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Patient Privacy Monitoring with Splunk

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Introduction

The Vancouver Clinic

- Serving Southwest Washington since 1939
- Locally owned and governed
- Comprehensive and high quality patient care

My role as a Systems Analyst

- Integration of medical systems
- Improvement of business processes



Agenda

- Who should be interested in patient privacy monitoring?
- Why is patient privacy monitoring Important?
- What are some of the options?
- How has The Vancouver Clinic approached privacy monitoring?
- Takeaways

Who should be interested in patient privacy monitoring?

Everyone!



- HIPAA
(Health Insurance Portability and Accountability Act)
- HITECH Act
(Health Information Technology for Economic and Clinical Health)
- Other state/federal regulations

- Risk of identity theft
- Exposure of sensitive personal data

Why is patient privacy monitoring important?

Because the Consequences Are Very Costly

Los Angeles Times | ARTICLE COLLECTIONS

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Hospital to punish snooping on Spears

UCLA moves to fire at least 13 for looking at the celebrity's records.

Los Angeles Times | ARTICLE COLLECTIONS

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Ex-Cedars-Sinai worker gets 4 years for stealing records

FierceHealthcare

Published on FierceHealthcare (<http://www.fiercehealthcare.com>)

Kaiser fined \$250,000 for staff snooping into octuplet mom's records

Los Angeles Times | ARTICLE COLLECTIONS

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UCLA hospitals to pay \$865,500 for breaches of celebrities' privacy

Healthcare IT News

Published on Healthcare IT News (<http://www.healthcareitnews.com>)

[Home](#) > Six fired for keeping up with Kardashian

Six fired for keeping up with Kardashian

Posted on Jul 15, 2013

What are some of the options?

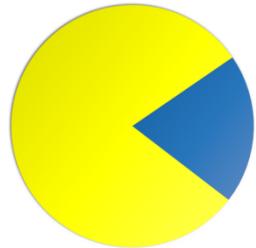
The Bad, The Worse and the Ugly...

Third-party vendors



- Expensive
- You still do 80-90% of the work
- At the mercy of the vendor's time table

Traditional reporting tools



- % of charts resembling Pac-Man
- % of charts not resembling Pac-Man

- Requires a dedicated report writing team
- Steep learning curve
- Expensive platforms

Canned application reports



- Siloed reports per application
- Reports you want may not exist or can't be run
- Limited reporting capabilities

...or the Good!



- One interface to search them all...
- Easy to get the data in
- Searches can be created quickly
- Versatile



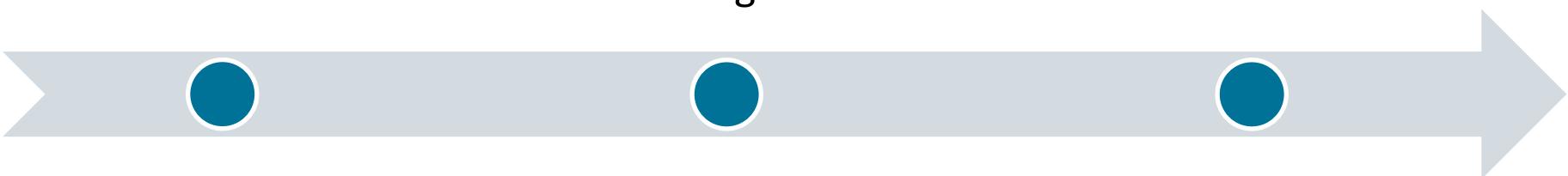
The Vancouver Clinic's approach to privacy monitoring

Timeline of Events

2010
Splunk for IT monitoring

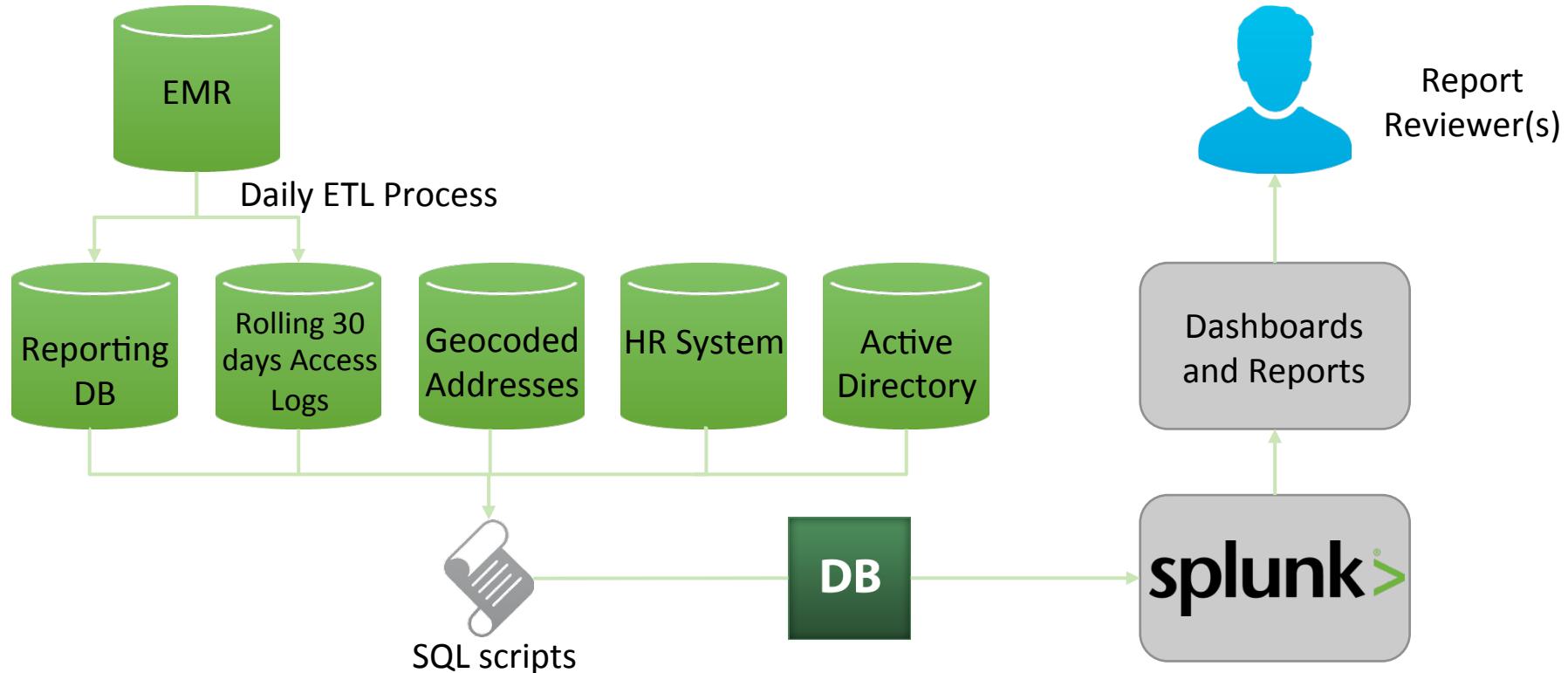
Jan – Apr 2013
Evaluated privacy monitoring vendors

May 2013
Switched to Splunk

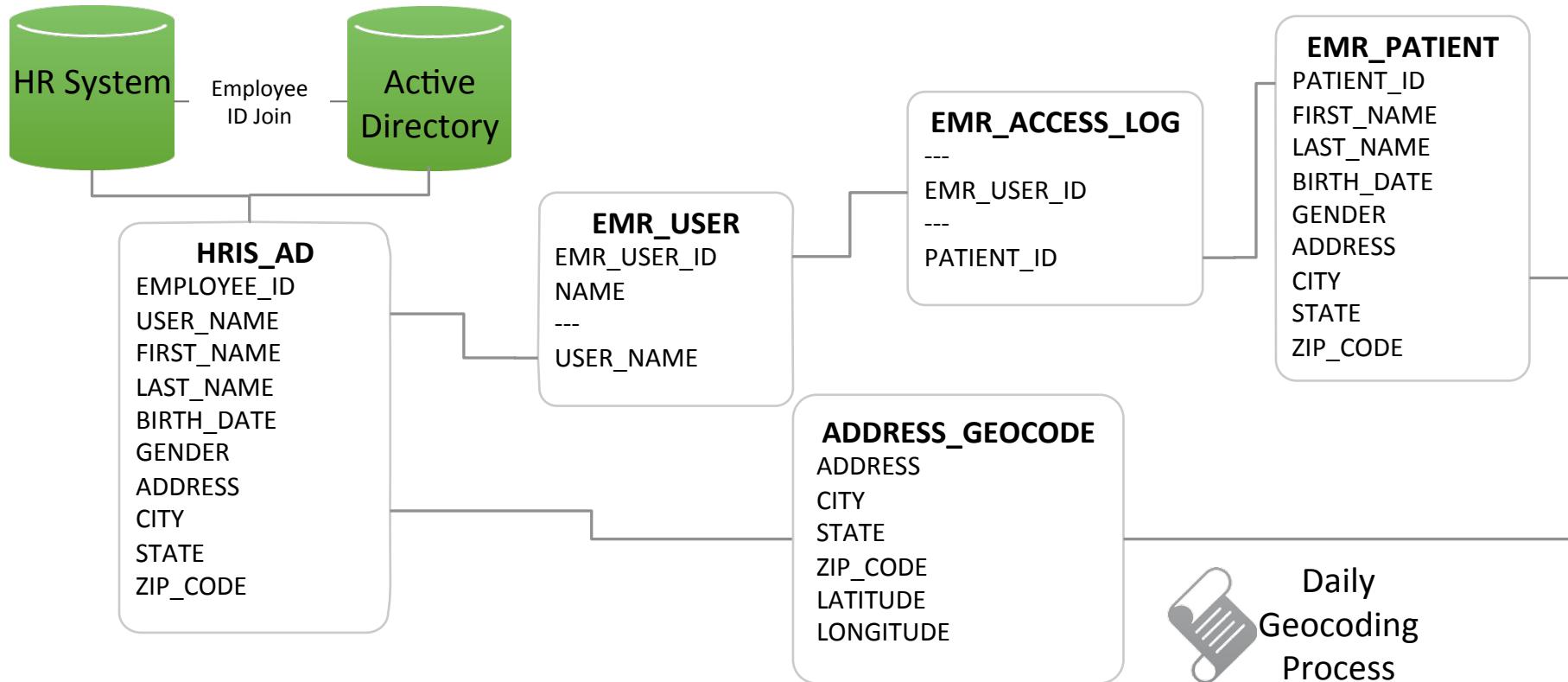


- Server & workstation logs
 - Network infrastructure
 - Application logs
- Steep upfront and on-going costs
 - Many billed as turn-key solutions, but were not
 - Timelines to completion were too high
 - We would still be doing 80-90% of the work!
- Data in Splunk within two weeks
 - Multiple reports with real data
 - Ability to produce reports that many vendors could not provide

Process Overview



Implementation



Reports

Employee viewing:

- VIP
- Self
- Neighbor
 - Offline geocoded all employee and patient addresses
 - <http://www.datasciencetoolkit.org/>
- Patient at same address
- Employee
 - Employee viewing manager
 - Manager viewing direct report
 - Employee viewing co-worker

Snapshot View of All Reports

splunk > App: Vigilance >

Search Dashboards Access Reports Diagnostic Reports

Davin Studer Messages Settings Activity Help

Vigilance Dashboard

Employee Looking at Self

date employee_name employee_username department_position employee_address_line_1 patient_address_line_1 patient_mrn_id patient_name patient_birth_date viewcount

1m ago

Employee Patient address the same

date employee_name patient_name patient_mrn_id employee_birth_date patient_birth_date employee_address_line_1 patient_address_line_1 department_position total

1m ago

+ prev 1 2 3 4 5 6 7 8 9 10 next »

Employee Address is close to Patient

date employee_name department_position emp_add pat_add dist_meters patient_mrn_id patient_name metric_name audactn patient_employer_name

* prev 1 2 3 next »

Loading - 35%

Employee Looking at VIP

date employee_name employee_username department_position employee_address_line_1 patient_address_line_1 patient_mrn_id patient_name patient_birth_date patient_restricted_yn viewcount

1m ago

* prev 1 2 3 4 5 6 7 8 next »

Employee Looking at Employee

date employee_name employee_username department_position total patient_name patient_mrn_id

1m ago

* prev 1 2 3 4 5 6 7 8 9 10 next »

Deep Dive Investigation

splunk > App: Vigilance

Search Dashboards Access Reports Diagnostic Reports

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Vigilance

Vigilance Search

Employee ID: * Employee Username: dstuder Patient Last Name: zztest Patient MRN: * Access Metric: All Year to date

Epic Activity

Metric Top 10

Top 10 MRN

Top 10 UserName

Vigilance Search

access_time	employee_id	employee_username	employee_first_name	employee_last_name	patient_mrn_id	patient_first_name	patient_last_name	metric_name	workstation_id	mnemonic1	mnemonic2	mnemonic3	mnemonic4
2015-01-01 06:27:31.000	73479	dstuder	davin	studer	555742	nancy	zztest	mr_patient_select	wsgeneric	audactn=view			
2015-01-01 06:27:31.000	73479	dstuder	davin	studer	555742	nancy	zztest	mr_snapshot	wsgeneric	audactn=view			
2015-01-01 06:27:34.000	73479	dstuder	davin	studer	555742	nancy	zztest	mr_review_encounter	wsgeneric	audactn=view			
2015-01-01 06:27:36.000	73479	dstuder	davin	studer	555742	nancy	zztest	mr_review_media	wsgeneric	audactn=view			
2015-01-01 06:27:42.000	73479	dstuder	davin	studer	555742	nancy	zztest	mr_scan	wsgeneric	audactn=view			
2015-01-01 06:27:47.000	73479	dstuder	davin	studer	555742	nancy	zztest	mr_review_imaging	wsgeneric	audactn=view			

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Lessons Learned

- Key/Value data is much easier to index
(ex. key1="value" key2="value")
- If your data is in a database by all means use DB Connect
- Work closely with the compliance team to determine the requirements
- You must start with security in mind as there is PHI involved

Takeaways

- Splunk helps us fulfill HIPAA and HITECH requirements for privacy monitoring
- Saved over \$50K + \$12K yearly
- Easy to implement
- Flexibility to add reports and data sources

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Questions?



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THANK YOU

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