BEAM
Imaging Record Transfer

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Background

* HSE established public-private arrangements in response to the COVID-19 Emergency

* Diagnostics was a key part of this arrangement

* Bidirectional imaging record exchange between the public and private facilities in a timely manner to facilitate:

  * Partial outsourcing i.e. Private provided imaging only and public reporting

  * Full outsourcing i.e. Private provided imaging and reporting

* **Solution: BEAM**

NIMIS
The National Integrated
Medical Imaging System

COVID BEAM Project

* Rapid rollout in response to COVID-19
* Phased rollout for NIMIS sites – 4 phases
* 1 week implementation timeline for each of the first 3 phases – urgent outsourcing dependencies
* Phase 4 split into 2 groups incorporate the remaining sites

What is BEAM?

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* BEAM is an image record sharing solution
* Enables the electronic transfer of a patient's entire imaging record i.e. images, reports and related scanned documents, between facilities
* These can only be transferred between participating BEAM facilities i.e. the sending and receiving sides must have a BEAM gateway

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Meet Siobhan

* 50 years old
* Chest Pain

* GP referred to SJH Cardiology OPD
* Requested a CT Scan

COVID-19

* Increased demand and strain on SJH Radiology dept., scanners and resources
* Waiting lists started to grow

* Siobhan deemed suitable to have her scan in the Beacon as part of their outsourcing arrangement with SJH

BEAM Facilitated

1. Transfer of previous relevant images and reports from SJH to the Beacon for comparison during her scan and reporting

2. Transfer of the new scan and report from the Beacon back to SJH to ensure a complete patient record i.e. close the loop

1 The SJH PACS Mgr logged into BEAM, searched NIMIS for Siobhan's previous scans/x-rays and pushed the study information only to the Beacon

SJH

Beacon

2 BEAM TRANSMITS THE PUSH INFO

3 The Beacon PACS Mgr logged into BEAM and reviewed the pushed info and confirmed Siobhan was having her scan performed in the Beacon and approved the import into Beacon PACS

SJH

Beacon

4 BEAM TRANSMITS THE IMAGES/REPORTS

Siobhan's Journey - Beacon

* She had her CT scan in the Beacon

* Her scan was compared to her previous imaging and reported

1 The Beacon PACS Mgr logged into BEAM, searched the Beacon PACS for Siobhan's new CT scan/report and pushed the study information only to the SJH

SJH | Beacon

2 BEAM TRANSMITS THE PUSH INFO

3 The SJH PACS Mgr logged into BEAM and reviewed the pushed info and confirmed Siobhan was an SJH outsourced patient and approved the import into NIMIS PACS
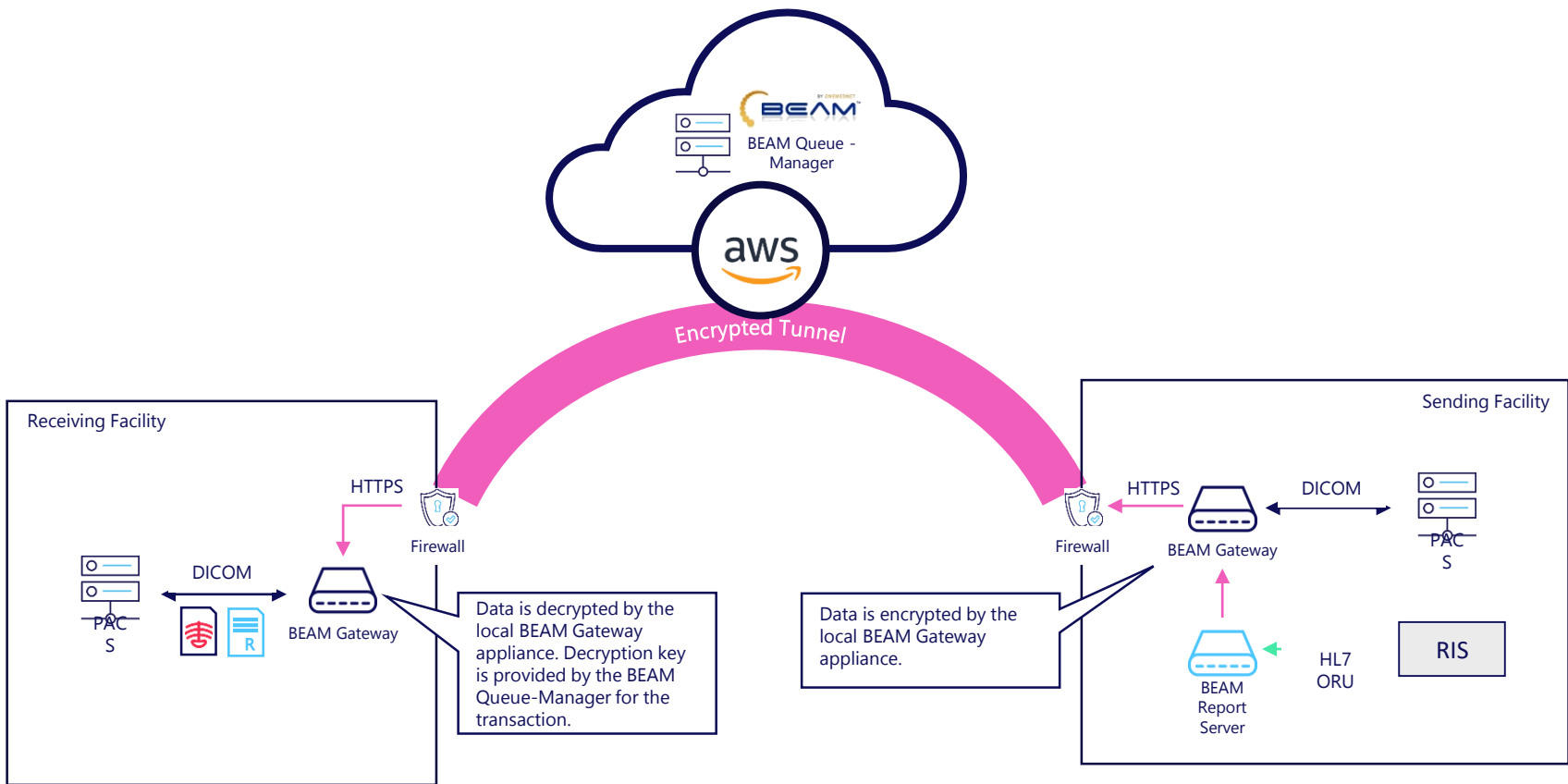
SJH | Beacon

4 BEAM TRANSMITS THE IMAGES/REPORTS

BEAM Queue - Manager

Encrypted Tunnel

Receiving Facility

HTTPS

Firewall

DICOM

PACS

BEAM Gateway

Data is decrypted by the local BEAM Gateway appliance. Decryption key is provided by the BEAM Queue-Manager for the transaction.

Sending Facility

HTTPS

DICOM

Firewall

BEAM Gateway

PACS

Data is encrypted by the local BEAM Gateway appliance.

HL7 ORU

BEAM Report Server

RIS

Benefits

* Secure electronic transfer
* Fast
* Efficient
* Reduce turn around time
* Reduce dependency on CD/DVDs
* Reduction in image management costs – materials and resource time
* Improved patient care

Siobhan's Journey - SJH

* Scans and report available in SJH for her virtual clinic appointment

Security

* GDPR – imaging records only transfer when approved by the sending/receiving site
* Peer to Peer – the sender and receiver must have a BEAM gateway i.e. no studies are stored in the cloud
* Encryption – studies are encrypted prior to transfer to the receiving facility
* SSL – BEAM uses SSL tunnelling providing a secure transfer mechanism
* PHI Protection – all data is encrypted; not stored on the gateways
* Audit – audit capability for safety and transparency

COVID BEAM Statistics

* 43 NIMIS sites live
* 4 non NIMIS Public sites live
* 7 non NIMIS Public sites in implementation
* 6 Private sites live
* 3 Private sites in implementation
* ~ 10,000 studies transfer via BEAM since June
* Hundreds of man hours saved

BY ONEMEDNET

BEAM®

Image Sharing with Confidence.

Live BEAM Sites

PUBLIC SITES

* All 43 NIMIS facilities –
  * 74 imaging centres nationally
* Breastcheck –
  * Eccles St. Unit
  * Merrion Unit
  * Galway Unit
  * Cork Unit

PRIVATE SITES

* Beacon Hospital
* Beaumont Private Clinic
* Galway Clinic
* Alliance Medical (multiple sites)
* The Hermitage
* The BONS - Cardiology

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Sites in Implementation

Public Sites

* SVUH
* STMH
* NMH - Holles St
* CUH including Mallow and Bantry – awaiting kick off
* Mercy – awaiting kick off

Private Sites

* The BONS - Radiology
* Affidea
* UPMC Whitfield

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Conclusion and Next Steps

* BEAM has been a major success
* Achieving core objective and benefits realisation
* Greatly improved clinical end user experience and delivery of patient care

* NIMIS 2.0
  * Infrastructure change
  * Development pathway
  * BEAM Me – dentists, solicitors, patients

THANK YOU
FOR LISTENING

Q&A