can help:
  - Respond to patient calls faster
  - Reduce noise by eliminating overhead paging
  - Stop preventive antibiotics 24 hrs after surgery
  - Ensure provision of beta blockers at discharge
  - Guarantee assessment and administration of Pneumococcal Vaccinations at admission
- If so, what does this mean in the big picture?

## Potential Impact on Reimbursements (HACs)?

- Using checklists and reminders at the point of care, can voice-assisted care help reduce:
  - Stage 3-4 Ulcers
  - Falls/trauma
  - Catheter-associated UTI infections
  - Glycemic conditions
- If so, what does this mean in the big picture?

## Advantages/Benefits



### Improve Patient Care & Satisfaction

- ✓ Reduced documentation
- ✓ Proactive reminders
- ✓ Real time visibility of documentation

### Increase Job Satisfaction

- ✓ Reducing time staff spends on documentation and locating colleagues
- ✓ Decreasing the #of personal items carried by staff

### Enhance Quality & Regulatory Compliance

- ✓ Improving adherence
- ✓ Maintains a trail of finger prints

## Potential Applications of Voice

- Nursing Aides
- Wound Care Nurses
- Diabetes Nurses
- Respiratory Therapists
- Physical Therapists
- Phlebotomists

# Questions

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<http://healthcare.vocollect.com/acute>

