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# Unprecedented Data *In Context* from Compliance ... to Risk... to Quality

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*See Events... Exactly as  
They Occurred*

# Agenda

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- Study of tools for Risk, Quality & Compliance
- Solutions to mitigate risk, improve quality & compliance, while reducing cost
- Real world situations & solutions
- Examples

# Tools and Processes Used

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- Studied hospitals & ASCs
- Risk managers overwhelmed
- Budgets limited
- “It won’t happen here”
- Investigation/log tools expensive & limited
- Data exists on and off-site but it is proprietary
- Risk managers love & fear data

# Quality, Compliance and Risk Challenges

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- Log files, more log files & even more log files
- Interviewing practitioners
- SIEM or log consolidation tools
- Analytic tools can help mine data
- Data discovery tools only find misplaced or unorganized data

# The Result

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- Only enough time to be reactive
- Investigation occurs after the event happened
- Rely on practitioners word & memory
- Data discovery lengthy & resource intensive
- Log files lack detail to defend quality of care
- The trial lawyers “twist” the lack of detail

# New Compliance, Risk and Quality Solution Category

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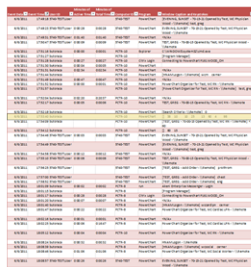
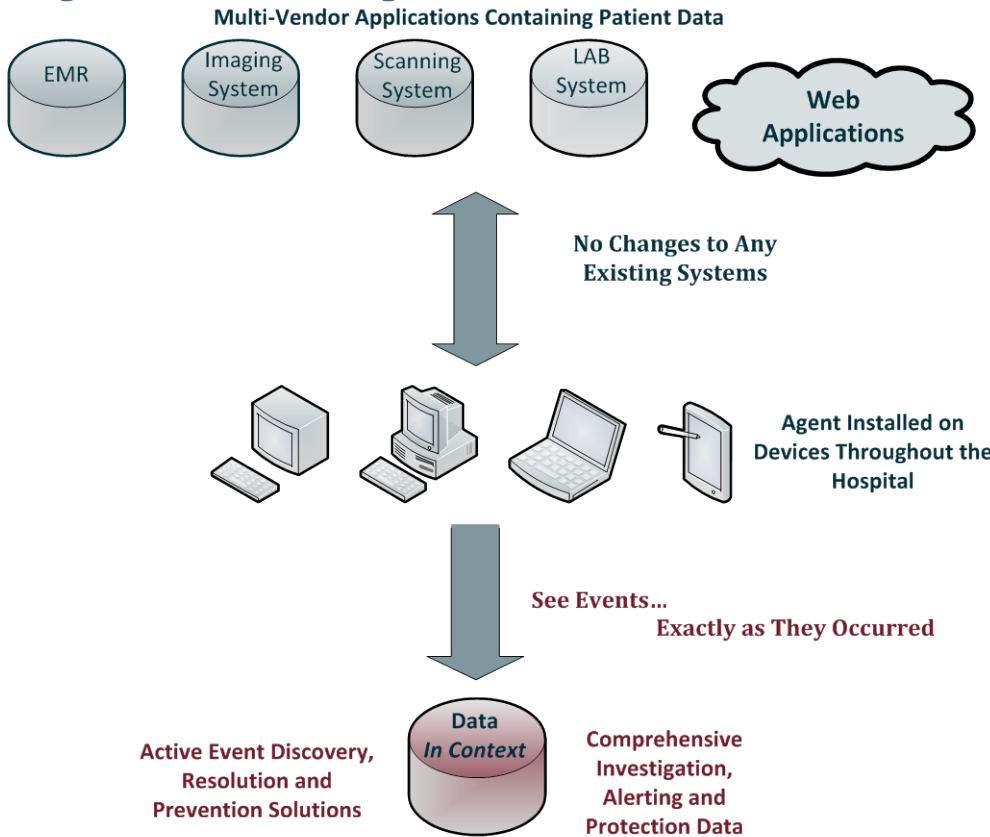


## Active Event Discovery, Resolution and Prevention Solutions

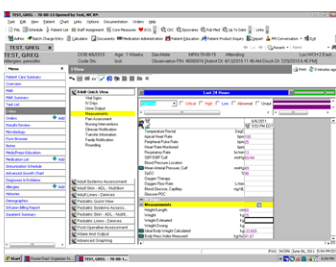
- Off-the-shelf, inexpensive tools collect data from every PC
- Data consolidation tools bring data together in one place
- Regex tools analyze data for patient data
- Works in existing environments

# “See Events...

# Exactly as They Occurred”



Event ID	Time	Source	Event Type	Severity	Details
1000001	2011-10-21 10:00:00	EMR	Access Granted	Low	User: J. Smith, Location: Room 101
1000002	2011-10-21 10:05:00	Imaging System	Scan Completed	Medium	Machine: CT-001, Patient: P-123
1000003	2011-10-21 10:10:00	Scanning System	Queue Full	High	Location: Radiology Dept
1000004	2011-10-21 10:15:00	LAB System	Result Anomaly	Critical	Test: Hematocrit, Value: 55%
1000005	2011-10-21 10:20:00	Web Applications	Session Timeout	Low	User: Admin, IP: 192.168.1.1



# “See Events... Exactly as They Occurred”

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- Discover data from all systems in seconds
- Create easy to understand reports with detailed time-lines
- Analyze each event in context
- Defend quality of care with step-by-step details
- Actively identify abnormal events



# Complex Problem...



## Simple Solution

### Large NJ Hospital

- Spinal cord injury brought into the ER
- Patient later discharged as a paraplegic
- Patient claims hospital did not provide care
- Hospital lacks ability to show what happened
  
- Result – Hospital settles, cannot defend
  
- With new solutions – Defend by showing exacting what was occurring in the MRI

# Complex Problem...



## Simple Solution

### Small Private Hospital in Texas

- Discovered large number of manual processes
- Handwritten and faxed orders to ER
- Scanned into a PDF
- Emailed as an attachment to proper department
- Manually entered into EMR
  
- Result – Risk of errors & meaningful use failure
- With new solutions – Discovered in minutes & new process in place quickly

# Complex Problem...



## Simple Solution

### Large For-Profit ASC in Nevada

- Nurses using SMS to reach physicians
- Patient information inbound in clear text
- Cannot identify individual involved in snooping
- Gmail used by physicians
  
- Result – HIPAA violations & risk of litigation
- With new solutions – Discovered in minutes, new processes put in place

# Complex Problem...

# Simple Solution



## Large For-Profit ASC in Florida

- Litigation challenges
- Not enough detail & “color” in the EMR
- Lack data to defend & prove quality of care
- Result – Challenging & expensive to defend
- With new solutions – Hospital is now on a level playing field with trial attorneys

# EMR Audit Log



What happened during an interaction with Test, Greg 700015 on Monday June 6th at 5:15PM to 6:30PM?

6/6/2011 6:09:36 PM EDT	Test, WC Social Worker	Social Worker
6/6/2011 6:02:16 PM EDT	Test, WC Cardiac LPN	WC Cardiac LPN
6/6/2011 5:54:59 PM EDT	Test, WC Physician Wood	Physician
6/6/2011 5:54:44 PM EDT	Test, WC Physician Wood	Physician
6/6/2011 5:52:03 PM EDT	Test, WC RN	RN
6/6/2011 5:49:31 PM EDT	Test, WC Physician Wood	Physician
6/6/2011 3:30:35 PM EDT	Test, WC HIM: Coders	HIM: Coders
6/6/2011 3:02:51 PM EDT	Test, RN1	RN
6/6/2011 2:36:04 PM EDT	TEST, RN5	RN
6/6/2011 2:33:14 PM EDT	Test, RN1	RN
6/6/2011 2:32:53 PM EDT	Test, RN1	RN
6/6/2011 12:30:26 PM EDT	Test, SurgiNet: WC DBC	DBC: SurgiNet
6/6/2011 11:48:24 AM EDT	Test, SurgiNet: WC RN Team Lead	SurgiNet: RN Team Lead
6/6/2011 11:44:18 AM EDT	Test, SurgiNet: WC RN Surgical Services	SurgiNet: RN Surgical Services
6/6/2011 10:37:20 AM EDT	Test, WC RN	RN
6/6/2011 10:35:08 AM EDT	Test, SurgiNet: WC RN Surgical Services	SurgiNet: RN Surgical Services
6/6/2011 10:31:54 AM EDT	Test, RN1	RN
6/6/2011 7:59:03 AM EDT	Test, WC RN	RN
6/6/2011 7:57:39 AM EDT	Test, WC RN	RN
6/6/2011 7:57:29 AM EDT	Test, WC RN	RN
6/6/2011 7:54:04 AM EDT	Test, SurgiNet: WC RN Surgical Services	SurgiNet: RN Surgical Services

# Event Log In Context



Event Data	Event Time	User ID	Minutes of Active Time	Minutes of Total Time	Computer ID	Program	Window Caption and Keystrokes
6/6/2011	17:49:18	5740-TEST\User			5740-TEST	PowerChart	[EVENING, SUNSET - 70-15-21 Opened by Test, WC Physician Wood - \\Remote] test, greg
6/6/2011	17:49:23	5740-TEST\User	0:00:28	0:00:28	5740-TEST	PowerChart	EVENING, SUNSET - 70-15-21 Opened by Test, WC Physician Wood - \\Remote
6/6/2011	17:49:31	5740-TEST\User	0:01:40	0:01:40	5740-TEST	PowerChart	<N/A>
6/6/2011	17:50:47	5740-TEST\User	0:00:09	0:00:09	5740-TEST	PowerChart	TEST, GREG - 70-00-15 Opened by Test, WC Physician Wood - \\Remote
6/6/2011	17:51:16	butoraca	0:00:00	0:00:01	PCTR-10	Explorer	C:\WINDOWS\system32\cmd.exe
6/6/2011	17:51:27	butoraca			PCTR-10		[Program Manager]
6/6/2011	17:51:28	butoraca	0:00:27	0:00:27	PCTR-10	Citrix Login	Connecting to Powerchart P161WOOD_OH
6/6/2011	17:51:30	butoraca	0:00:04	0:00:05	PCTR-10	PowerChart	
6/6/2011	17:51:31	butoraca	0:02:34	0:02:34	PCTR-10	PowerChart	<N/A>
6/6/2011	17:51:44	butoraca			PCTR-10	PowerChart	[HNAM Logon - \\Remote] wcrn cerner
6/6/2011	17:51:49	butoraca	0:00:47	0:00:47	PCTR-10	PowerChart	<N/A>
6/6/2011	17:51:52	butoraca	0:00:00	0:00:01	PCTR-10	PowerChart	PowerChart Organizer for Test, WC RN - \\Remote
6/6/2011	17:51:57	butoraca			PCTR-10	PowerChart	[PowerChart Organizer for Test, WC RN - \\Remote] test, greg
6/6/2011	17:52:04	butoraca	0:02:20	0:20:37	PCTR-10	PowerChart	<N/A>
6/6/2011	17:52:17	butoraca	0:00:05	0:00:06	PCTR-10	PowerChart	TEST, GREG - 70-00-15 Opened by Test, WC RN - \\Remote
6/6/2011	17:52:19	butoraca			PCTR-10	PowerChart	[Search Criteria - \\Remote] 0
6/6/2011	17:53:40	butoraca			PCTR-10	PowerChart	[ ] 38 10 10 25 13 60 4 98
6/6/2011	17:54:09	butoraca			PCTR-10	PowerChart	[TEST, GREG - 70-00-15 Opened by Test, WC RN - \\Remote] < 60
6/6/2011	17:54:12	butoraca			PCTR-10	PowerChart	[ ] 60 15
6/6/2011	17:54:46	5740-TEST\User	0:00:03	0:00:03	5740-TEST	PowerChart	EVENING, SUNSET - 70-15-21 Opened by Test, WC Physician Wood - \\Remote
6/6/2011	17:54:49	5740-TEST\User			5740-TEST	PowerChart	[EVENING, SUNSET - 70-15-21 Opened by Test, WC Physician Wood - \\Remote] test, greg
6/6/2011	17:54:58	5740-TEST\User	0:00:12	0:00:12	5740-TEST	PowerChart	<N/A>
6/6/2011	17:55:10	5740-TEST\User	0:00:08	0:00:08	5740-TEST	PowerChart	TEST, GREG - 70-00-15 Opened by Test, WC Physician Wood - \\Remote
6/6/2011	17:56:25	5740-TEST\User			5740-TEST	PowerChart	[TEST, GREG - Add Order - \\Remote] prothrom
6/6/2011	17:57:00	5740-TEST\User			5740-TEST	PowerChart	[TEST, GREG - Add Order - \\Remote] chest
6/6/2011	17:58:52	5740-TEST\User			5740-TEST	PowerChart	[TEST, GREG - Add Order - \\Remote] ekg
6/6/2011	18:01:09	butoraca	0:00:02	0:00:02	PCTR-8	run	Akeni Enterprise Messenger - Login
6/6/2011	18:01:15	butoraca			PCTR-8		[Program Manager]
6/6/2011	18:01:17	butoraca	0:00:28	0:00:28	PCTR-8	Citrix Login	Connecting to Powerchart P161WOOD_OH
6/6/2011	18:01:20	butoraca	0:00:07	0:00:07	PCTR-8	PowerChart	<N/A>
6/6/2011	18:01:40	butoraca			PCTR-8	PowerChart	[HNAM Logon - \\Remote] wccardlpn cerner
6/6/2011	18:01:47	butoraca	0:00:22	0:00:22	PCTR-8	PowerChart	PowerChart Organizer for Test, WC Cardiac LPN - \\Remote
6/6/2011	18:02:16	butoraca	0:00:01	0:00:01	PCTR-8	PowerChart	<N/A>
6/6/2011	18:02:25	butoraca	0:00:06	0:16:47	PCTR-8	PowerChart	PowerChart Organizer for Test, WC Cardiac LPN - \\Remote
6/6/2011	18:05:12	butoraca	0:00:04	0:00:04	PCTR-10	PowerChart	PowerChart Organizer for Test, WC RN - \\Remote
6/6/2011	18:08:24	butoraca	0:00:32	0:00:32	PCTR-8	PowerChart	HNAM Logon - \\Remote
6/6/2011	18:08:39	butoraca			PCTR-8	PowerChart	[HNAM Logon - \\Remote] wcsocial cerner
6/6/2011	18:08:46	butoraca	0:01:06	0:01:06	PCTR-8	PowerChart	PowerChart Organizer for Test, WC Social Worker - \\Remote
6/6/2011	18:08:57	5740-TEST\User	0:00:26	0:00:26	5740-TEST	PowerChart	EVENING, SUNSET - 70-15-21 Opened by Test, WC Physician Wood - \\Remote

# See the Events... *In Context*

## Social Worker Using the EMR



PowerChart Organizer for Test, WC Social Worker

Task Edit View Patient Chart Links Task List Options Help

Multi Patient Task List

Departmental View, Assigned Tasks

Scheduled Patient Care | All PRN Tasks | All Continuous Tasks

Task retrieval completed

Name	Medical Record Number	Location/Room/Bed	Task Status	Scheduled Date and Time	Task Description	Order Details
The selected patients, time frame and filters for this view did not return any tasks						

Windows taskbar: Start, PowerChart Organize..., N:\WOOD\_COUNTY\utoraca.PC\FR-8-007001\F... P151 WCSOCTAL June 06, 2011 6:08 PM EDT

Click here to play...

Or link to... <http://www.youtube.com/watch?v=8-FnZx2TPg>



# How the Hospital Defend Against Negligence With This PACs System Audit Log?



- Dr. Smith was asked to consult by the primary physician
- Image review June 6th, 4:33PM
- He retrieved many images
- Log only shows time of retrieval
- How did he conduct his consultation?

**Activity List for patient 3286071**

Reports:  
DATE USER ID EXAM ACTIVITY

Studies:  
DATE USER ID STUDY ACTIVITY

Jun 6 2011 4:33PM	smithd	30447	Accessed
Jun 6 2011 4:33PM	smithd	125	Accessed
Jun 6 2011 4:33PM	smithd	29098	Accessed
Jun 6 2011 4:33PM	smithd	34	Accessed
Jun 6 2011 4:33PM	smithd	28008	Accessed
Jun 6 2011 4:33PM	smithd	146	Accessed
Jun 6 2011 4:33PM	smithd	27895	Accessed
Jun 6 2011 4:33PM	smithd	112	Accessed
Jun 6 2011 4:33PM	smithd	224	Accessed
Jun 6 2011 4:33PM	smithd	26354	Accessed
Jun 6 2011 4:33PM	smithd	179	Accessed
Jun 6 2011 4:33PM	smithd	231	Accessed
Jun 6 2011 4:33PM	smithd	45295	Accessed
Jun 6 2011 4:33PM	smithd	2735	Accessed
Jun 6 2011 4:33PM	smithd	26420	Accessed
Jun 6 2011 4:33PM	smithd	30447	Accessed
Jun 6 2011 4:33PM	smithd	125	Accessed
Jun 6 2011 4:33PM	smithd	29098	Accessed
Jun 6 2011 4:33PM	smithd	34	Accessed
Jun 6 2011 4:33PM	smithd	28008	Accessed
Jun 6 2011 4:33PM	smithd	146	Accessed
Jun 6 2011 4:33PM	smithd	27895	Accessed
Jun 6 2011 4:33PM	smithd	112	Accessed
Jun 6 2011 4:33PM	smithd	224	Accessed
Jun 6 2011 4:33PM	smithd	26354	Accessed
Jun 6 2011 4:33PM	smithd	179	Accessed
Jun 6 2011 4:33PM	smithd	231	Accessed
Jun 6 2011 4:33PM	smithd	45295	Accessed
Jun 6 2011 4:33PM	smithd	2735	Accessed
Jun 6 2011 4:33PM	smithd	26420	Accessed



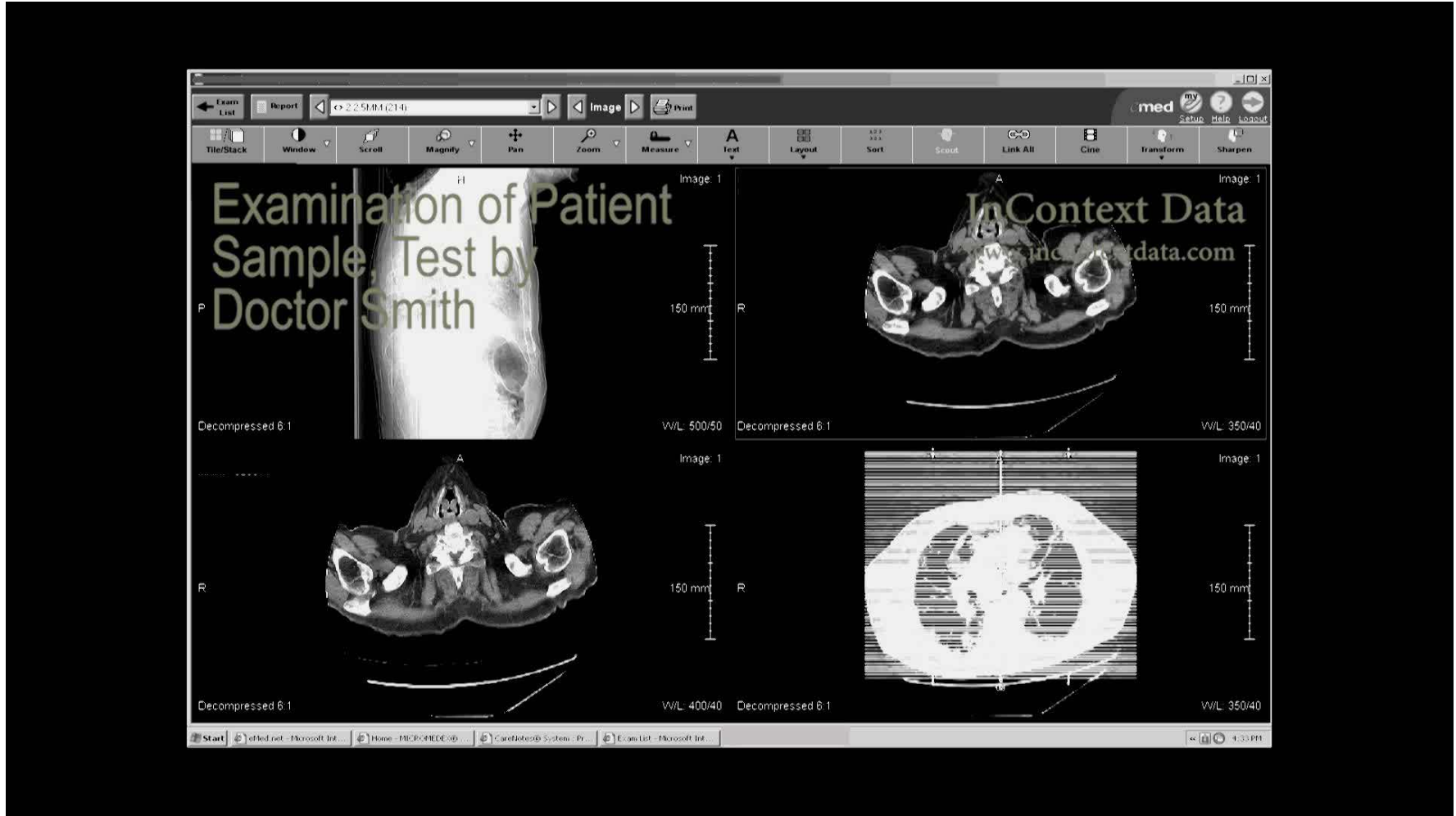
# Event Log *In Context*



Event Data	Event Time	User ID	Minutes of Active Time	Minutes of Total Time	Computer ID	Program	Window Caption and Keystrokes	URL
6/6/2011	16:32:42	DunnP	0:00:11	0:00:11	PC2E-4	IExplore	Welcome to eMed.net	<a href="http://tchweb/public/login.html">http://tchweb/public/login.html</a>
6/6/2011	16:32:42	DunnP	0:00:01	0:49:35	PC2E-4	IExplore	eMed.net	<a href="http://tchweb/">http://tchweb/</a>
6/6/2011	16:32:44	DunnP			PC2E-4	IExplore	Welcome to eMed.net - Microsoft Internet Explorer provided by The County Hospital	
6/6/2011	16:32:53	DunnP	0:00:00	0:00:00	PC2E-4	IExplore		<a href="http://tchweb/public/cgi-bin/redirect.exe">http://tchweb/public/cgi-bin/redirect.exe</a>
6/6/2011	16:32:53	DunnP	0:00:38	0:49:23	PC2E-4	IExplore	Exam List	<a href="http://wchweb/oncall.html?privileges=67&amp;username=smithd&amp;criteria=limit%3D30%26SRCH%3D%27PNAM%3Druehl%26PNAM%3D%2Cjames%26SORT%3D%22%2BPNAM%22%27">http://wchweb/oncall.html?privileges=67&amp;username=smithd&amp;criteria=limit%3D30%26SRCH%3D%27PNAM%3Druehl%26PNAM%3D%2Cjames%26SORT%3D%22%2BPNAM%22%27</a>
6/6/2011	16:32:54	DunnP	0:00:05	0:00:05	PC2E-4	IExplore	Installing eMed.net Software	<a href="http://tchweb/InstallControl.html">http://tchweb/InstallControl.html</a>
6/6/2011	16:33:05	DunnP			PC2E-4	IExplore	Exam List - Microsoft Internet Explorer provided by The County Hospital Jonesm	
6/6/2011	16:33:36	DunnP	0:09:01	0:48:40	PC2E-4	IExplore	Studies for JONES, BOB, Sex:M, DOB:1/08/1950, MRN:3286071	<a href="http://tchweb/study.html?username=smithd&amp;privileges=67&amp;lastname=JONES&amp;firstname=BOB&amp;mrn=3268071%5EPu5t&amp;dob=1%2F08%2F1950&amp;sex=M&amp;exam=%2D%5EE51b1&amp;study=30447%5ESTpt0ek&amp;modality=CT&amp;referrer=/oncall.html">http://tchweb/study.html?username=smithd&amp;privileges=67&amp;lastname=JONES&amp;firstname=BOB&amp;mrn=3268071%5EPu5t&amp;dob=1%2F08%2F1950&amp;sex=M&amp;exam=%2D%5EE51b1&amp;study=30447%5ESTpt0ek&amp;modality=CT&amp;referrer=/oncall.html</a>
6/6/2011	17:22:41	DunnP	0:00:13	0:01:18	PC2E-4	IExplore	The County Hospital Intranet	<a href="http://www.tch.int/">http://www.tch.int/</a>

# See the Events... *In Context*

## Dr. Smith Examining the Patient



Click here to play...

Or link to...

[www.youtube.com/watch?v=iuYjXFw9-kg](http://www.youtube.com/watch?v=iuYjXFw9-kg)

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