# IRON MOUNTAIN®

**HEALTHCARE**

## PinnacleHealth

# BRIDGING FILM AND DIGITAL IMAGES

Pinnaclehealth Improves Service Levels and Patient Care, While Saving Costs Through Workflow Redesign

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| **CHALLENGE:** | Cost-effectively storing and accessing historical x-ray films, post PACS deployment |
| **SOLUTION:** | Offsite x-ray film storage and on-demand digitization, with seamless integration into PinnacleHealth's PACS. |
| **RESULTS:** | With X-ray on Demand, PinnacleHealth streamlined workflow processes, reduced costs, improved physician satisfaction and delivered better patient care. |

*"Due to efficiency gains in our processes, we were able to save six full-time employees and satisfy the hospital's radiologists"*

**CLIENT: RICH BAGBY,
CHIEF INFORMATION OFFICER**

PinnacleHealth – a four hospital, not-for-profit health system servicing central Pennsylvania – provides acute patient care services. With more than 800 physicians and 4,000 medical staff, PinnacleHealth totaled 37,000 admissions, almost 50,000 emergency department visits and performed nearly 10,000 major operations in 2000.

As the PinnacleHealth radiology facilities readied themselves for a move to a common digital imaging system called PACS (Picture Archiving and Communications System), they were challenged with how to manage the large volumes of active and inactive analog film x-rays. Although only a small percentage of historical

x-rays (approximately 20%-30%) are typically needed in future diagnoses, state laws dictate that they must be retained for a period of approximately seven years.

The situation at PinnacleHealth, like most other healthcare organizations that switch to PACS, meant that their radiologists would have to compare historical, analog x-rays films viewed with a light-box against digital x-rays viewed on a computer monitor. While film-based x-rays can be digitized and fed into standard PACS, conversion of all historical x-rays is cost prohibitive due to the large number of film x-rays involved.

A further complication for PinnacleHealth involved the manner in which physicians required patient information to be presented. A patient's x-ray had to be assembled together with the latest patient transcripts. This meant that x-rays stored offsite needed to be rushed to the treatment center for file assembly before the physician could diagnose (or treat) a patient.

X-ray on Demand is a unique solution offered by Iron Mountain that bridges the physical and digital radiology record. Patient radiology films are requested via telephone, fax or via a Web-portal called Iron Mountain Connect™, then pulled at the Iron Mountain Record Center. The radiology films are digitized and formatted into a DICOM (Digital Imaging and Communications in Medicine) image that can be read and archived by standard PACS, regardless of the vendor. This digitized image is then combined with an indexing of patient demographic and exam information, encrypted for security, and sent directly into a hospital's PACS over a secure connection using a Virtual Private Network (VPN). They are then available for analysis and comparison with existing digital images from within the hospital's PACS.

After hearing about the X-ray on Demand service, Rich Bagby, Chief Information Officer, invited Iron Mountain to meet with him and Phil Guarneschelli, Chief Operating Officer, to discuss their needs. It was evident from an early stage that the X-ray on Demand service was a good fit. Instead of digitizing thousands of x-ray films in advance, PinnacleHealth now processes only those that are needed – thus saving significant costs.

Iron Mountain won the contract based upon the flexibility of its X-ray on Demand solution and the cost savings made possible by taking over the existing radiology film warehouse. All but the most recent month of x-ray records were moved over to Iron Mountain's facility.

"As a result of the evaluation completed for X-ray on Demand, we not only implemented a physical and digital record solution – but also one that enabled PinnacleHealth to bridge the two media," said Michael Karp, Iron Mountain Executive Vice President of Sales.

There are early indications that the X-ray on Demand service is a great success. The radiology department receives digitized images under similar service levels as with a film; multiple standard deliveries are scheduled throughout the day, with STAT deliveries being available anytime. PinnacleHealth's staff now receives x-rays from Iron Mountain in sufficient time to assemble patient transcripts per the radiologists' needs, and six full-time employees were redeployed to other positions.

X-ray on Demand has provided a number of benefits to PinnacleHealth, including a streamlined workflow process, faster diagnoses resulting in improved patient care, and the reduction in a significant number of full-time employees. X-ray on Demand provides a critical component of PinnacleHealth's PACS strategy in their efforts to ultimately become a filmless radiology environment.

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