Facilitating Clinical Collaboration

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Global Healthcare Solutions Marketing
Agenda

- Cisco Connected Health Vision
- Clinical Collaboration Architecture
- Cisco Unified Application Environment
- Integration with Medical Devices
- Benefits
- Questions & Actions
## Connected Health Solution Framework

**Business Drivers**
- Patient Safety, Quality of Care, Patient Satisfaction, Cost Effectiveness, Staff Satisfaction, Regulatory Compliance

<table>
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<tr>
<th>Medical Grade Network</th>
<th>Connected Imaging</th>
<th>Clinical Collaboration</th>
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<td>▪ PCI for Healthcare</td>
<td>▪ Medical Image Architecture</td>
<td>▪ Nurse Connect</td>
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<td>▪ Secure Wireless</td>
<td>▪ Collaboration &amp; Reporting</td>
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<td>▪ HMI Collaboration</td>
<td>▪ Context Aware Services</td>
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**Business Solutions**
- PCI for Healthcare
- Secure Wireless
- BioMed NAC
- Medical Image Architecture
- Collaboration & Reporting
- HMI Collaboration
- Nurse Connect
- Mobile Care CUAE
- Context Aware Services
- Video Collaboration Solutions

**Network Technologies**
- Mobility
- Security
- Routing and Switching
- Data Center
- Unified Comms

**Medical-Grade Network Architecture**
Cisco’s Clinical Collaboration Portfolio for Healthcare
“Optimizing Productivity and Effectiveness for Clinicians”

- Provide alarm and alert notification out to mobile clinicians and caregivers via their wireless phones.
- Enable more efficient collaboration and patient care through automated sending of lab results to mobile phones.
- Coordinate sending alarms and alerts to the people who are in closest proximity to deliver the care or task required.
- Enable video communication for caregivers to provide language interpretation services, education, poison control help, and psychiatric services remotely.
- Provide real-time information on assets and patients through context-aware services.
Nurses Could Regain Valuable Time Each Shift

- Communication inefficiencies impact staff productivity and patient care
- Nursing supervisors and hospital administrators surveyed say nurses:
  - **65%** Spend 20-60+ minutes a day, just trying to reach staff
  - **80%** Would save 15-60 min / day if they could reach physicians on the first try
  - **57%** Say message retrieval and attempted call backs take more than 30 min / day
- Physicians face similar issues

Source: Forrester Research, February 2006
Impact on Quality of Care

Up to 70% of sentinel events in healthcare are caused by poor communications, according to a Joint Commission study 1995–2006.

- Sentinel events are unexpected occurrences involving death or serious injury.
- Top sentinel events include wrong-site surgery, medication errors, delay in treatment.

Statistics on Root Causes of Sentinel Events

**Source: the Joint Commission**
Nurses Could Spend More Time on Patient Care

Nursing time spent, by care category

- Nursing Practice (417 min) - 78%
- Unit Related Functions (15 min) - 3%
- Non-clinical (68 min) - 13%
- Waste (36 min) - 7%

Nursing practice time spent, by sub-category

- Documentation (148 min) - 35%
- Medication Administration (72 min) - 17%
- Patient Care Activities (81 min) - 19%
- Assessment/Values (31 min) - 7%
- Care Coordination (86 min) - 21%

Source: The Permanente Journal/ Summer 2008
Based on a 36-hospital time and motion study
Cisco Clinical Collaboration
Creating a Collaborative Hospital

- Nurse Call
- EMR/HL7
- Patient Monitoring
- Building Alarms

Medical Grade Network

Alert Notification Middleware

Mobile Care CUAE
Cisco as the Platform

Nurse Call Vendors

Comm Plug In

Cisco CallManager

Access Point

CUAE MCS 7835

Medical Device Vendors

HW 7

SMS

Presence

DMS & Video

Context-Aware Services

Cisco Confidential
Example: Increase patient safety by integrating telemetry monitoring systems to wireless phones

1. Abnormal rhythm on patient monitor

2. Waveform and alert forwarded to nurse’s wireless phone (secondary alert)

3. Nurse receives notification and reviews data

4. Patient receives timely care

Business Value

- Increase patient safety – provide more timely care
- Enhance nursing staff productivity
- Improve patient satisfaction & experience – faster response
Waveform on 7921
Nurse Connect Components

- Responder IV System
- RS-232 to IP adapter
- CUAE
- New or Existing CUCM 6.1 Cluster
- Cisco WLAN Controller
- Cisco Access Points
- Cisco 7961G, 7962G, 7965G, 794xG, 797xG, 7985G IP Phone
- Cisco 7921G Wireless IP Phone
- Cisco 7925G

Rauland Borg Nurse Call System

Beacon Alert Manager for Cisco Nurse Connect

Cisco components: CUAE, CUCM, WLAN Controllers, Access Points and Wireless IP Phones

Nurse Connect
Cisco Nurse Connect in Action
—Quick Response

Facilitates collaboration among mobile caregivers and patients, enabling them to reach each other and to be reached no matter where they are — for faster patient care from any location.

Patient presses call button

Nurse identifies type of alert based on the message

Nurse calls back
Cisco Nurse Connect in Action
—Reassignment of Service Requests

Nurse is able to re-route request to aide and continue performing skilled nursing work for most efficient use of personnel resources.

- Patient presses call button
- Dome light changes color to indicate request status
- Aide calls patient on pillow speaker and delivers requested items
- Nurse re-routes request to aide
Clinical Collaboration with Cisco - Benefits

- Option to traditional 3rd party component (HW & SW)
- Control adverse effects of revision changes
  - Eliminate constant validation and solution regression testing
- Increased savings: initial cost, maintenance and troubleshooting
- Direct relationships with Medical Device Manufacturers and HIS vendors
- Cisco Unified Application Environment is an open development platform for all Unified Communications: Context Aware Services (RFID), Paging, Presence, Instant Messaging, Video, Digital Media Signage, Speech Recognition, Text to Speech, Voicemail, and Faxing
Clinical Collaboration with Cisco - Benefits

- Development can be performed by Hospital IT staff, Cisco Services, Cisco Partners or Medical Device or Application Vendors

- 3 day training classes offered on regular basis
Cisco 7925G IP Phone for Healthcare
The Cisco Unified Wireless IP Phone 7925G facilitates mobile clinical collaboration.

The Cisco Unified Wireless IP Phone 7925G allows easy access to productivity applications:

- Nurse call alarms
- Integrated alerts and notifications for laboratory information systems
- Text messaging
- Location-based alarms using integrated radio-frequency identification capabilities
- Cisco Unified Presence to simplify colleague contact
- Facility alarms
- Code team notifications
- Emergency bulletins
- Integration to multiple healthcare applications where messaging to mobile devices aids in patient care process
Receive information regarding Assets, Conditions and People Using Cisco Unified Wireless IP Phones 7925G

- **Cisco Context-Aware Services**
  - Tracks caregivers, patients, equipment, and more providing alerts to the phone when needed
  - Receive alerts on Condition monitoring to the phones (temp monitoring)
  - Connect to solutions that use speech recognition for hands-free and PC-free information access
Integrate Clinical Services

- Nurse call voice and text alerts to clinicians allow faster response times and higher productivity
- Reduces or eliminates overhead paging
- Laboratory information systems send notifications to phones
- Cisco Mobile Care facilitates collaboration among mobile caregivers
Designed With Healthcare In Mind

- Wireless 802.11 a/b/g phone
- Compact handset with features that benefit healthcare users
  - Improved durability
  - Longer charge time
  - Hands-free operation
  - Flat screen reduces glare
  - Latex free
  - RoHS compliant
Mobile Communication Saves Steps

- Cisco Unified Wireless IP Phone 7925G eliminates noisy, one-way overhead pages
- Caregivers only need to carry a single device
- Colleagues can easily reach mobile personnel
With Features for Busy, Mobile Caregivers

- 20% thinner
- Flat screen
- Removed external antenna
- Improved latch
- Rubber band
- Oval keypad
- Charging contacts
- Mini-USB connector and protection flap
Durable

- Rugged phone
  - Higher drop specifications
- Designed to meet the military’s toughest standards
  - Resistant to shock
- Protective case helps durability
Enclosure Protection for Healthcare Environments

- Hermetically sealed
  Provides protection against dust and liquid splashes frequently found in hospitals and healthcare environments
  Resistant to sanitizing wipes and chemicals for easier cleaning and improved protection against biohazards and spreading of nosocomial infections

- IP54 rated
  Dust protected
  Splash protected

**Dust Test:** Unit subjected to talcum dust for 8 hrs. Unit fully functional after the test.

**Shower Test:** Unit subjected to continuous water flow for 10 min. Unit fully functional after the test.
IP Code Defined in Int’l Standard IEC 60529

- First digit indicates level of protection that the enclosure provides against access to hazardous parts and the ingress of solid foreign objects
- Second digit indicates level of protection of the equipment inside the enclosure against harmful ingress of water

<table>
<thead>
<tr>
<th>Level</th>
<th>Object size protected against</th>
<th>Effective against</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-</td>
<td>No protection against contact and ingress of objects</td>
</tr>
<tr>
<td>1</td>
<td>&gt;40 mm</td>
<td>Any large surface of the body, such as the back of a hand, but no protection against deliberate contact with a body part</td>
</tr>
<tr>
<td>2</td>
<td>&gt;12.5 mm</td>
<td>Fingers or similar objects</td>
</tr>
<tr>
<td>3</td>
<td>&gt;2.5 mm</td>
<td>Tools, thick wires, etc.</td>
</tr>
<tr>
<td>4</td>
<td>&gt;1 mm</td>
<td>Most wires, screws, etc.</td>
</tr>
<tr>
<td>5</td>
<td>Dust protected</td>
<td>Ingress of dust is not entirely prevented, but it must not enter in sufficient qty to interfere with the satisfactory operation of the equipment; Complete protection against contact</td>
</tr>
<tr>
<td>6</td>
<td>Dust tight</td>
<td>No ingress of dust; Complete protection against contact</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Level</th>
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<th>Details</th>
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<tbody>
<tr>
<td>0</td>
<td>Not protected</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>Dripping water</td>
<td>Dripping water (vertically falling drops) shall have no harmful effect</td>
</tr>
<tr>
<td>2</td>
<td>Dripping water when tilted up to 15%</td>
<td>Vertically dripping water shall have no harmful effect when the enclosure is tilted at an angle up to 15% from its normal position</td>
</tr>
<tr>
<td>3</td>
<td>Spraying water</td>
<td>Water falling as a spray at any angle up to 60% from the vertical shall have no harmful effect</td>
</tr>
<tr>
<td>4</td>
<td>Splashing water</td>
<td>Water splashing against the enclosure from any direction shall have no harmful effect</td>
</tr>
<tr>
<td>5</td>
<td>Water jets</td>
<td>Water projected by a nozzle against enclosure from any direction shall have no harmful effects</td>
</tr>
<tr>
<td>6</td>
<td>Powerful water jets</td>
<td>Water projected in powerful jets against enclosure from any direction shall have no harmful effects</td>
</tr>
<tr>
<td>7</td>
<td>Immersion up to 1 m</td>
<td>Ingress of water in harmful qty shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time (up to 1 m of submersion)</td>
</tr>
<tr>
<td>8</td>
<td>Immersion beyond 1 m</td>
<td>The equipment is suitable for continuous immersion in water under conditions which shall be specified by manufacturer</td>
</tr>
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Hands-free Operation

- Bluetooth 2.0 and WLAN capabilities
- 2.5 mm wired headset jack

Headset partners:

- Plantronics® (www.plantronics.com)
- GN Netcom® (www.jabra.com)
- Aliph® (www.jawbone.com)
- VXI® (www.vxicorp.com)

- Speaker phone and push-to-talk feature
Long Battery Life

- Standard battery
  - Up to 180 hours standby
  - OR up to 9.5 hours talk time

- Extended battery
  - Up to 240 hours standby
  - OR up to 13 hours talk time
Secure Communications

- Voice certificates
- Sequenced routing update protocol (SRTP)
- Transparent LAN services (TLS)
- Range of authentication methods:
  - Image
  - Device
  - File
  - Signaling
- Wireless authentication and encryption to meet HIPAA requirements
Third Party Accessories

- Desktop charger from zCover (www.zcover.com)
  Charges phone and spare battery
  Can accommodate phone fitted with zCover case

- Multi-Charger for battery only from zCover
  Charges 9 batteries
  Desk mount or wall mount options

- Carry cases from zCover and System Wear (www.systemwear.com)
Works With Systems and Personnel

- Cisco Unified Wireless IP Phone 7925G uses innovative technology to unite:
  - Patients
  - Caregivers
  - Clinicians
  - Administrators
  - Medical devices
  - Healthcare systems and applications

- This allows hospitals to achieve their goals and to realize tangible benefits
Thank you

Questions and Actions