Get Insights: Improve Data Visibility

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Background

Proof of Concept Collaboration between Houston Methodist Willowbrook & GE to examine MR machine data & workflow observation data to understand:

- If there are any valuable workflow indications in the machine data
- If there are any actionable improvements to optimize the MR department

Data range Jan 1 – Apr 30, 2014

2623 Total Exams

What is MRI? What are operational challenges?

Basic exam workflow

- Patient prep
- Start exam (patient on table)
- End exam (patient off table)
- Walk patient out
- Repeat

? Time between exams

? Time between sequences

? Time variances between staff

Increase Capacity

Data Markers We Tested

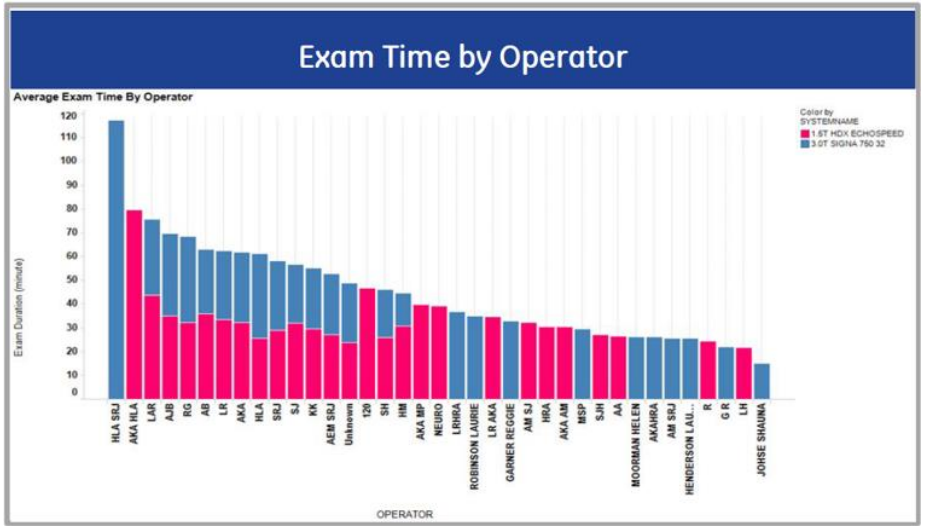
- Exam time & volume by exam type
- Gap time between MR series
- Number of MR series
- MR protocol variation
- Utilization & volume over time

Exam time & volume by exam type

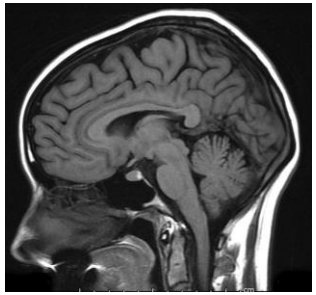
Description
Goal: To determine how are assets currently utilized. Is exam type mix optimal for customer? ✓ Exam volume by exam type ✓ Average time per exam type ✓ Total time per exam type ✓ Possibly by user as well

Top 5 Volume	Avg. Time (min.) 1.5T/3T	Cumulative scan hours 1.5T/3T
Brain (947)	30/20	120/240
Spine (789)	~30	180/176
Ext. (258)	~40	60/100
Knee (223)	28/30	40/58
Abd (173)	28/27	58/22

- Volume by Operator was able to be determined
- **Not able to correlate data** for interpreting Radiologist, as this is not known (thus cannot be entered) at time of scan set –up. **NOTE: This will apply to all markers.**

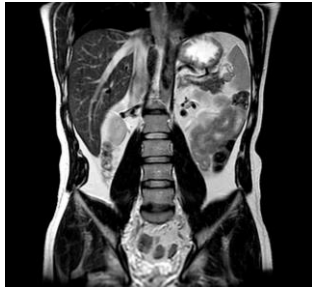


Exam time & volume by exam type



Brain MRI exams

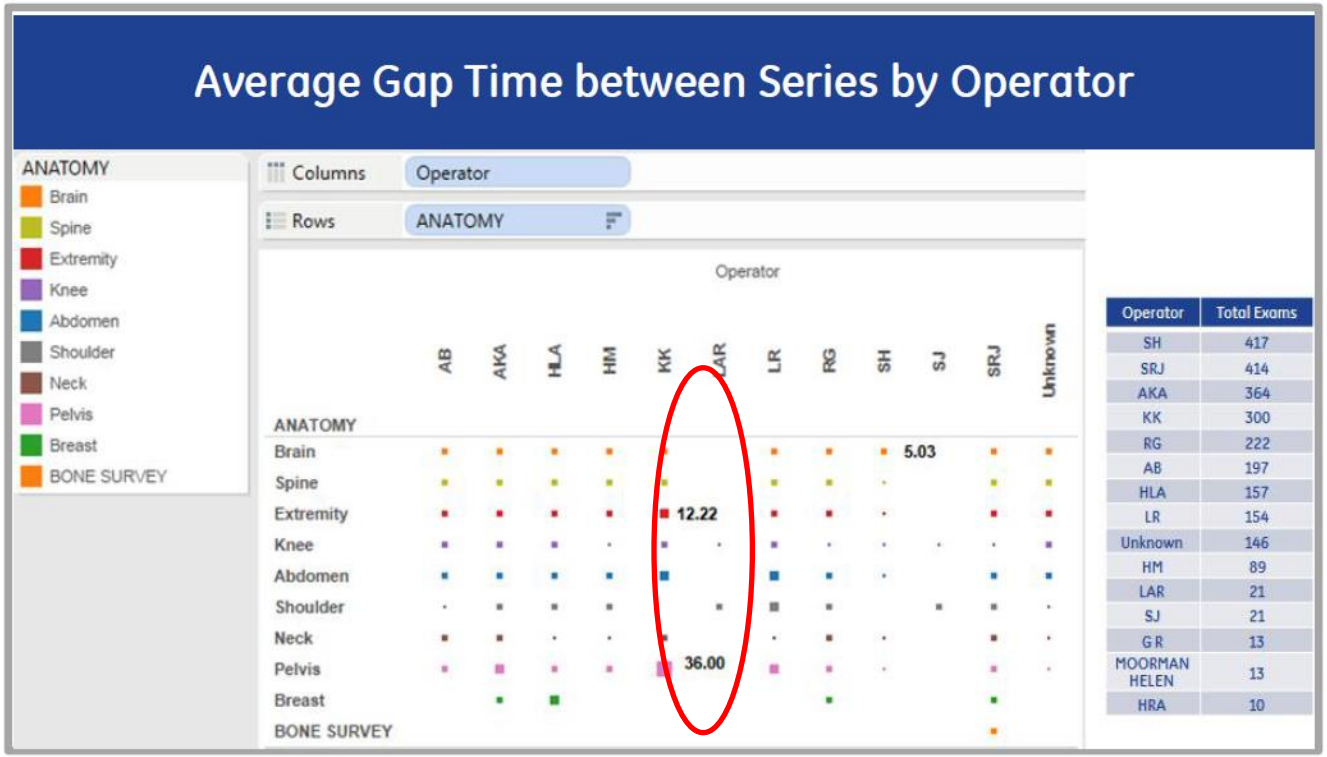
30% gap ratio on Scanner 1 (3.0T)
as compared to a
20% on Scanner 2 (1.5T)



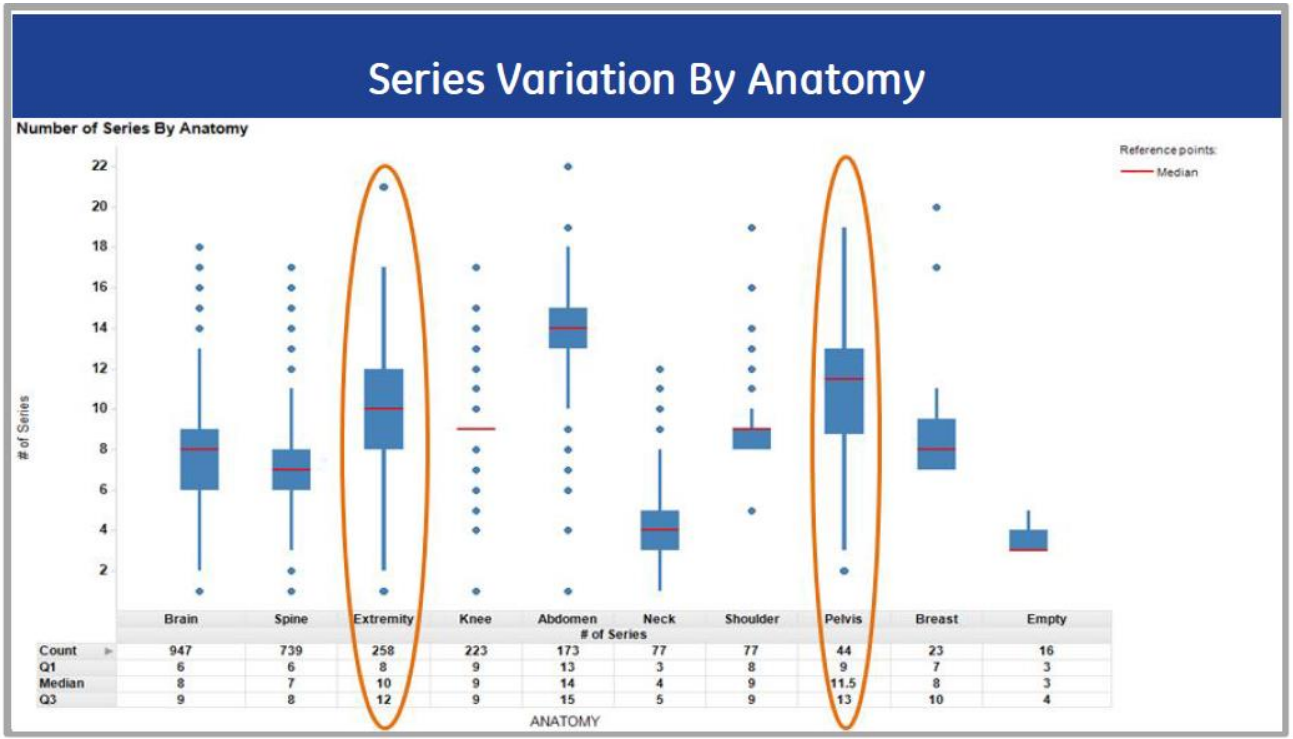
Abdomen exams

31% gap ratio on Scanner 1 (3.0T)
as compared to only a
20% on Scanner 2 (1.5T)

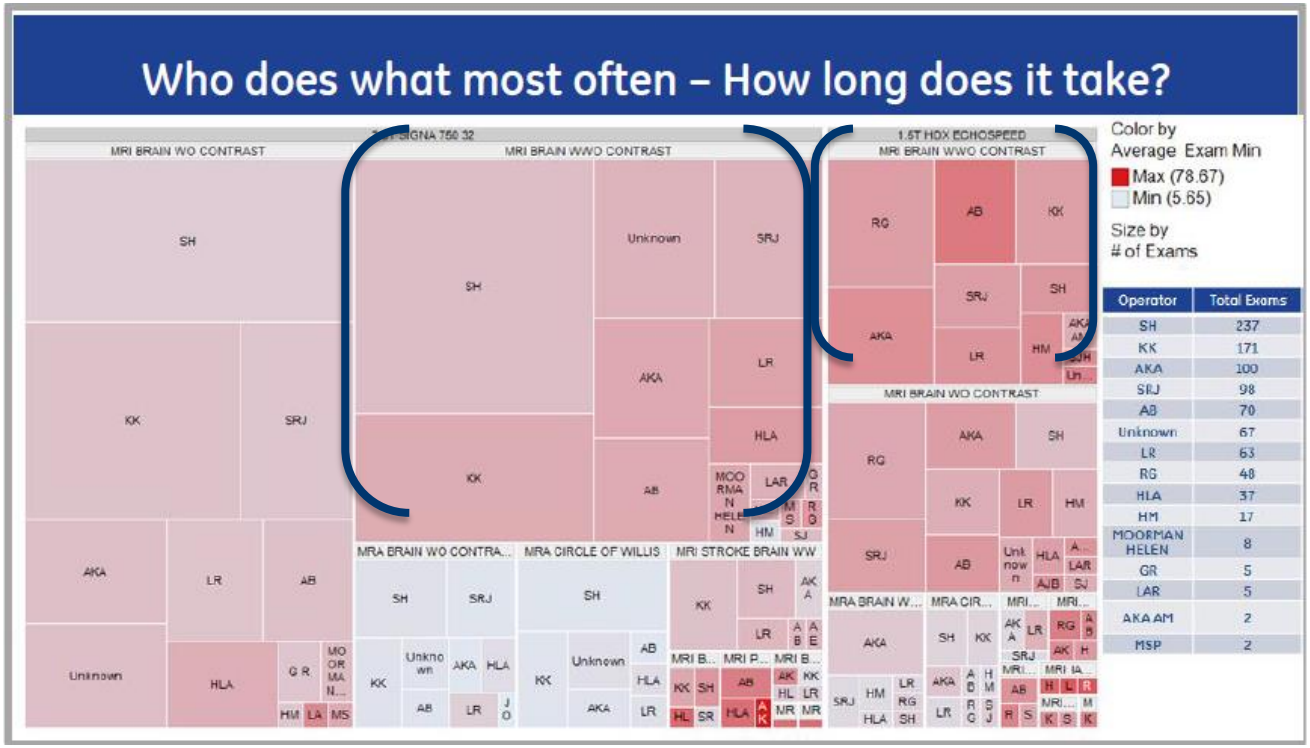
Gap between series by operators



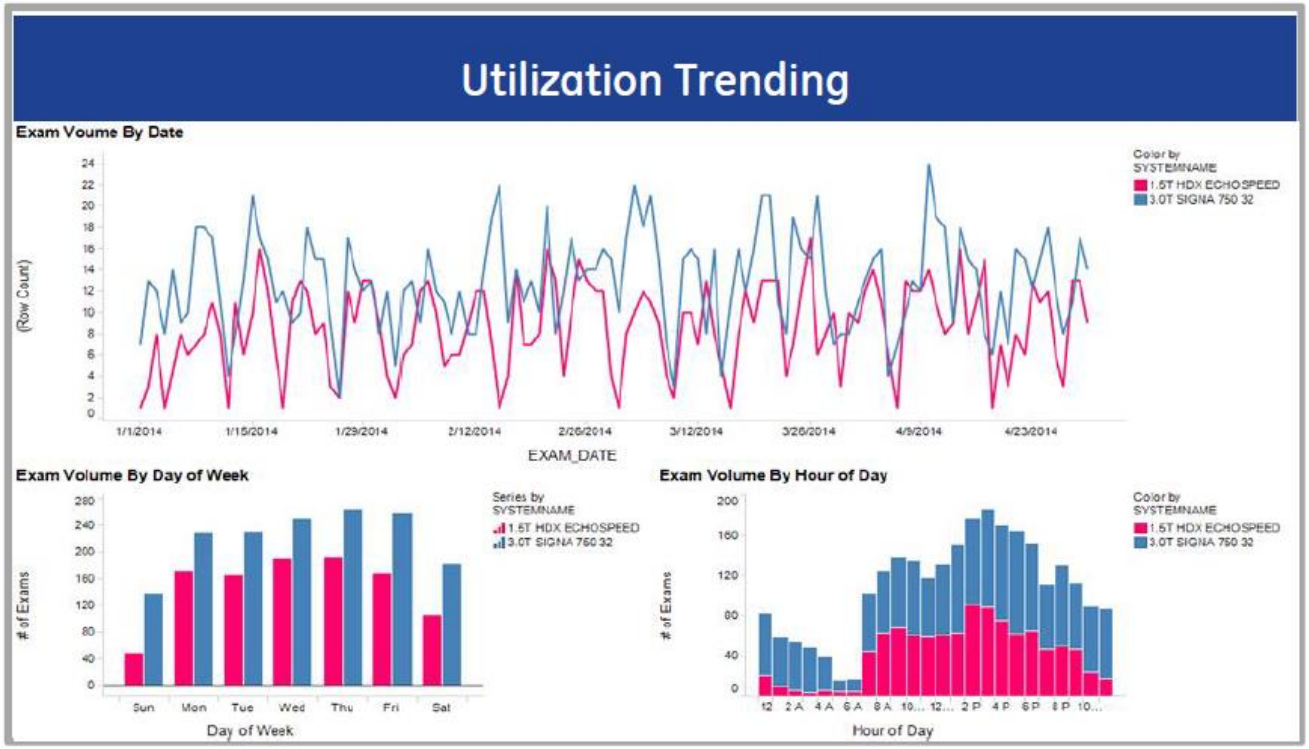
Series per exam



MR protocol variation



Utilization and volume over time



Executive Summary: Willowbrook Findings

- **Exceptional Patient Exam Experience:** Identified lots of Best Practices
- **Standard Care:** Exam time & number of series have little variation regardless of Shift/DOW
- **Protocol Standardization:** Have identified the exams to standardize (Abd, Pelvis & Extremity) based on variation in practice data.
- **3T system has higher utilization:** Neuro case mix & Propeller SW likely drivers
- **Tech Utilization:** Techs are responsible for most steps in the Pt exam experience for Inpatients & Outpatients. Many tasks could potentially be done by a different level of resource without changing care pathway steps/tasks.