



Evidence Solutions, Inc.

&

Juris Educational Resource Knowledge

Present:

Electronic Medical Records Forensics EMR
EHR Electronic Health Record Forensics

June 2016

Presented by:

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Trust the Data
not
The software



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Electronically Stored
Information in Litigation


- Frequently we are presented with data that appears perfectly normal and supports a particular side to a case.
- Unfortunately software, displays data in a sorted and organized form. Manipulated Data will not be evident when looking at standard reports.



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How am I going to get there?

- A Civil Case: Medical Billing
- Discussion of Electronic Medical Records
- A Civil Case: Falsified Email
- With a few other things thrown in...



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Scott Greene

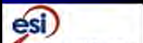
- Has been doing computer consulting for over 30 years.
- Performing:
 - Custom programming
 - Design and optimization
 - Database administration
 - Network and workstation general support
- For:
 - Service
 - Retail
 - Hospitality
 - Legal
 - Manufacturing
 - Medical



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Reasons to examine electronic data

- Almost all documents are now 'word processing' documents.
- Nearly all business activities are now computerized
- E-mail communications have surpassed telephone and postal (snail mail) communication.
- Text Messages now overshadow E-mail




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What can data Forensics Tell Us?

- Almost Everything: from the character of the user to their interests, activities, financial health, acquaintances and more.
- Collected from their life online: applications, email systems, web browsers and free space.
- The details from their life, outlook, intelligence and interactions are as individual as any fingerprint.
- All Public & Private business transactions, communications with accomplices, fraud indicators and much more are frequently available.




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Billing Case


- Plaintiff Company:
 - Contracted to bill for a high end medical specialist with his own surgical facility.
- Maintained:
 - That they properly billed for all services.
 - The did so in a timely manner.



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Billing Case


- Defendant Doctor/Surgical Facility
 - Maintained that the Plaintiff did not bill timely
 - Determined that the Plaintiff chose to concentrate on the large ticket bills



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Case BS (Before Scott)


- Procedural issues of the billing dispute
- Discovery disputes – billing company claimed that it didn't have certain data
- Arbitrator failed to order production of billing software until eve of arbitration



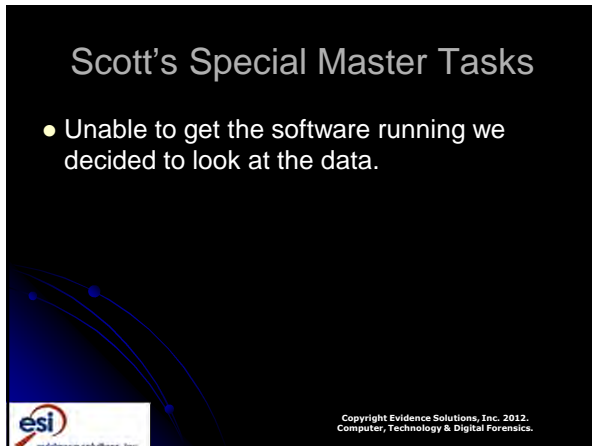
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Scott's Special Master Tasks

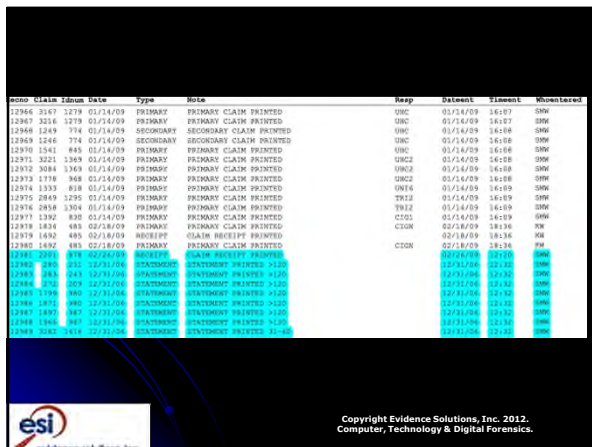
- Evidence Solutions was tasked with analyzing the software and determining what standard reports were available from the system.



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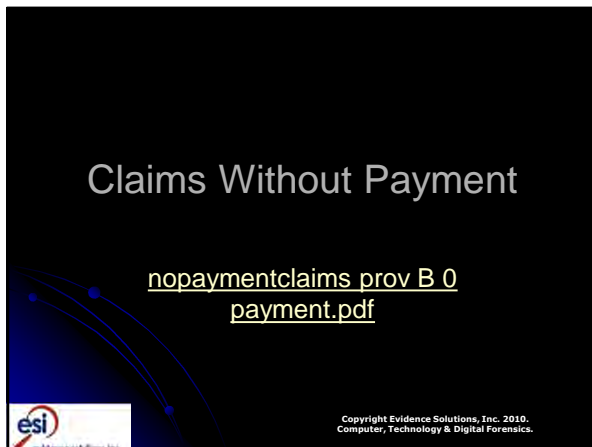







Recno	Claim	Idnum	Date	Type	Note
12966	3167	1279	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12967	3216	1279	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12968	1249	774	01/14/09	SECONDARY	SECONDARY CLAIM PRINTED
12969	1246	774	01/14/09	SECONDARY	SECONDARY CLAIM PRINTED
12970	1541	845	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12971	3221	1369	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12972	3084	1369	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12973	1778	968	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12974	1333	818	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12975	2849	1295	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12976	2858	1304	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12977	1392	830	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED
12978	1834	485	02/18/09	PRIMARY	PRIMARY CLAIM PRINTED
12979	1692	485	02/18/09	RECEIPT	CLAIM RECEIPT PRINTED
12980	1692	485	02/18/09	PRIMARY	PRIMARY CLAIM PRINTED
12981	2201	878	02/26/09	RECEIPT	CLAIM RECEIPT PRINTED
12982	280	231	12/31/06	STATEMENT	STATEMENT PRINTED >120
12983	283	243	12/31/06	STATEMENT	STATEMENT PRINTED >120
12984	272	209	12/31/06	STATEMENT	STATEMENT PRINTED >120
12985	1799	980	12/31/06	STATEMENT	STATEMENT PRINTED >120
12986	1871	980	12/31/06	STATEMENT	STATEMENT PRINTED >120
12987	1897	987	12/31/06	STATEMENT	STATEMENT PRINTED >120
12988	1966	987	12/31/06	STATEMENT	STATEMENT PRINTED >120
12989	3282	1416	12/31/06	STATEMENT	STATEMENT PRINTED 31-60

Note	Resp	Dateent	Timeent	Who
PRIMARY CLAIM PRINTED	UHC	01/14/09	16:07	SMW
PRIMARY CLAIM PRINTED	UHC	01/14/09	16:07	SMW
SECONDARY CLAIM PRINTED	UHC	01/14/09	16:08	SMW
SECONDARY CLAIM PRINTED	UHC	01/14/09	16:08	SMW
PRIMARY CLAIM PRINTED	UHC	01/14/09	16:08	SMW
PRIMARY CLAIM PRINTED	UHC2	01/14/09	16:08	SMW
PRIMARY CLAIM PRINTED	UHC2	01/14/09	16:08	SMW
PRIMARY CLAIM PRINTED	UHC2	01/14/09	16:08	SMW
PRIMARY CLAIM PRINTED	UNI6	01/14/09	16:09	SMW
PRIMARY CLAIM PRINTED	TRI2	01/14/09	16:09	SMW
PRIMARY CLAIM PRINTED	TRI2	01/14/09	16:09	SMW
PRIMARY CLAIM PRINTED	TRI2	01/14/09	16:09	SMW
PRIMARY CLAIM PRINTED	CIG1	01/14/09	16:09	SMW
PRIMARY CLAIM PRINTED	CIGN	02/18/09	18:36	KW
CLAIM RECEIPT PRINTED		02/18/09	18:36	KW
PRIMARY CLAIM PRINTED	CIGN	02/18/09	18:36	KW
CLAIM RECEIPT PRINTED		02/26/09	12:20	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED >120		12/31/06	12:32	SMW
STATEMENT PRINTED 31-60		12/31/06	12:32	SMW




Claims with No Payment Detail Report
Sorted by 'Claim'.

Patient	Claim Date	Claim Dateent	Claim Number	Provider	Procedure Amount
75	02/22/05	04/13/05	77	B	3,500.00
77	04/13/05	04/13/05	79	B	12,500.00
Total for: April					16,000.00
Grand Total for Report:					16,000.00




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Payment Amount	%	Adjustment or Writeoff Amount	%	Write off Date	Activity Dateent
0.00	0.0	-3,500.00	100.0	09/27/05	09/27/05
0.00	0.0	-12,500.00	100.0	12/31/06	05/14/09
0.00		-16,000.00			
0.00	0.0	-16,000.00	100.0		

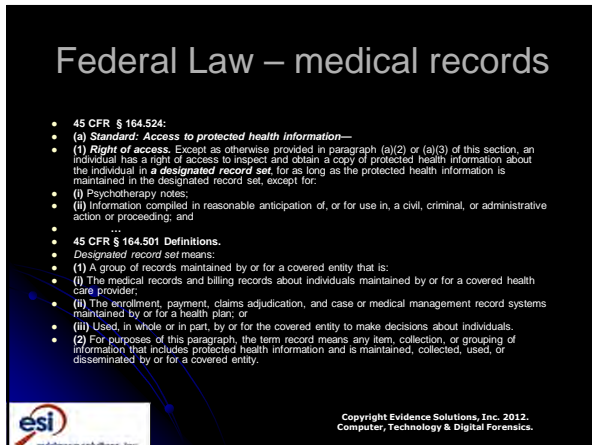


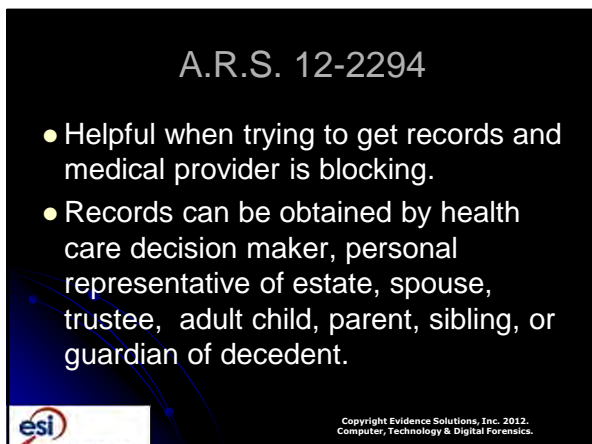
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Some hospital's view of what you should get:

Where is the Legal Health Record?

E.H.R. Systems

E.H.R. Content

Designated Record Set

LEGAL HEALTH RECORD

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What to Ask for?

- **Request for Production**
- **No. 1:** All information in your possession regarding your patient Jane Smith. This request is specifically intended to require production of information beyond what may be deemed the medical records or the "designated record set." In the event you maintain an electronic medical records system, this request for production is intended to require the production of every possible data set (or categories of data) that your electronic medical record system can provide. In the event you claim that information in your possession is privileged or work product, provide a privilege log specifying the privileged items.

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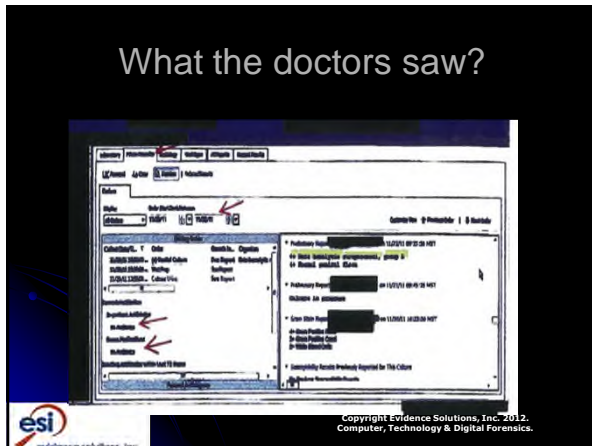
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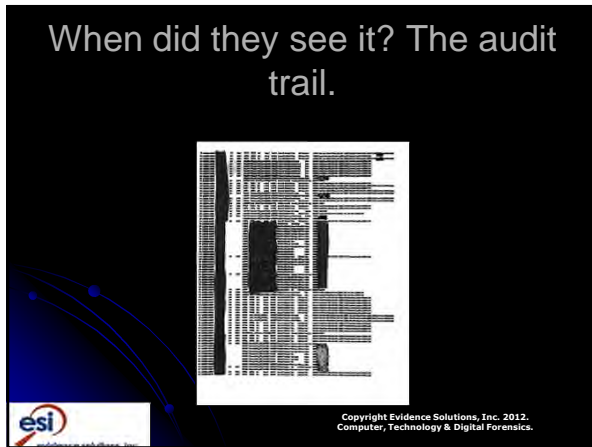
What to Ask for?

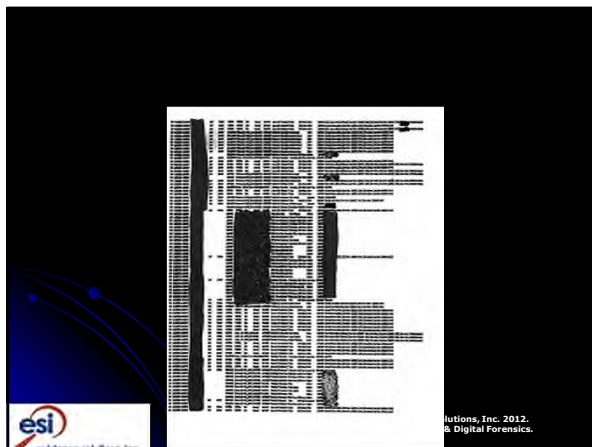
- **No. 2:** The print screen of Defendant's EMR computer system that provides the data sets that Defendant may select for printing of Plaintiff's medical records.
- **No. 3:** Any Room Activity Report, Detailed Room Activity Report, and/or any report documenting any visit by hospital personnel or health care providers to decedent/patient's room or that tracks the location and timing of decedent/patient in the hospital

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EMR: Causing Medical Errors

- Order entry errors
- Medication errors
- Communication errors
- Follow up errors
- System errors



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Sentinel event



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Sentinel event alert 42


“Incorrect or miscommunicated information entered into health IT systems may result in adverse events. In some cases, interfaces built into the technology contribute to the events.”



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Pi cases

- Template responses -- need a person behind the point and click
- May require independent IME to testify



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Organization

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Hope for the future?

HealthSouth Electronic Medical Record Definitions

The following terminology and definitions may be helpful when reviewing this medical record. Please contact your HealthSouth point of contact with any further questions.

Notes Section


- **Authentication Information** - includes Authentication ID and Authenticated date/time. The authentication status indicates whether the document has been signed by a provider with signature privileges. A provider who does not have signature privileges has submitted an unauthenticated document. A document becomes authenticated when a provider with signature privileges signs the document.
- **Performance Information** - includes Performed By and Performed date/time
- **Result Status** - the status of the document (for example, Workflow, Auth verified)
- **Review Information** - includes Reviewed By and Reviewed date/time
- **Signed Information** - includes Signed By and Signed date/time. Clinical Documents cannot have "sign" documents unless they do not have full signature privileges.

Medication Administration Section

- **Administered Date and Time** - The administered date and time (start and end)
- **Charted Date and Time** - The time the record was entered into the system
- **Medication Name** - The name of the order (signed order name)

Orders Section


- **Order Start Date/Time** - The date and time the order is administered to start
- **Order Date/Time** - The actual date and time of the original order
 - **Order Date/Time at order entry** - the date/time the SYSTEM entered the admission date. The "Entered By" Date/Time reflects the time the SYSTEM entered the order.
- **Order Status** - Status of the order in the system (for example, ordered, suspended)
 - The order entered with "suspend" indicates an inpatient. This is related to the lab interface indicating the order has been dispatched to the lab system. "Dispatch" also includes orders with an order action of the medication module record.
- **Equipment Status** - Status of the order in the equipment (for example, a laboratory culture with an order ID# of culture will have a "Acquired" status if in process until the order is received and stored within laboratory).



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Doctor's Company: ehr are causing medical errors


- **Analysis of EHR Contributing Factors in Medical Professional Liability Claims**
- **Drugs:** mistakes in patient receiving correct drug because of autofill mistakes. Flomax instead of Flonase. Mistake in failing to alert of drug interactions. Mistakes in dosage.



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Doctor's Company: ehr are causing medical errors


- **Analysis of EHR Contributing Factors in Medical Professional Liability Claims**
- **Drop Down Menu Limitations:** not including enough information, including who present during procedures.
- **Copy and Paste:** History and physical copied and pasted without including new information. TB child



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Doctor's Company: ehr are causing medical errors


- **Analysis of EHR Contributing Factors in Medical Professional Liability Claims**
- **Lack of Physician training:** Not seeing available data, including radiology. OB no see U/S; GYN no see recent CT.
- **Alerts:** Failure of system to transmit data to caregivers, including critical value alerts



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Doctor's Company: ehr are causing medical errors

- **Analysis of EHR Contributing Factors in Medical Professional Liability Claims**
- **Data Entry:** wrong patient, wrong test, wrong data.




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What to Ask For

Meta Data
Inside The System
Outside The System


Hosted Locally
Cloud Based



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Each System is Unique


Data Dictionaries
Exports of Data
Reviewing Other Relevant Data – HIPAA
Issues
Copy and Paste
Templates




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Manipulation

Back Charting
Changing Dates
New Data Entered Later
Editing of the Database




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Email Case Example

- Case Background:
 - Intellectual property case. The two parties were fighting over a patent.
 - Some of the evidence supplied by the plaintiff was email.



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From: "John C Plaintiff" <JohnP@Lost-Tech.com>
To: <Mark@manufacturer.com>
Cc: "Robert Z Defendant" <Robert@LostTechnologies.com>
Sent: Friday, March 03, 2006 3:35 PM
Attach: Image Of Product.pdf
Subject: Emailing: Image Of Product.pdf

Mark,
Please find attached a picture of our new product that we discussed.

Thanks,
John
President
Lost Tech, Inc.

www.LostTechnologies.com

ISO 9001:2000 * ISO 14001 * ISO18001 * UL Listed

E-mail: JohnP@LostTechnologies.com

The message is ready to be sent with the following file or link attachments: Image Of Product.pdf



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Electronic Version

From: "John C Plaintiff" <JohnP@Lost-Tech.com>
To: "<Mark@manufacturer.com>" <Mark@manufacturer.com>
Cc: "Robert Z Defendant" <Robert@Lost-Tech.com>
Sent: Friday, March 03, 2006 3:35 PM
Attach: Image Of Product.pdf
Subject: Emailing: Image of Product.pdf

Mark,
Please find attached a picture of our new product that we discussed.
John


Lost Tech, Inc.
www.LostTechnologies.com
ISO 9001:2000 * ISO 14001 * ISO18001 * UL Listed
E-mail: JohnP@LostTechnologies.com
The message is ready to be sent with the following file or link attachments: Image Of Product.pdf



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Electronic Metadata


"MS Exchange Server version 6.5.7638.1"
Emailing: Image of Product.pdf
Return-path: <>
From: "John C Plaintiff" <JohnP@Lost-Tech.com>
To: "<Mark@manufacturer.com>" <Mark@manufacturer.com>
Cc: "Robert Z Defendant" <Robert@Lost-Tech.com>



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Second Email


From: "Robert Z Defendant" <Robert@LostTechnologies.com>
To: robertzdefendant@yahoo.com;
Sent: Thursday, March 30, 2006 9:29 AM
Subject: FW: Check This out?
funny mpeg



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Second Email Metadata

From: Robert Defendant
To: robertzdefendant@yahoo.com
Return-Path: < Robert@LostTechnologies.com>
Subject: FW: Check This out?
Produced By Microsoft Exchange V6.0.6249.0
Date: Thu, 30 Mar 2006 08:29:26 -0800
From: "Robert Defendant" <Robert@LostTechnologies.com>
To: <robertzdefendant@yahoo.com>

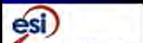


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Third Example Email Body

From: <Jose McCormick>
To: <"John C Plaintiff">
Date: Monday, October 02, 2006 1:14 PM
Subject: new product status
CC: <Mrs Plaintiff>

John,
We've started on new product. It isn't perfect yet.
Jose



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