THE HEALTHCARE IT TIPPING POINT

February 27, 2012
Study Intent and Purpose

Doctors and nurses trust and rely on information systems and applications (healthcare IT) to deliver patient care.

As Healthcare IT professionals look to deliver new tools, they must carefully balance investment in the endpoint system and the IT infrastructure that speeds simple, reliable systems to caregivers.

How are healthcare organizations managing the balance between endpoint and infrastructure?

To better understand that balance, CDW Healthcare asked 202 caregivers and 200 healthcare IT professionals at hospitals with 200 beds or more about the impact of new systems.
EXECUTIVE SUMMARY

During the last 18 months, hospitals with 200 beds or more have deployed a large number of new, complex healthcare IT systems:

- 56% have deployed an electronic health record (EHR)
- 48% have deployed computerized physician order entry (CPOE)

Healthcare IT professionals are doing an outstanding job. Most doctors and nurses say that patient care is better with healthcare IT:

- 84% view healthcare IT as invaluable or valuable
- 71% believe that they could accomplish just half or less of their job responsibilities without the aid of IT systems

To best equip caregivers with new systems, healthcare IT professionals need to carefully balance investment between endpoint solutions and the infrastructure that speeds simple, reliable systems to users:

- Caregivers view new solutions as more useful in patient care (43%) and more able to deliver the information that they need (34%)
- 41% of caregivers also rate new solutions as slower (20%) and harder to use (21%)
If you eliminated all healthcare IT from your work environment, what percentage of your work would you be able to complete at the same level of quality and within a reasonable timeframe?

84% of caregivers find that healthcare IT significantly aids in the delivery of patient care:

50% Invaluable:
IT delivers capabilities that could not be replaced by non-IT tools

34% Valuable:
IT significantly aids in the delivery of care

Sample: 101 physicians; 101 nurses
THE HEALTHCARE IT TIPPING POINT

Healthcare IT systems must equip caregivers to deliver better patient outcomes. Successful implementation requires a careful balance between endpoint solutions and the computing, network and storage infrastructure needed to speed simple, reliable systems to caregivers.

Defined: The Healthcare IT Tipping Point

The point at which an additional $1 of investment in an endpoint solution reduces rather than enhances the caregiver experience.

Endpoint: IT used by caregivers

Infrastructure: IT that provides the storage, computing and network capacity to support activity at the Endpoint
ENDPOINT – STATE OF INVESTMENT

Healthcare IT Systems in Use

- Electronic health record
- Computerized physician order entry
- Barcoding (MedID, PPID, etc.)
- Patient/visitor network access
- Point of care
- Voice over IP
- Picture archiving and communications system
- Video conferencing/collaboration
- Health information exchange
- Patient kiosks
- Telemedicine
- RFID tracking

Sample: 200 Healthcare IT Professionals

0%   10%   20%   30%   40%   50%   60%   70%   80%   90%   100%

Total Healthcare IT Systems Currently Employed
Healthcare IT Systems Employed in Last 18 Months
What new healthcare IT infrastructure initiatives has your organization implemented in the last 18 months?*

- Server virtualization: 70%
- Network expansion: 56%
- Data center consolidation: 42%
- Business continuity/disaster recovery: 40%
- Long-term storage initiative: 35%
- Short- or medium-term storage initiative: 24%
- Client virtualization: 23%
- Power and cooling management: 22%
- Unified communications: 20%
- Network consolidation: 8%
- None of the above: 6%
- Other: 1%

Most of the backbone initiatives over the last 18 months have focused on efficiency and consolidation rather than infrastructure expansion.

*Respondents asked to select all that apply

Sample: 200 Healthcare IT Professionals
### What Systems in Balance Look Like

What parts of your care giving responsibilities work better with IT?

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Benefit Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>85%</td>
<td>The availability of more important information</td>
</tr>
<tr>
<td>72%</td>
<td>Accuracy of care delivered to patients</td>
</tr>
<tr>
<td>68%</td>
<td>Ability to track follow up care (e.g., follow up appointments)</td>
</tr>
<tr>
<td>57%</td>
<td>Speed of care delivery to patients</td>
</tr>
<tr>
<td>38%</td>
<td>More time available to spend with patients</td>
</tr>
</tbody>
</table>

- "Healthcare IT helps us to avoid unnecessary tests and procedures"
- "Enables better communication with other healthcare providers"
- "Delivers better patient access to providers"
Maintaining the balance between endpoint and infrastructure investment is no easy task. Based upon IT professional responses, some areas may be more at risk than others.

**Storage Infrastructure**
- 56% Deployed an EHR in the last 18 months
- Of those, 4% have added no additional storage capacity

**IT Security Infrastructure**
- 56% Deployed an EHR in the last 18 months
- Of those, 11% have added no additional IT security

**Network Infrastructure**
- 24% Added patient/visitor access to the network in the last 18 months
- Of those, 10% have added no network capacity
Beyond the tipping point, the addition of new endpoint solutions without adequate IT infrastructure makes the caregiver experience worse, not better.

**Caregivers experience fewer benefits in systems out of balance**

<table>
<thead>
<tr>
<th>Relative to older systems, systems implemented in the last 18 months are:</th>
<th>1-3 New Systems</th>
<th>4-6 New Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>More useful in patient care</td>
<td>46%</td>
<td>41%</td>
</tr>
<tr>
<td>Available more frequently</td>
<td>19%</td>
<td>6%</td>
</tr>
<tr>
<td>Faster to use</td>
<td>20%</td>
<td>9%</td>
</tr>
</tbody>
</table>

**Caregivers experience more problems in systems out of balance**

<table>
<thead>
<tr>
<th>Relative to older systems, systems implemented in the last 18 months are:</th>
<th>1-3 New Systems</th>
<th>4-6 New Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less useful in patient care</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Available less frequently</td>
<td>7%</td>
<td>28%</td>
</tr>
<tr>
<td>Slower to use</td>
<td>19%</td>
<td>31%</td>
</tr>
</tbody>
</table>
OUT OF BALANCE – CAREGIVER CONCERNS

How would you describe the usability and reliability of the IT that you use to support the delivery of care to patients on a daily basis?

Available but occasionally slow: 54%
Available but often slow: 14%

Biggest Frustrations

- Too many passwords to memorize: 37%
- The process takes longer than it used to: 31%
- The interface is not user friendly: 25%
- The system keeps changing; can’t keep up: 25%

Sample: 101 physicians; 101 nurses
WHY BALANCE IS ALWAYS A CHALLENGE

While 63 percent report adding up to 3 new endpoint systems in the last 18 months and 16 percent report adding as many as 6, computing, network and storage capacity have not grown as quickly:

To what extent has your healthcare infrastructure increased during the last 18 months?

- **Computing**: 54%
- **Storage**: 64%
- **LAN**: 54%
- **WAN**: 41%

**Average file size of common healthcare studies**

- **Healthy patient file**: 5 MB
- **Ultrasound**: 28 MB
- **Full-field Digital Mammogram**: 108 MB
- **PET Scan**: 100 MB
- **Cardiac CT Scan**: 1.1 GB
- **64 slice CT Scan**: 3 GB
- **Pathology**: 5.2 GB


Sample: 200 Healthcare IT Professionals
When IT departments do deploy additional infrastructure, it is often after-the-fact and in response to user complaints. Nearly 80% of IT professionals confess to adding infrastructure this way.

Has your organization ever implemented a server, storage or network program after the implementation of a new system/capability to respond to user concerns or system problems?

- Yes, Frequently: 10%
- Yes, more than once: 58%
- Yes, once: 10%
- No: 10%
- Don’t know: 12%

Sample: 200 Healthcare IT Professionals
WHAT’S NEXT – BALANCING MOBILITY

Mobile devices create enormous new capabilities – but require new infrastructure to support.

96%
Of hospitals with 200 or more beds support mobile devices on the network

35%
Of hospitals with 200 or more beds have a formal mobile device management program in place

18%
Of hospitals with 200 or more beds have an established BYOD program

What infrastructure have you had to add to support mobile devices?

- Wireless network devices: 55%
- Security hardware or software: 44%
- Software applications: 38%
- WAN network capacity: 32%
- Application servers: 32%

Sample: 200 Healthcare IT Professionals
WHAT’S NEXT – BALANCING PRACTICES

Adding owned and affiliated physician practices to the network delivers great service – and new IT requirements.

What is the infrastructure impact of adding an affiliated or owned physician practice to your EHR? We would need additional:

- Software licenses: 52%
- Workstations: 51%
- Wireless network devices: 44%
- Storage: 40%
- WAN network capacity: 38%
- Security hardware or software: 36%

Sample: 200 Healthcare IT Professionals
SECURITY – HOW MUCH IS ENOUGH?

With tens of millions of patient records going digital in the coming years, just how much should healthcare organizations focus on IT security? Probably more than we are currently seeing.

Has your organization executed any of the following new IT security initiatives in the last 18 months?*

- Single sign on: 48%
- Network encryption: 42%
- Intrusion detection: 36%
- Organization-wide IT security training: 36%
- Data loss prevention: 33%
- Data-at-rest encryption: 16%
- Other: 8%

*Respondents asked to select all that apply

Sample: 200 Healthcare IT Professionals
WHAT SHOULD IT ORGANIZATIONS DO?

Help Executives Understand the Business Case:
Non-IT leaders must understand that caregiver efficiency can make or break an IT system business case. Include estimates of the impact on caregiver time (training, usage waiting, etc.) to give them an accurate picture of the true costs.

Deliver Comprehensive Budgets:
Executives allocating resources must recognize that the total cost assessment for endpoint solutions also includes investment in the backbone infrastructure needed to maintain or improve the delivery of the solution.

Build Ahead of Capacity:
Responding to user concerns after the fact is the most expensive approach to meeting infrastructure needs. By capacity planning first, IT leaders can take the pressure off of infrastructure investment.
Methodology: A National Survey

Between January 9 and January 23, 2012, CDW Healthcare surveyed 402 healthcare professionals at hospitals with 200 or more beds about healthcare IT at their facilities.

Caregivers

<table>
<thead>
<tr>
<th>Title</th>
<th>% of responders (total=202)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician/Doctor</td>
<td>50%</td>
</tr>
<tr>
<td>Nurse or other Caregiver</td>
<td>50%</td>
</tr>
</tbody>
</table>

Healthcare IT Professionals

<table>
<thead>
<tr>
<th>Title</th>
<th>% of responders (total= 200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Information Officer/Chief Technology Officer</td>
<td>5%</td>
</tr>
<tr>
<td>IT Director/Supervisor</td>
<td>16%</td>
</tr>
<tr>
<td>IT Manager</td>
<td>22%</td>
</tr>
<tr>
<td>IT Specialist or Engineer</td>
<td>54%</td>
</tr>
<tr>
<td>Network Administrator</td>
<td>2%</td>
</tr>
<tr>
<td>Datacenter Manager</td>
<td>1%</td>
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</tbody>
</table>
Thank you.

For all media questions and inquiries, please contact:

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