



Evidence Solutions, Inc.

New Jersey Association for Justice – Education Foundation

Digital Evidence Section

Present:

EHR Audit Trail Forensics:

Electronic Medical Record (EMR) / Electronic Health Record (EHR) Forensics

May 9, 2018

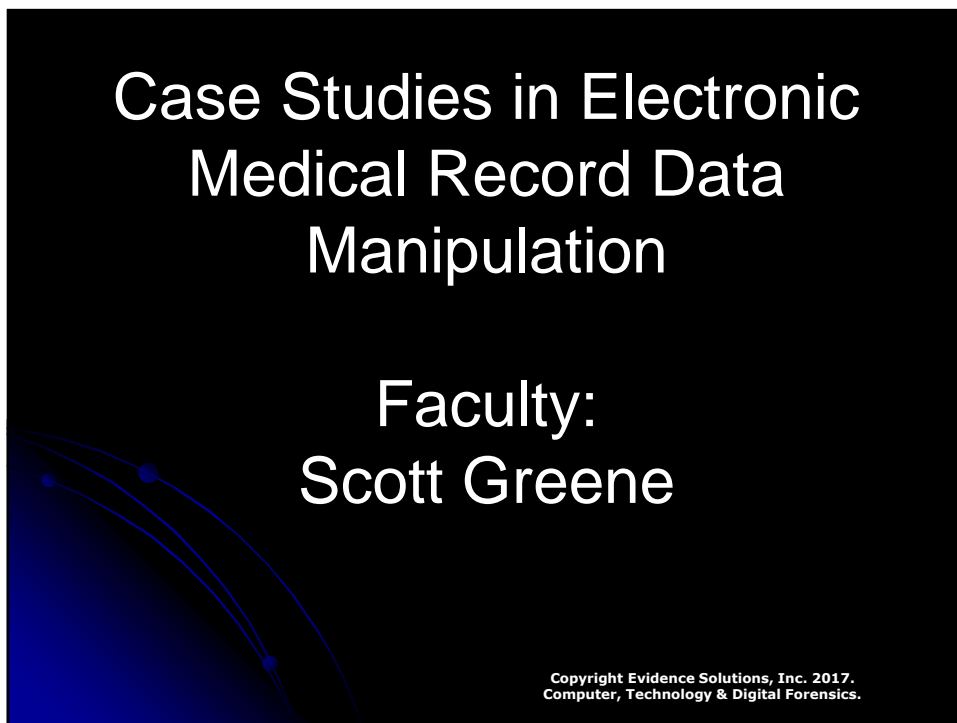
Presented by:

Scott Greene, SCFE, CEO
Evidence Solutions, Inc.

A Digital Forensics Firm

520-512-5001
866-795-7166

Scott@EvidenceSolutions.com



1



2

Scott Greene

- Has been doing computer consulting for over 35 years.
- Performing:
 - Custom programming
 - Design and optimization
 - Database administration
 - Network and workstation general support
- For:
 - Service
 - Retail
 - Hospitality
 - Legal
 - Manufacturing
 - Medical

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

3

How am I going to get there?

- A Civil Case: Medical Billing
- With a few other things thrown in...
 - EMR Forensics For Instance

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

4

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.

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

5

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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

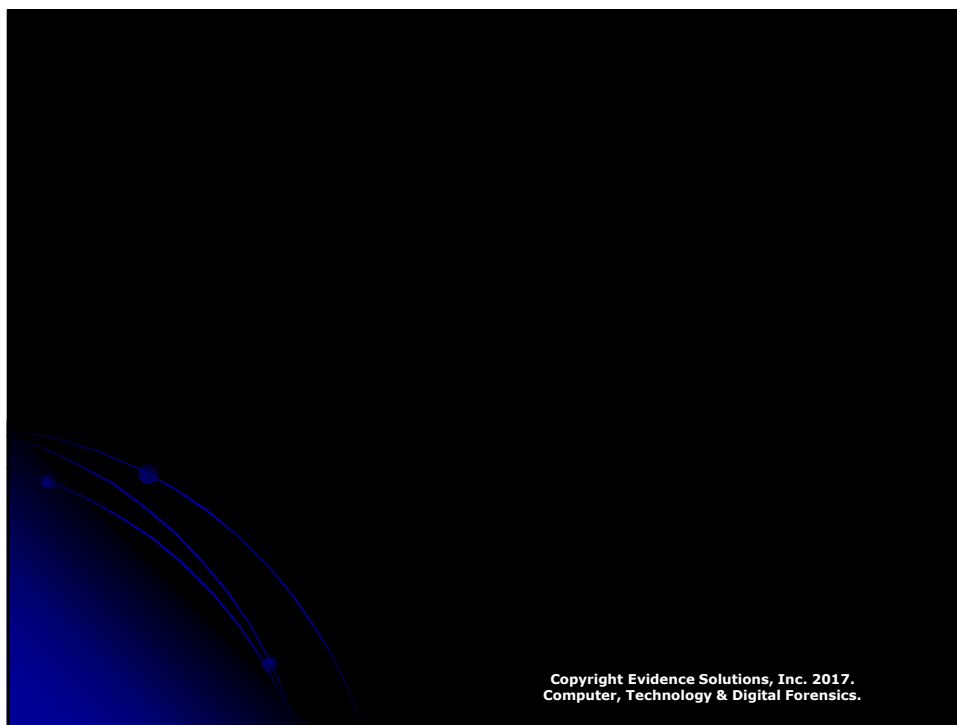
6

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.

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

7



Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

8

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.

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

9

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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

10

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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

11

Scott's Special Master Tasks

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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

12

Scott's Special Master Tasks

- Unable to get the software running we decided to look at the data.

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

13

The first report from the
database.

[claction1_package.pdf](#)

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

14

Recno	Claim	Idnum	Date	Type	Note	Resp	Dateent	Timeent	Whoentered
12966	3167	1279	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	DHC	01/14/09	16:07	SMW
12967	3216	1279	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	DHC	01/14/09	16:07	SMW
12968	1249	774	01/14/09	SECONDARY	SECONDARY CLAIM PRINTED	DHC	01/14/09	16:08	SMW
12969	1246	774	01/14/09	SECONDARY	SECONDARY CLAIM PRINTED	DHC	01/14/09	16:08	SMW
12970	1541	845	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	DHC	01/14/09	16:08	SMW
12971	3221	1369	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	DHC2	01/14/09	16:08	SMW
12972	3084	1369	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	DHC2	01/14/09	16:08	SMW
12973	1778	968	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	DHC2	01/14/09	16:08	SMW
12974	1333	818	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	DN16	01/14/09	16:09	SMW
12975	2849	1295	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	TR12	01/14/09	16:09	SMW
12976	2858	1304	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	TR12	01/14/09	16:09	SMW
12977	1392	830	01/14/09	PRIMARY	PRIMARY CLAIM PRINTED	C161	01/14/09	16:09	SMW
12978	1834	485	02/18/09	PRIMARY	PRIMARY CLAIM PRINTED	C16N	02/18/09	18:36	KW
12979	1692	485	02/18/09	RECEIPT	CLAIM RECEIPT PRINTED	C16N	02/18/09	18:36	KW
12980	1692	485	02/18/09	PRIMARY	PRIMARY CLAIM PRINTED	C16N	02/18/09	18:36	KW
12981	2201	878	02/26/09	RECEIPT	CLAIM RECEIPT PRINTED		02/26/09	22:20	SMW
12982	280	231	12/31/06	STATEMENT	STATEMENT PRINTED >120		12/31/06	22:32	SMW
12983	283	243	12/31/06	STATEMENT	STATEMENT PRINTED >120		12/31/06	22:32	SMW
12984	272	209	12/31/06	STATEMENT	STATEMENT PRINTED >120		12/31/06	22:32	SMW
12985	1799	980	12/31/06	STATEMENT	STATEMENT PRINTED >120		12/31/06	22:32	SMW
12986	1871	980	12/31/06	STATEMENT	STATEMENT PRINTED >120		12/31/06	22:32	SMW
12987	1897	987	12/31/06	STATEMENT	STATEMENT PRINTED >120		12/31/06	22:32	SMW
12988	1966	987	12/31/06	STATEMENT	STATEMENT PRINTED >120		12/31/06	22:32	SMW
12989	3282	1416	12/31/06	STATEMENT	STATEMENT PRINTED 31-60		12/31/06	22:32	SMW

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

15

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

16

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	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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

17

Claims Without Payment

[nopaymentclaims prov B 0 payment.pdf](#)

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

18

Claims with No Payment Detail Report (M
 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

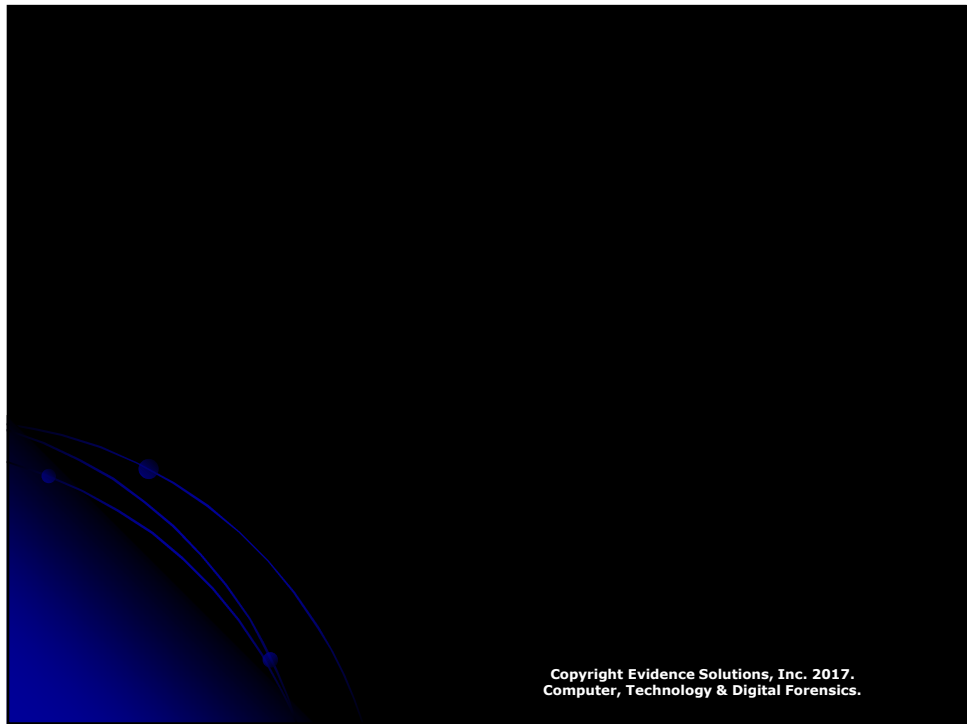
Copyright Evidence Solutions, Inc. 2017.
 Computer, Technology & Digital Forensics.

19

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		

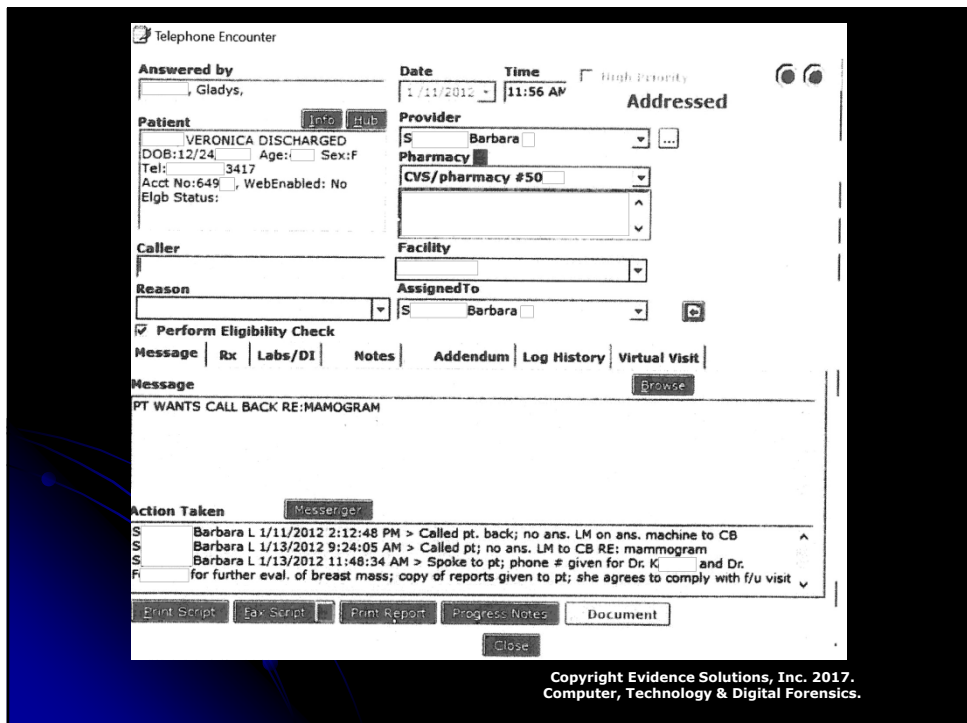
Copyright Evidence Solutions, Inc. 2017.
 Computer, Technology & Digital Forensics.

20



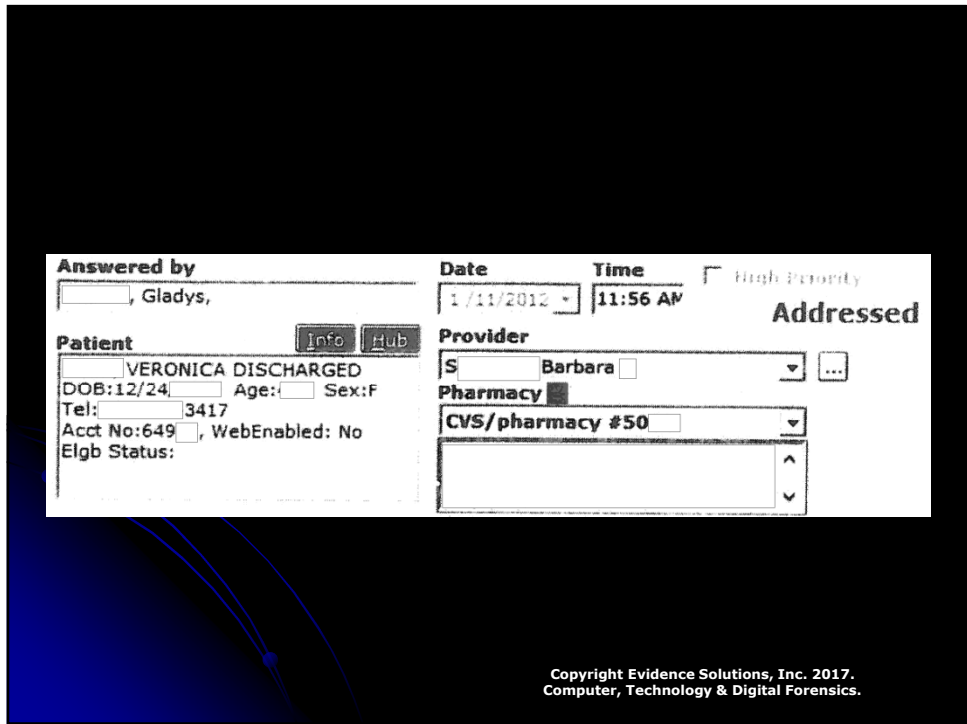
Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

21

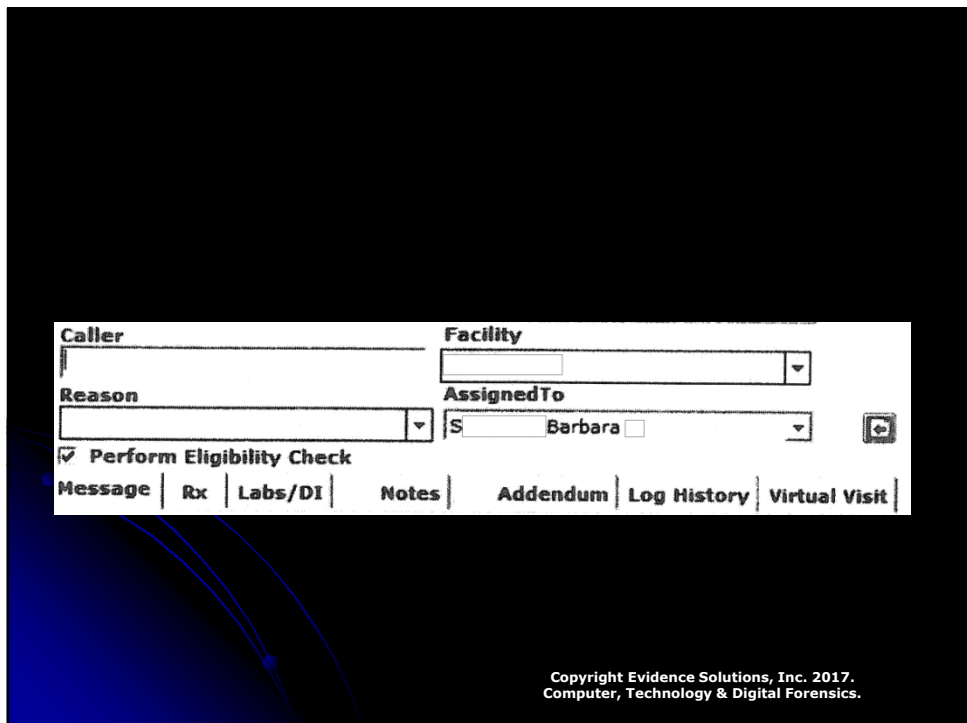


Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

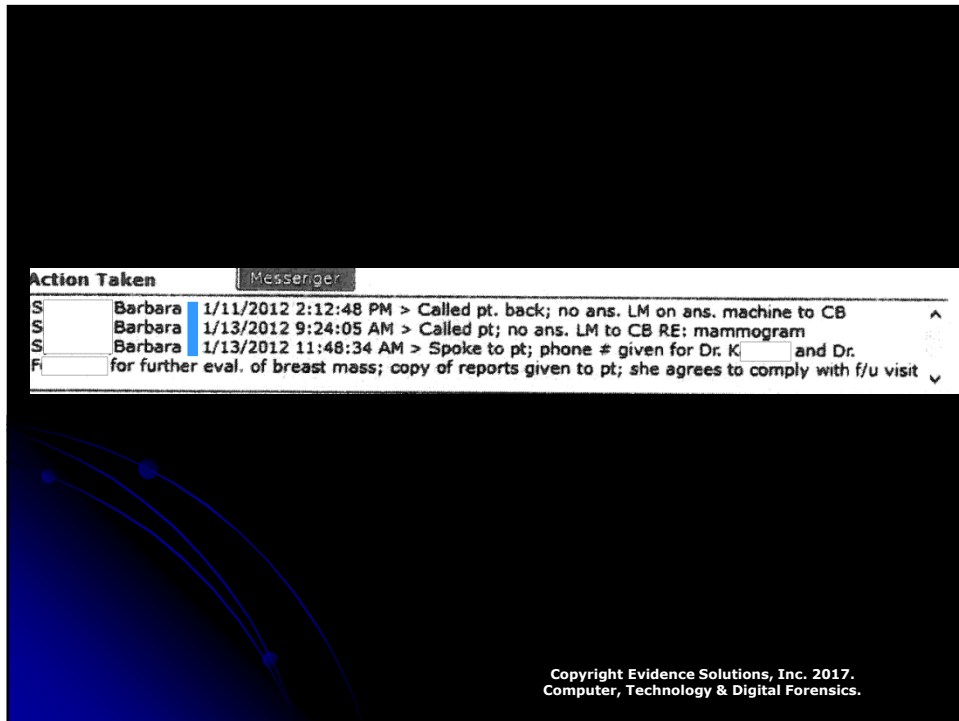
22



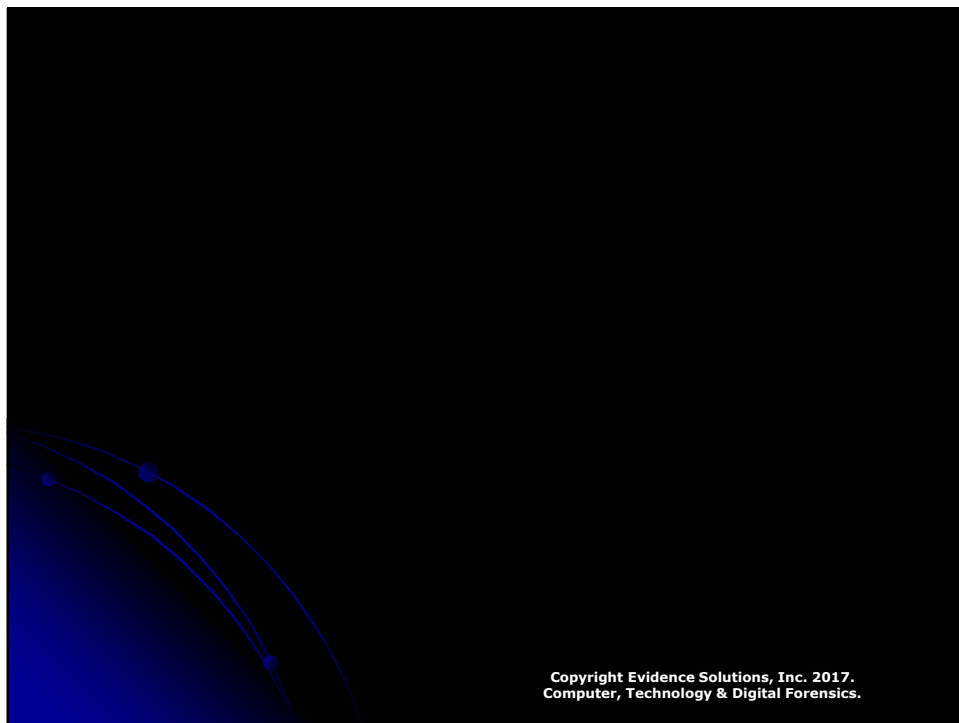
23



24



25



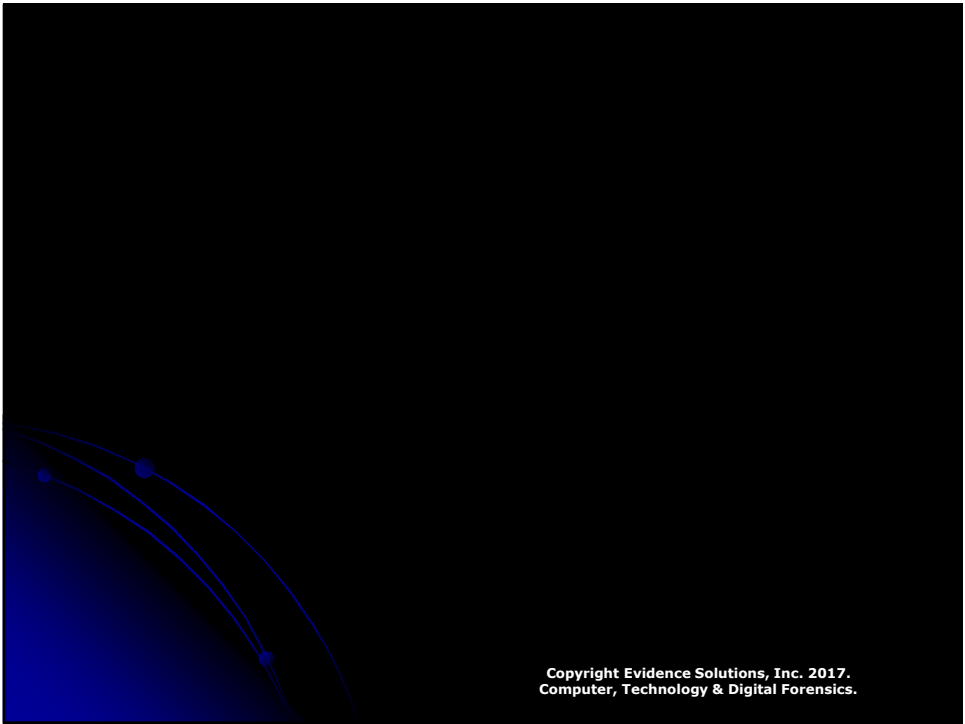
26

EMR Data What to Look For

5769395		COF IP NURSING ORDERS ONE DAY [120100760]	MR_REPORTS
5769395		COF IP NURSING ORDERS ONE DAY [120100760]	MR_REPORTS
5769395		FLW ORD ACKNOWLEDGEMENT [120101031]	MR_REPORTS
5769395		Weston All Report [120101450]	MR_REPORTS
5769395	HOSPITAL ENCOUNTER	05/11/2012	LOW_RELATED_ENCOUNTERS
5769395		FLW IP ENCOUNTER REPORT [120100378]	MR_REPORTS
5769395		REGISTRATION REPORT (HTML) [90051003]	MR_REPORTS
5769395			MR_PATIENT_SELECT
	HOSP ENC 5/11/2012		Clinical Notes
	HOSP ENC 5/11/2012		Inpatient MAR
	N/A		Allergies
	HOSP ENC 5/11/2012		Encounter
	HISTORY 5/12/2012		History
	N/A		Chart Review Imaging tab
	N/A		Chart Review Encounters tab
	N/A	Weston All Report [4045002]	Report
	HOSP ENC 5/11/2012		Inpatient MAR

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

29



Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

30

More EMR Data

Time	Event	MRN	Patient Name	Facility	Nurse Unit	Event Type	Source	Timestamp
11/20/2011 16:38:51 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:38:51 EST
11/20/2011 16:39:07 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:39:07 EST
11/20/2011 16:39:07 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:39:07 EST
11/20/2011 16:39:08 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:39:08 EST
11/20/2011 16:41:58 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:41:58 EST
11/20/2011 16:42:05 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:42:05 EST
11/20/2011 16:42:05 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:42:05 EST
11/20/2011 16:42:06 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:42:06 EST
11/20/2011 16:42:06 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:42:06 EST
11/20/2011 16:42:07 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:42:07 EST
11/20/2011 16:44:05 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:44:05 EST
11/20/2011 16:44:06 EST	EMR	ESI936273	MARY	SMY	EMRM	EMR	ESI936273	11/20/2011 16:44:06 EST

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

31

rank	TIMESTAMP	MRN	PATIENT NAME	FACILITY	NURSE_UNIT
	0 11/20/2011 16:38:51 EST	ESI936273	MARY	SMY	EMRM
	1 11/20/2011 16:39:07 EST	ESI936273	MARY	SMY	EMRM
	2 11/20/2011 16:39:07 EST	ESI936273	MARY	SMY	EMRM
	3 11/20/2011 16:39:08 EST	ESI936273	MARY		
	4 11/20/2011 16:41:58 EST	ESI936273	MARY	SMY	EMRM
	5 11/20/2011 16:42:05 EST	ESI936273	MARY	SMY	EMRM
	6 11/20/2011 16:42:05 EST	ESI936273	MARY	SMY	EMRM
	7 11/20/2011 16:42:05 EST	ESI936273	MARY	SMY	EMRM
	8 11/20/2011 16:42:06 EST	ESI936273	MARY	SMY	EMRM
	9 11/20/2011 16:42:06 EST	ESI936273	MARY		
	10 11/20/2011 16:42:06 EST	ESI936273	MARY	SMY	EMRM
	11 11/20/2011 16:42:07 EST	ESI936273	MARY	SMY	EMRM
	12 11/20/2011 16:44:05 EST	ESI936273	MARY	SMY	EMRM
	13 11/20/2011 16:44:06 EST	ESI936273	MARY	SMY	EMRM

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

32

USER_NAME	PRSNL_NAME	ROLE	DEVICE_NAME	CITRIX_SERVER
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
SYSTEM	SYSTEM	DBA	ahtuaz2	NO INFO
SYSTEM	SYSTEM	DBA	ahtuaz2	NO INFO
RJOHNSON1	Ryan	AHTU_PathNet: Medical Technologist	BA108588	AHTUAZCTX19
SYSTEM	SYSTEM	DBA	ahtuaz2	NO INFO
SYSTEM	SYSTEM	DBA	ahtuaz2	NO INFO
SYSTEM	SYSTEM	DBA	ahtuaz2	NO INFO
SYSTEM	SYSTEM	DBA	ahtuaz2	NO INFO

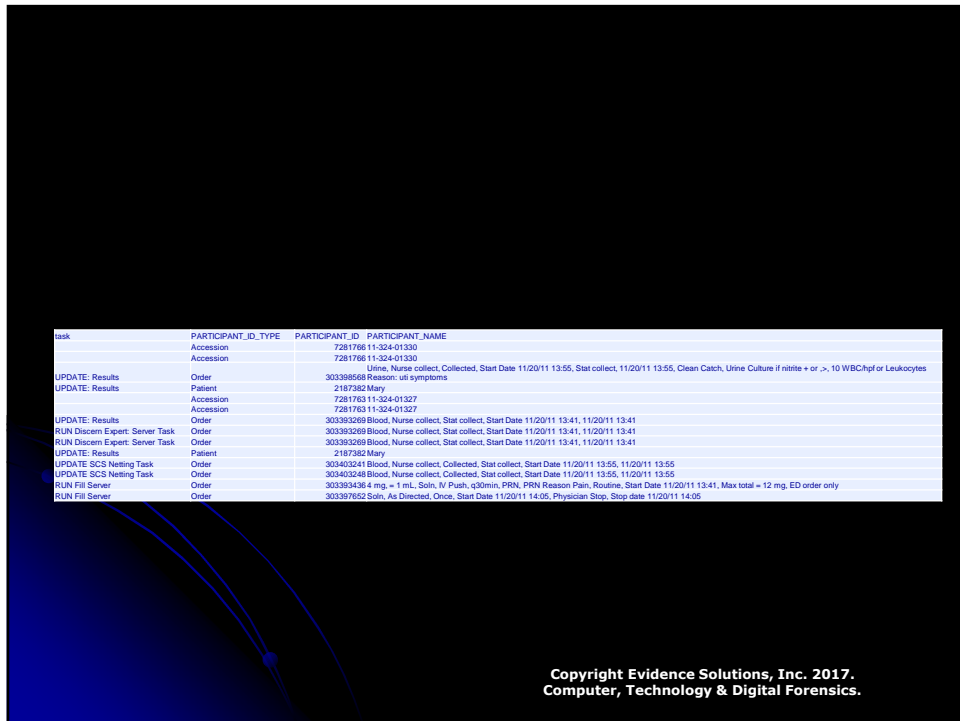
Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

33

APPLICATION	EVENT_NAME	EVENT_TYPE
PathNet General Lab: Accession Result Entry	Lab Common Inquiry	View Results
PathNet General Lab: Accession Result Entry	Lab Common Modify	Maintain Results
PathNet General Lab: Accession Result Entry	Maintain Order	Tasks
PathNet General Lab: Accession Result Entry	Maintain Clinical Events	Write/Update Results
PathNet General Lab: Accession Result Entry	Lab Common Inquiry	View Results
PathNet General Lab: Accession Result Entry	Lab Common Modify	Maintain Results
PathNet General Lab: Accession Result Entry	Maintain Order	Tasks
Servers and Services: Discern Expert Server	View Orders	Modify Details
Servers and Services: Discern Expert Server	View Orders	Modify Details
PathNet General Lab: Accession Result Entry	Maintain Clinical Events	Write/Update Results
Server: Orm Order Write	Maintain Order	Tasks
Server: Orm Order Write	Maintain Order	Tasks
Server: Inbound Dispense Server	Maintain Order	Medication
Server: Inbound Dispense Server	Maintain Order	Medication

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

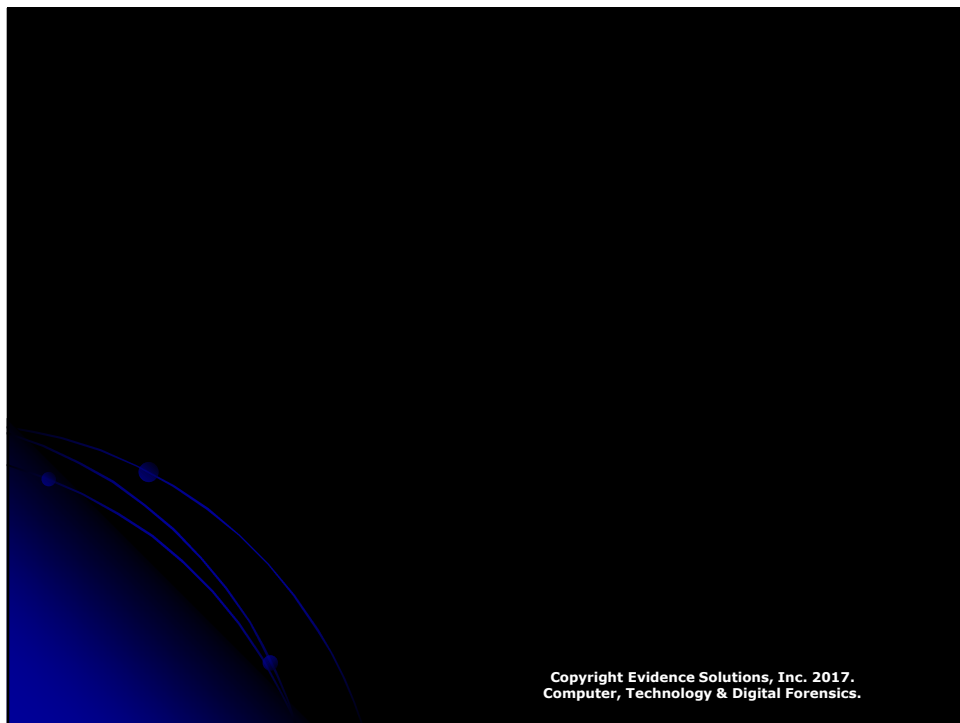
34



task	PARTICIPANT_ID_TYPE	PARTICIPANT_ID	PARTICIPANT_NAME
Accession		7281766 11-324-01330	
Accession		7281766 11-324-01330	
UPDATE: Results	Order		Urine, Nurse collect, Collected, Start Date 11/20/11 13:55, Stat collect, 11/20/11 13:55, Clean Catch, Urine Culture if nitite + or -, 10 WBC/hpf or Leukocytes
UPDATE: Results	Patient		303395658 Reason: uti symptoms
		2187382 Mary	
Accession		7281763 11-324-01327	
Accession		7281763 11-324-01327	
UPDATE: Results	Order		303393269 Blood, Nurse collect, Stat collect, Start Date 11/20/11 13:41, 11/20/11 13:41
RUN Discern Expert: Server Task	Order		303393269 Blood, Nurse collect, Stat collect, Start Date 11/20/11 13:41, 11/20/11 13:41
RUN Discern Expert: Server Task	Order		303393269 Blood, Nurse collect, Stat collect, Start Date 11/20/11 13:41, 11/20/11 13:41
UPDATE: Results	Patient		2187382 Mary
UPDATE SCS Netting Task	Order		303403241 Blood, Nurse collect, Collected, Stat collect, Start Date 11/20/11 13:55, 11/20/11 13:55
UPDATE SCS Netting Task	Order		303403248 Blood, Nurse collect, Collected, Stat collect, Start Date 11/20/11 13:55, 11/20/11 13:55
RUN Fill Server	Order		303393436 4 mg, = 1 ml, Soln, IV Push, q30min, PRN, PRN Reason Pain, Routine, Start Date 11/20/11 13:41, Max total = 12 mg, ED order only
RUN Fill Server	Order		303397652 Soln, As Directed, Once, Start Date 11/20/11 14:05, Physician Stop, Stop date 11/20/11 14:05

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

35



task	PARTICIPANT_ID_TYPE	PARTICIPANT_ID	PARTICIPANT_NAME
Accession		7281766 11-324-01330	
Accession		7281766 11-324-01330	
UPDATE: Results	Order		Urine, Nurse collect, Collected, Start Date 11/20/11 13:55, Stat collect, 11/20/11 13:55, Clean Catch, Urine Culture if nitite + or -, 10 WBC/hpf or Leukocytes
UPDATE: Results	Patient		303395658 Reason: uti symptoms
		2187382 Mary	
Accession		7281763 11-324-01327	
Accession		7281763 11-324-01327	
UPDATE: Results	Order		303393269 Blood, Nurse collect, Stat collect, Start Date 11/20/11 13:41, 11/20/11 13:41
RUN Discern Expert: Server Task	Order		303393269 Blood, Nurse collect, Stat collect, Start Date 11/20/11 13:41, 11/20/11 13:41
RUN Discern Expert: Server Task	Order		303393269 Blood, Nurse collect, Stat collect, Start Date 11/20/11 13:41, 11/20/11 13:41
UPDATE: Results	Patient		2187382 Mary
UPDATE SCS Netting Task	Order		303403241 Blood, Nurse collect, Collected, Stat collect, Start Date 11/20/11 13:55, 11/20/11 13:55
UPDATE SCS Netting Task	Order		303403248 Blood, Nurse collect, Collected, Stat collect, Start Date 11/20/11 13:55, 11/20/11 13:55
RUN Fill Server	Order		303393436 4 mg, = 1 ml, Soln, IV Push, q30min, PRN, PRN Reason Pain, Routine, Start Date 11/20/11 13:41, Max total = 12 mg, ED order only
RUN Fill Server	Order		303397652 Soln, As Directed, Once, Start Date 11/20/11 14:05, Physician Stop, Stop date 11/20/11 14:05

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

36

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.”

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

37

What to Ask for?

- **No. 1**: 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.

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

38

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.

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

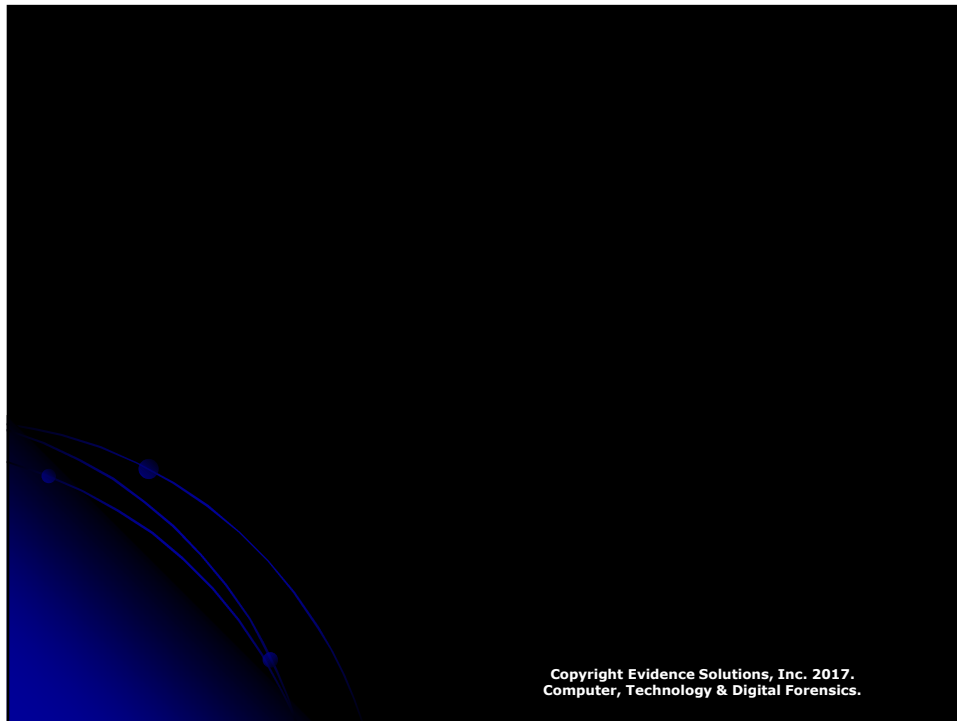
39

What to Ask for?

- **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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

40



41

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. GYN not seeing recent CT.
- **Alerts:** Failure of system to transmit data to caregivers, including critical value alerts

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

42

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.

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

43

What to Ask For

Meta Data
Inside The System
Outside The System

Hosted Locally
Cloud Based

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

44

Each System is Unique

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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

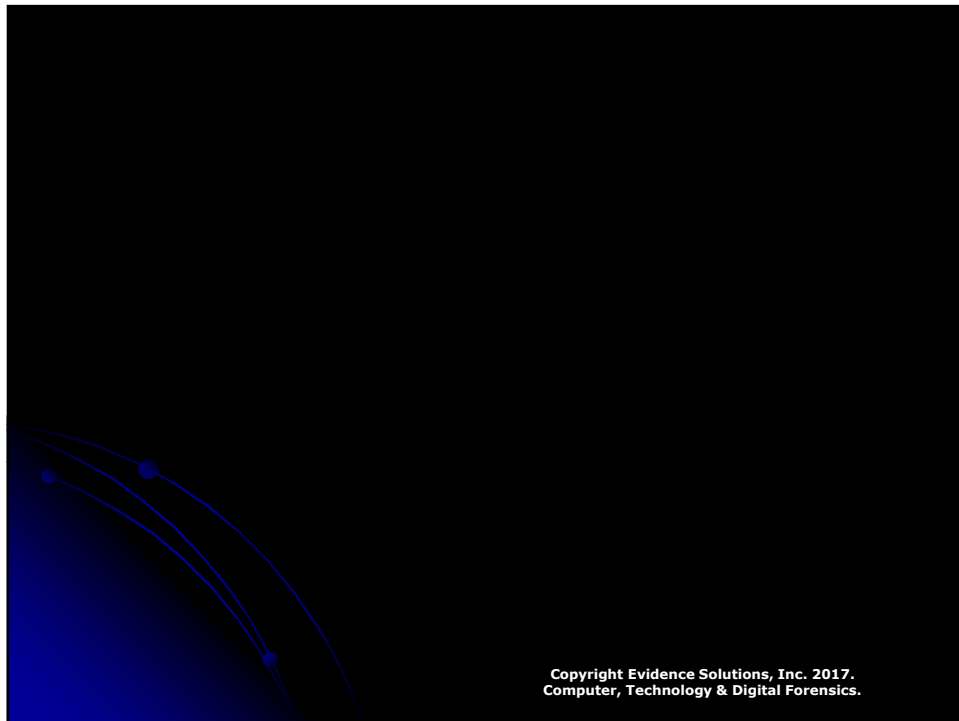
45

Manipulation

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

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

46



47

What to do / How to do it

- Meta Data is Everywhere
 - – it can tell a much different story than the data
- How do you know when to call for help?
 - - upfront a consultant can steer a case in the right direction
 - - data that looks suspicious

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

48

What to do / How to do it

- Are there things that should signal suspicion that data has been altered?
 - If it is too good to be true, it probably is.
- Can you do a quick review of data produced to advise on what deeper review is possible?
 - Yes

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

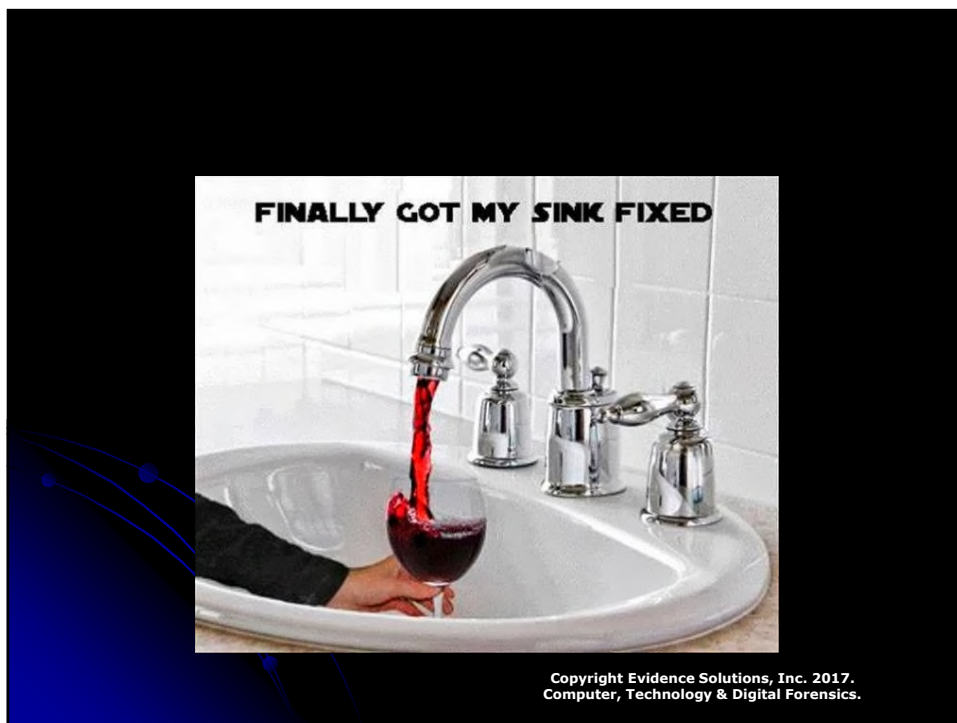
49

What to do / How to do it

- Do you have some practical tips for us in writing discovery requests?
 - Yes I have templates that can be used for all sorts of discovery requests

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

50



51

Contact Information

Scott Greene
of
Evidence Solutions, Inc.
866-795-7166
Scott@EvidenceSolutions.com

Copyright Evidence Solutions, Inc. 2017.
Computer, Technology & Digital Forensics.

The contact information is centered on a black background with blue decorative lines on the left side.

52



Biography

Scott Greene

Scott is the CEO of Evidence Solutions, Inc. Scott Greene has been doing Data Recovery, Computer, Technology and Digital Forensics, and EDiscovery work for over 35 years.

Directly out of high school, Scott went to work for IBM as a programmer.

In 2008 he created Evidence Solutions, Inc., a full service Computer, Technology & Digital Forensics firm, from the Technology Forensics department of Great Scott Enterprises.

Scott has developed and presented strategic planning seminars, taught numerous classes in database design & optimization, cyber security and technology forensics. Scott's extensive knowledge draws clients to him from all over the United States as well as Internationally for consulting and expert witness services in the field of Technology, Computer & Digital Forensics. His extensive and diverse experience allows him to be an expert in many facets of computer & digital technology.

Scott and Evidence Solutions have been involved in Civil & Criminal Cases, for Plaintiff, Defense and Special Master in Justice, Superior & District Courts as well as Internationally.

He is a sought after speaker and educator and travels throughout the country presenting to local, regional, national and International organizations.

Computer, Technology, and Digital Forensics for Over 35 Years.

www.EvidenceSolutions.com

Scott@EvidenceSolutions.com