



Business Continuity Planning: Documentation During EMR Downtime

The webcast will begin shortly...

You have been automatically muted. Please use the Q&A panel to submit questions during the presentation

The screenshot shows the Cisco WebEx Event Center interface. The main presentation slide features the Galen Healthcare Solutions logo and the text "MUCH MORE THAN I.T. POSSIBILITY" and "Welcome to Today's Webcast". The slide also states "The webcast will begin shortly...".

Annotations with red arrows point to specific UI elements:

- Click for Full Screen Mode:** Points to the full screen icon in the top toolbar.
- Click to open Q&A Panel:** Points to the Q&A icon in the top toolbar.

The Q&A panel is open at the bottom right, showing a dropdown menu set to "All Panelists" and a text input field for questions. The text below the input field reads: "Select a panelist in the Ask menu first and then type your question here. There is a 256-character limit." A "Send" button is located to the right of the input field.



2005 → Year founded

3 → # KLAS rankings

4 → # Years voted Modern Healthcare's
Best Places to Work (2013-2016)

#1 for HIT Implementation
Support and Staffing
2015/2016

#1 for Technical Services
in 2015/2016

#2 in Technical Services
2014/2015



**Modern
Healthcare**

280 # OF
CUSTOMERS

46 # OF STATES
WITH
CUSTOMERS

Offices in:



**CHICAGO, BOSTON,
& BURLINGTON, VT**



**PROFESSIONAL
SERVICES**



**TECHNICAL &
INTEGRATION
SERVICES**



**PRODUCT
TECHNOLOGY
SOLUTIONS**

Healthcare Information Technology Focused

Our Vendor Expertise



CONVERSIONS



EMR OPTIMIZATIONS



DATA ARCHIVAL



INTEGRATION



CLINICAL TRANSFORMATION



OPERATIONS SUPPORT

Joe Nyiri

- Lead Software Engineer, DevOps
- Software Engineer, Development 2/2014 – 1/2017
- TW Upgrade/Technical Team 3/2011– 2/2014



Business Continuity Planning: Documentation During EMR Downtime

- Business Continuity vs. Disaster Recovery
- Considerations and consequences regarding EMR downtime
- Downtime prevention and mitigation



Paper Charts

- Not affected by loss of Internet
- No reliance on software
- No interfaces to other systems
- Charts are centrally located

Electronic Medical Record (EMR)

- Increased reliance on technology
- Increased costs (licensing)
- Learning Curve



When was your most recent downtime?



Business Continuity (BC)

- Business- and people-centric
- How will we continue to meet our business objective (see and treat patients) during an interruption to our workflow (disaster)?

Disaster Recovery (DR)

- Subset of the BC plan
- Data-centric
- Replicating, storing, recovering, and restoring data



Categorizing Disasters

- Data integrity problem
- Data availability problem (AKA Downtime)
- Environmental problem
- Personnel problem
- Privacy problem



Other Important Variables

- Duration
- Severity
- Patient Scope
- Physical Scope



What was the duration of your most recent downtime?



Consequences of Disaster/Downtime

- Financial
 - Downtime costs about \$160 per minute. - Daniel Morreale, CIO, Hunterdon Health System 1/19/2017
 - One hour of software downtime can cost a practice almost \$488 per physician. – Mark Anderson, *The Costs and Implications of EHR System Downtime on Physician Practices* 2/11/2011

\$488

Cost per hour, per physician when the
EHR system is down



Consequences of Disaster/Downtime

- Patient trust
- Patient safety



Cost of 1% Downtime (99% Uptime)

| Step | Process | Description | Sample |
|------|--|--|--|
| 1 | Calculate the organization average annual salary plus benefit costs. | Include all staff, their benefits and the average salary plus bonuses for each physician. | \$2,500,000 |
| 2 | Calculate the average salary downtime cost. | Multiply the value in step 1 time 2.15. The 2.15 value is the average cost factor for each minute a computer system is down. | $\$2,500,000 \times 2.15 = \$5,375,000$ |
| 3 | Calculate the average cost per hour. | Divide the total salary and benefit costs by 2,080, which is the average number of staff paid hours. | $\$5,375,000 \text{ divided by } 2,080 = \$2,584$ |
| 4 | Determine the number of hours the physicians need access to the EHR. | Most practices are open Monday through Friday 8 to 5. However, physicians need access to the EHR before and after clinic hours. The study assumed 60 hours per week, but your practice need may be less or more. | Monday through Friday at 12 hours per day = 60 hours |
| 5 | Determine how many hours 1% downtime (99% uptime) equates to. | 1% downtime based on 60 hours per week times 52 weeks per year. | $60 \times 52 \times 1\% = 31.2 \text{ hours}$ |
| 6 | Determine what 1% downtime would cost the organization. | Multiply results of step 3 by the results of step 5. | $\$2,584 \times 31.2 \text{ hours per year} = \$80,620 \text{ per year}$ |



Business Continuity Plan (BCP)

- Documented procedures to allow you to continue to see patients
- Who, what, where, when, and why
- Requires maintenance, testing, frequent updates



HIPAA Security Risk Assessment (SRA)

- Scope as per HIPAA Security Rule
 - Administrative safeguards (§ 164.308)
 - Physical safeguards (§ 164.310)
 - Technical safeguards (§ 164.312)



Disaster Recovery Plan (DRP)

- Business Impact Analysis (BIA)
- Identity/define potential disasters
- Prevent disaster
- Preparing for disaster
- Coping with downtime
- Recovering from disaster



Defining and Documenting Workflows

- If patient records are electronic, how do we get patient history, active problems, medications, etc. when EHR is down?
- If the network is down, how do we know the schedule for the day?
- What happens when the issue is resolved and the EHR is available again?
- How are walk-ins handled?
- What do we do about prescriptions, lab and order requisitions?



Potential Documentation Methods

- Paper forms
 - Where are forms located?
 - Who maintains form stock levels?
 - What to do when EHR is back up?
- Electronic documentation
 - What about if the network is down?



DR and BC Solutions

- High-availability
 - Clustered servers
 - Server farm
- Virtualization
- Read Only Environment
- DR Environment
 - Hot site vs Warm site vs Cold site
 - Software-based replication like Zerto
- Redundant WAN
- SAN Replication



VitalCenter

- Allows providers to continue to see patients in multiple disaster scenarios - network connection down, EHR upgrade downtime, server migration downtime, EHR unplanned downtime, EHR maintenance, EHR performance issues
- Transparent to patients
- Providers can document the visit electronically
- Staff can focus on treating patients
- Provides (by default) charts for last 30 days of appointments and next 5 days of appointments



Galen's BC Solution

Business Continuity Capabilities

| | vitalcenter | Disaster Recovery | Cluster DB / Web Farm | High Availability / Hot Site | Redundant WAN |
|--------------------------------|--------------------|--------------------|--------------------------|------------------------------|---------------|
| Network Downtime | ✓ | ✗ | ✗ | ⚠ | ✓ |
| Severe Performance Degradation | ✓ | ✗ | ✗ | ✗ | ✗ |
| Scheduled Upgrade | ✓ | ✗ | ✗ | ✗ | ✗ |
| Time to Switchover | ✓ Seamless | ✗ Hours to Days | ✓ Seamless to Seconds | ⚠ Hour(s) | ✓ |
| Server Hardware Failure | ✓ | ✓ | ✓ | ✓ | ✗ |
| Application Failure | ✓ | ⚠ | ✗ | ⚠ | ✗ |
| Data Corruption | ✓ | ✓ | ✗ | ⚠ | ✗ |
| Cost | \$\$ | \$\$\$ | \$ | \$\$\$\$\$ | \$\$\$\$ |



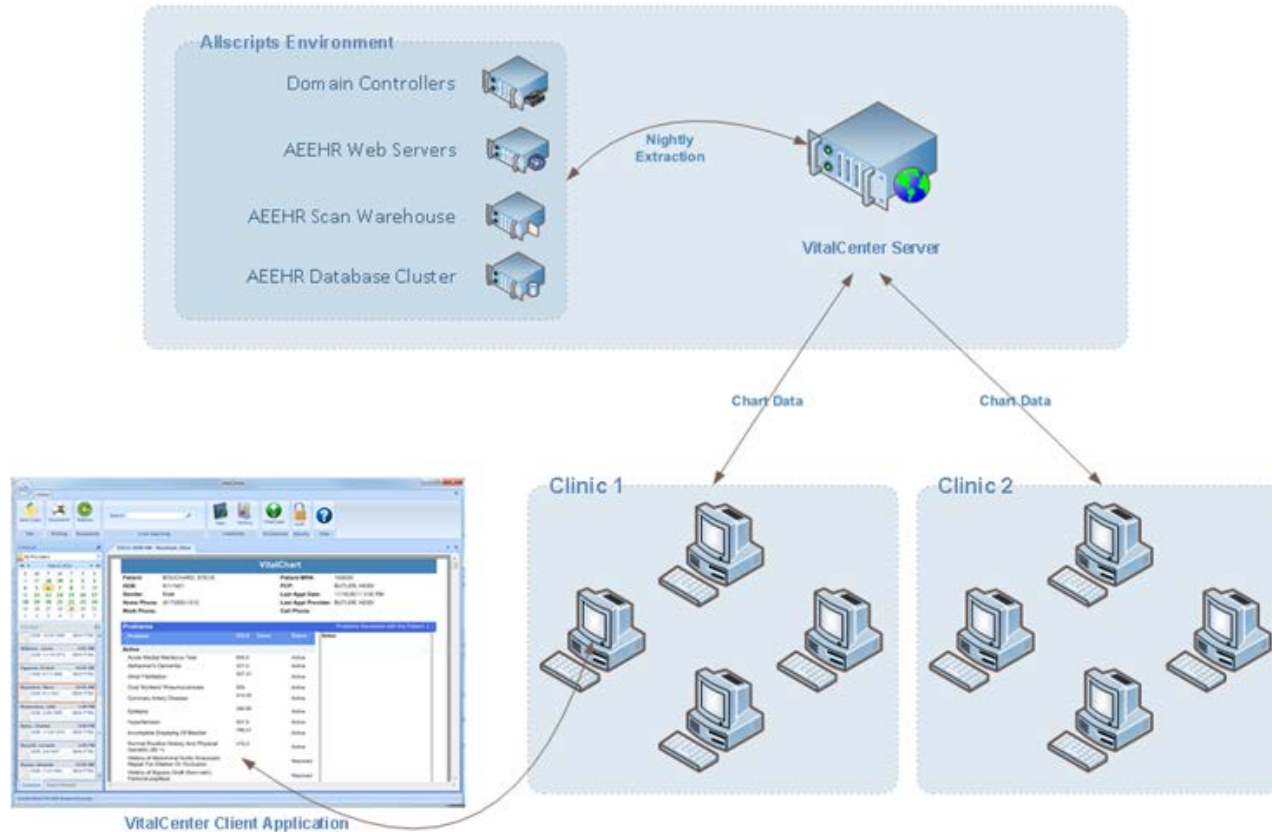
Indicates that the solution above only performs in limited scenarios. As an example, with application failure a hot site would only function if the failure had not been replicated to the hot site servers, which depends on the hot site configuration and timing of the failure.

“ An afternoon of cancelled appointments is a significant amount of money. Our analysis found that if a physician used VitalCenter for 20 minutes to avoid cancelling one appointment, the application would pay for itself for the whole year. ”

— Michael Hayes, Director of IT, Summit Medical Group



VitalCenter Solution Overview



VitalCenter Terminal Client

- Application installed on staff PCs
- VitalCharts are automatically downloaded to PCs
- Scheduled VitalCharts allow for patient care even in complete network downtime
- On-Demand VitalChart requests cover walk-ins or chart content not in scheduled VitalCharts
- VitalNote allows for electronic documentation of the visit, even in complete network downtime
- Encrypted, secure, and HIPAA-compliant



VitalCenter Solution Overview

The screenshot displays the VitalCenter web application interface. At the top, there's a navigation bar with icons for 'Save Copy', 'Document', 'Refresh', 'Search', 'New', 'History', 'VitalChart', and 'Lock'. Below this is a 'Schedule' section for 'JILL ADAMS' showing a calendar for August 2011. A callout points to the provider name: 'Select the provider whose schedule you wish to view.' The calendar shows dates 14 through 20 in green, indicating available VitalCharts. A callout points to these green dates: 'Dates with available VitalCharts show up green. Selecting a date displays the available charts below.' Below the calendar, a list of patients is shown for the date 8/17/2011. A callout points to the 'VitalChart' link in the patient list: 'Double clicking the VitalChart opens it. You can also right click for more options.' The patient list includes: Johnson, Kimberly (2:00 PM, DOB: 12/7/1980, NEW PT60), Baker, Charles (2:00 PM, DOB: 11/24/1970, NEW PT60), Ryan, Angela (3:00 PM, DOB: 6/30/2003, NEW PT60), Bouchard, Steve (3:00 PM, DOB: 6/1/1921, NEW PT60), Russell, Steve (3:00 PM, DOB: 12/15/2000, NEW PT60), Figueroa, Joan (4:00 PM, DOB: 9/13/2005, NEW PT60), and Stevens, Donna (4:00 PM, DOB: 6/9/1927, NEW PT60). The bottom status bar shows 'Last Refreshed: 8/24/2011 4:40:02 PM / 8/24/2011 12:00:46 AM'.

"Our organization is reliant on the information contained in the EHR, and it is my group's responsibility to ensure access to that information. VitalCenter™ provides me that capability."

Lenny Brunson - Chief Information Officer,
Queens-Long Island Medical Group

"VitalCenter gives me peace of mind from a patient care perspective. We need to provide the best patient care possible at all times, and VitalCenter allows us to ensure patient records will be available in downtime scenario."

Joe Berman - Chief Operating Officer,
Acton Medical Associates, P.C.

"Galen's technical services have allowed us to utilize Enterprise EHR in ways that we never imagined were possible."

Tom Goodwin - Director of Clinical Information Systems,
MIT Medical



VitalCenter Web Access

- Access via web browser
- No additional software installation or plugins required
- View schedules, scheduled VitalCharts, scanned documents
- Make On-Demand VitalChart requests
- VitalNote visit documentation
- Great for thin-client or Citrix as well as gap coverage



VitalCenter Solution Overview

VitalCenter Web Access - Internet Explorer

https://vctest3.galenhealth... VitalCenter Web Access

joe.nyiri | Log Out

VitalCenter WEB ACCESS

VitalCenter Web Access Help

Support Site | E-Mail

Schedule On-Demand

All Providers

May 2016

| S | M | T | W | T | F | S |
|----|----|----|----|----|----|----|
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | 1 | 2 | 3 | 4 |

Allscripts, Allison T 2:20 PM
DOB: 3/5/1973 TWAppt

Allscripts, Amber T 2:30 PM
DOB: 8/27/2007 TWAppt

VitalChart Scans New VitalNote

VitalChart

Patient: Allscripts, Amber T
DOB: 8/27/2007
Gender: Female
Home Phone: (312) 555-1111
Work Phone: (847) 608-3515 x4358

Patient MRN: ZZZTW02
PCP: Allscripts, Provider
Last Appt Date: 5/25/2016 11:15 AM
Last Appt Provider: Allscripts, Cardiologist
Cell Phone:

Problems

Problems Reviewed with the Patient: []

| Problem | ICD-9 | ICD-10 | Onset | Last Assessed | Status |
|---|--------|----------|-------|-------------------|--------|
| Active | | | | | |
| Arm bruise | 923.9 | S40.029A | | 5/25/2016 1:00 PM | Active |
| Breast nodule | 793.89 | N63 | | | Active |
| Chest discomfort | 786.59 | R07.89 | | | Active |
| Neck erythema | 695.9 | L53.9 | | | Active |
| Pharyngitis, acute | 462 | J02.9 | | | Active |
| Strep throat | 034.0 | J02.0 | | | Active |
| Well child visit | V20.2 | Z00.129 | | | Active |
| FHx | | | | | |
| Family history of Arteriosclerosis, cervical, assoc w/ surg rep of aortic arch anomaly, perinatal | | | | | Active |
| Family history of Miscellaneous gen/plast-surg devices assoc w incdt, NEC | | | | | Active |

Notes:



VitalCenter Batch Extracts

- Submit batches of patients
- VitalCharts created in bulk
- Up to 1,000 - 2,000 charts created simultaneously
- Insurance audits
- Research studies
- Medical Record requests

“ Release of patient charts for insurance audits is now only performed through VitalCenter for a fee for each chart. In the first half of 2015, we’ve extracted over 100,000 charts for Cigna, Blue Cross and Humana audits. The revenue from the first half of this year alone has paid for approximately 70% of a five year VitalCenter subscription cost. ”

— Michael Hayes



VitalCenter Solution Overview

VitalCenter Bulk Batch: demo - Internet Explorer

https://vctest3.galenhealthcar... VitalCenter Bulk Batch: demo

Joe Ryan

Support Site | E-Mail | V...

vitalcenter **GALEN** HEALTHCARE SOLUTIONS

Dashboard Terminals Server Documents Operations VitalNotes Locations

VitalChart Batch Generation: demo

The audit batch was successfully added and submitted. Close

Create a New Batch
Server Logs

Information Path & Filename Settings VitalChart Settings Results

demo Results Refresh

Total Batch Entries: 40
Pending: 0
Completed Processing: 40
Completed Processing (with Errors): 0
Errors: 0
Cancelled: 0

Last Refresh: 2/2/2017 10:29:46 AM
Download Completed Entries

| Matching |
|-----------------------|
| Unmatched: 0 |
| Matched: 40 |
| No Matches: 0 |
| Duplicate Matches: 0 |
| Duplicate in Input: 0 |
| Invalid Input: 0 |

| VitalChart Generation |
|-----------------------|
| Ready for Gen.: 0 |
| Generation Req.: 0 |
| Queued for Copy: 0 |

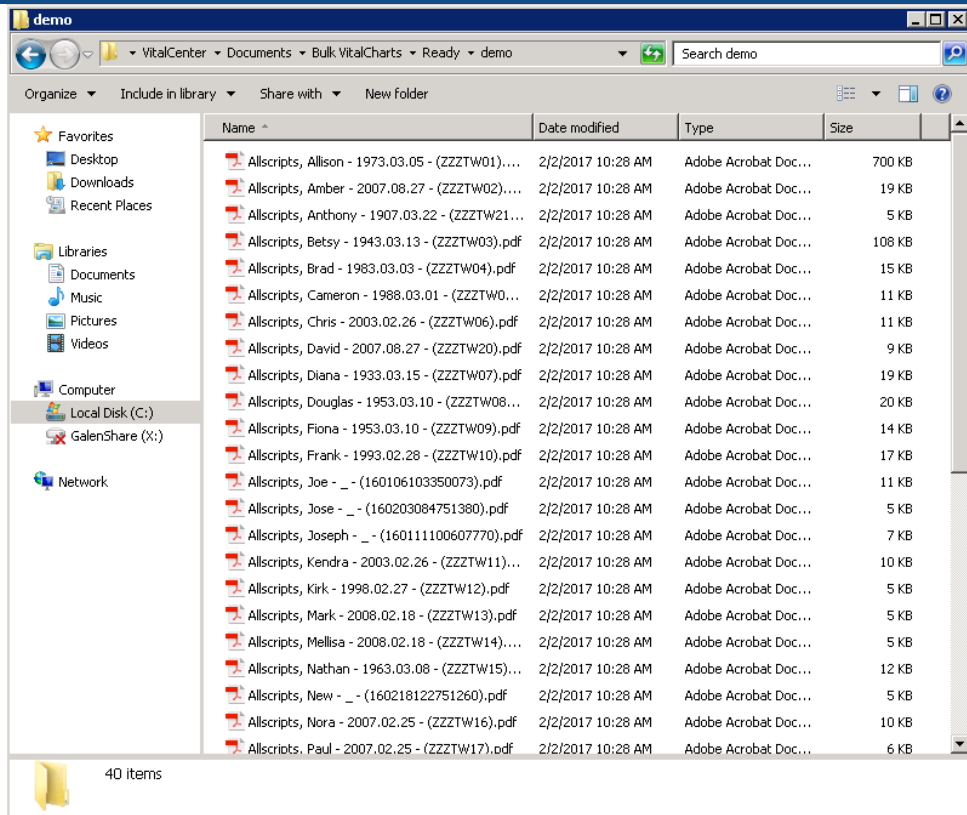
| Scans |
|--------------------|
| Ready for Scans: 0 |

Save & Submit Save Changes Cancel Cancel Batch

Version: 2.4.2016.3631 Server Time Zone: (UTC-05:00) Eastern Time (US & Canada) Client Time Zone: (UTC-05:00) Eastern Time (US & Canada) Copyright © 2008 - 2017 Galen Healthcare Solutions



VitalCenter Solution Overview



VitalCenter Online Archival



Security

HIPAA & HITECH
Compliant



Fully Integrated

Auditing and audit
reporting



Reliability

99.9% uptime SLA
Per minute in-time restore
for up to 35 days
Triply redundant architecture



Single Sign-On

Complete access to all
legacy data



Isolation of customer data



Always encrypted



All archived data in a single repository



WHY GALEN?

ENSURING YOUR SUCCESS FROM START TO FINISH

Galen has built a reputation of high-quality, expert level health care IT consulting services for almost a decade. The foundation of our success and growth can be attributed to our people. It's what we care about as a company that makes us unique.

EXPERIENCE THE DIFFERENCE

COLLABORATIVE

EMPOWERING

NIMBLE

HEALTH CARE FOCUSED PERSONABLE

EGO FREE

CLIENT PARTNERSHIP

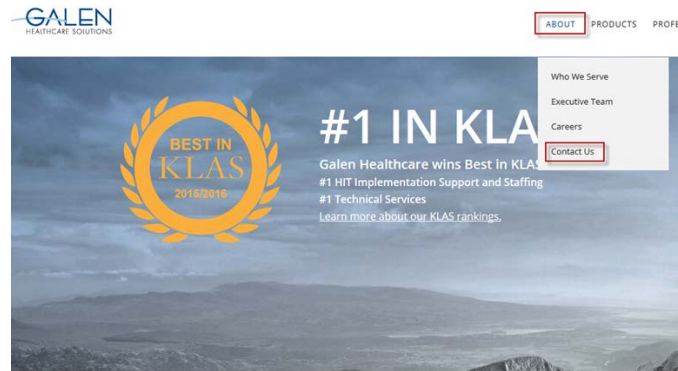
ONE STOP SHOP

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PREPARING FOR TOMORROW.

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