



ATA 2013 AUSTIN, TX MAY 5-7 MEETING + TRADE SHOW
TELEMEDICINE + MHEALTH + TELEHEALTH

Two Types of Teleradiology




Nighthawk v. Dayhawk



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In The Beginning.....

-  NightHawk Radiology Services founded in 2001 to deliver radiology interpretations to U.S. hospitals by U.S. board certified radiologists from reading centers in Idaho, Switzerland and Australia
- NightHawk became the generic term for this service
- Currently there are over 100 commercial teleradiology providers with industry revenue over \$2 Billion
- While the company, NightHawk has been merged out of existence, the providers can be segmented into two types, NightHawks and DayHawks

Most Frequent Exam

NightHawk



Dayhawk



Turnaround SLA

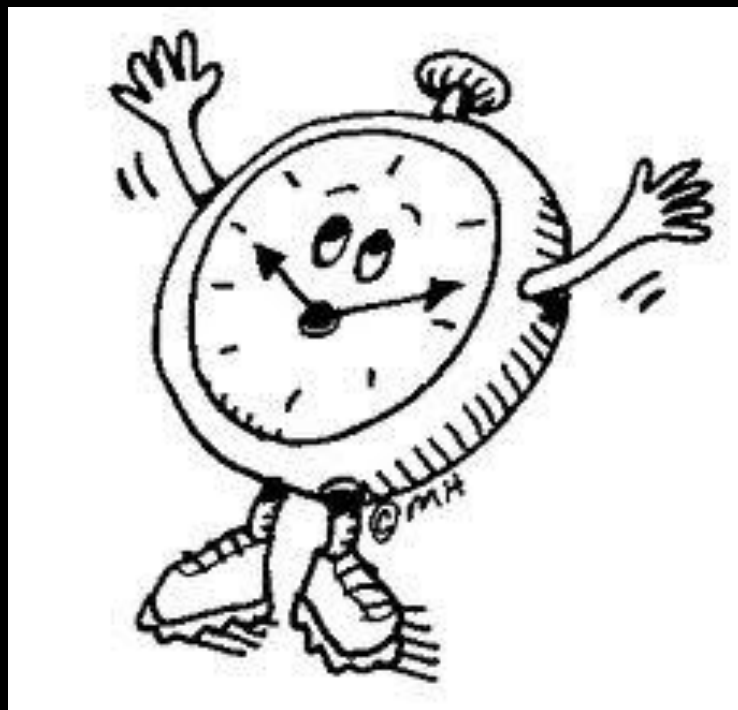
NightHawk

30min., 10 min for stroke



DayHawk

24 hrs., One hour for STATS



Types of Reads or Reports

NightHawk

Final or Preliminary

- Over-read the next morning and converted to Finals
- Still used for diagnosis and treatment

DayHawk

Predominantly Finals

- Signed by reading radiologist and submitted for reimbursement
- Also includes incidental findings

General Hospital
Preliminary Radiology Report

VIRTUAL RADIOLOGICSM 866-941-5695

Name: _____ Age: 20 Date: 10/7/08
Requesting Physician: _____ MRN: _____ DOB: _____
Procedure: CT Abdomen & Pelvis Accession: 0100014880 Number of Images: 347

Provided Clinical History: HISTORY: Left flank pain x 8 months, but worse today; nausea, vomiting, hematochezia, possible hematuria, and constipation. IIX: renal stones, IIX: left ureteroscopy, and laser lithotripsy. Prior ct study done on 10/01/08 - images being sent for comparison.

EXAM: CT abdomen and pelvis

HISTORY: Left flank pain x 8 months, but worse today; nausea, vomiting, hematochezia, possible hematuria, and constipation. IIX: renal stones, IIX: left ureteroscopy, and laser lithotripsy. Prior ct study done on 10/01/08 - images being sent for comparison.

COMPARISON: 10/01/2008

TECHNIQUE: Axial images were obtained without intravenous or oral contrast.

FINDINGS:

There is no dilation of the intrarenal collecting systems or ureters bilaterally. Several stones are seen in the left kidney measuring up to 4 mm in size which are unchanged. There are also several punctate hyperdensities in the right kidney which could represent tiny stones or possibly concentrated urine in the renal papilla.

No masses are seen in the liver, spleen, pancreas, adrenal, or kidneys. However, it should be noted that lesions in the solid abdominal organs can be missed without intravenous contrast.

No free peritoneal fluid is seen in the abdomen or pelvis. No pelvic mass is seen. No significant bowel dilatation is identified.

QUALITY ASSURANCE
Interpretation: _____ Signed: _____
Reviewed Patient Care: Yes No

CONFIDENTIALITY STATEMENT
This document is confidential and is intended to be used by the radiologist only for the use of the address. Access to this document by anyone other than the radiologist is prohibited. If you have any questions, please contact the radiologist or the appropriate department. If you have any questions, please contact the radiologist or the appropriate department.

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-FacilityName-
Final Radiology Report

VIRTUAL RADIOLOGICSM 866-941-5695

Name: _____ Age: --Age--Gender: M Date: _____
MRN: _____ SSN: _____ DOB: _____
Study: -PROCEDURE- Requesting Physician: _____
Accession: _____ Images: _____
Adult Studies: _____

Provided Clinical History: PI states he has sharp, aching, tingling, shooting pain in head. He was in a car accident nov. 2007

MRI BRAIN

TECHNIQUE:
Fat-sensitive and fluid-sensitive MR sequences of the brain were performed in orthogonal planes. No prior studies are available for comparison.

FINDINGS:

There is mild diffuse cerebral atrophy present, consistent with this patient's age. There is a well-circumscribed fluid density lesion in the anterior middle cranial fossa, measuring 2 cm x 1 cm and consistent with a benign arachnoid cyst. There is moderate diffuse volume loss in the anterior right frontal lobe cortex, suggesting mild encephalomalacia from remote insult, most likely contusion. There is mild associated subcortical gliosis in this region.

There is otherwise mild patchy increased signal intensity within the subcortical white matter, consistent with chronic ischemic changes.

The ventricular system is normal in size and distribution.

There is no evidence of intracranial hemorrhage.

There is no abnormal diffusion weighted signal intensity to suggest an acute ischemic event.

There are no regions of abnormal enhancement.

The pituitary gland and sella are normal.
The brainstem is normal.
The cranial nerves are normal.
The cerebellum is normal.
Normal intracranial flow voids are present.

QUALITY ASSURANCE
Interpretation: _____ Signed: _____
Reviewed Patient Care: Yes No

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Location Of Doctors

NightHawk

Can Be Anywhere



DayHawk

Domestic U.S. for U.S. Customers



Typical Customer

NightHawk

Hospitals/ Radiology Groups



DayHawk

Urgent Care/ IDTFs/ Mobile



On Site Coverage

NightHawk

Growing Trend

DayHawk

Almost Never On Site



Radiologist Compensation



NightHawk

- **Salary plus incentive**
- Dedicated to single provider
- Premium for sub-specialists
- Company provides insurance
- Common platform
- Licensing plus credentialing



DayHawk

- **Pay per exam**
- Work for multiple providers
- Primarily general radiology
- Provides own insurance
- Uses multiple systems
- Licensing

Favorite Conferences

NightHawk



DayHawk



NightHawk & DayHawk Similarities

- **Very competitive pricing**
- Quality service (minimize misses)
- Quality service (Help Desk, IT Support)
- Advanced technology (Mobile Devices, Image Sharing, Image & Report Storage)
- Workflow is key to success
- Integration with electronic medical record (EMR)



Lessons For Telemedicine

- Twelve years of commercial experience
- Major industry controversies
- Significant licensing challenges
- Declining prices vs. doctor's expectations
- Extensive QA experience

Teleradiology & Telemedicine

Opportunities For Working Together

- Telestroke with Neuroradiology support
- Video camera in exam room for technologist training
- Radiologist consult with referring physician
(needs Whiteboard)
- Live Consult with patient, referring physician and Radiologist (and family member)





Let's Continue the Conversation...

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