

Improving equipment utilization planning through actionable analytics

Computing Scanner Idle Time and Models

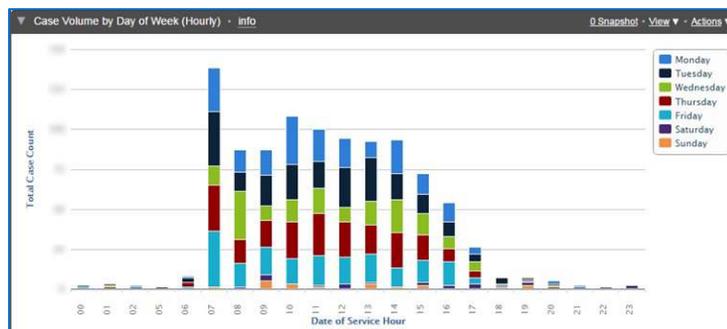
AUDIENCE

This brief outlines the utility value of scanner idle time using Foundations™. It is largely directed towards PACS and data analysts, to help plan and test data extracts from a combination of PACS and/or DICOM MPPS messages.

OVERVIEW

Management expects to make equipment utilization related decisions based on fluctuating patient volumes, competitive needs, and routine equipment end-of-life replacements or upgrades. Foundations™ provides a methodology to aggregate data from scanners and PACS, and use it for operational visibility and planning.

For example, the line graph below shows the room idle time with the red scanner to be consistent throughout the week, where the green scanner shows more variance, particularly on Wednesday vs Thursday. This data is an illustrative example of how customers can compare specific resources and case types. Matching this data with the hourly case volumes for each day shows a lower overall procedure volume on Wednesdays, thus confirming a higher room/scanner idle time than on Thursdays.



DATA PLANNING

For radiology imaging, a mix of data sources are needed to provide a complete picture. The primary and most important data source is the DICOM C-Find, which is an industry standard, well tested, and established interface. DICOM C-Find reliably provides the following sample data elements (some PACS provide body part and other fields):

0x00080020	Study Date	0x00100010	Patient's Name (discarded)
0x00080030	Study time	0x00100020	Patient ID
0x00080050	Accession Number	0x00100030	Patient's Birth Date
0x0020000D	Study Instance UID	0x00100032	Patient's Birth Time
0x00200010	Study ID (CPT Code may appear here)	0x00100040	Patient's Sex
0x00080061	Modalities in Study	0x00201208	Number of Study Related instances
0x00080090	Referring Physician's Name	0x00201206	Number of Study Related Series
0x00081030	Study Description		

Additional information is available from the PACS database or from an images' metadata. Station name is required for device level specificity and not usually available in the C-Find response.

0x00081010	Station Name
0x00081090	Manufacturer's Model Name
0x00080070	Manufacturer
0x00181000	Device Serial Number
0x00181030	Protocol Name

MEASURES PLANNING

Foundations offers the following measures and filters, out of box. All interactive discovery attributes are also available.

1. Room idle time (duration – average across all cases, max, min, filtered by time slots, organized by day of week, by hour, by scanner)
2. Ratio of room idle time to number of cases
3. Room idle against organizational/departmental target
4. Room turn over time = room idle time – clean/prep time for next case
5. Ratio of room idle time to procedure duration
6. Procedure duration = study time stamp - to study complete time stamp
7. Estimated procedure duration computed from CPT codes and historical average image count for the CPT codes.

This information can then be used for quality and efficiency improvement.

CONCLUSION

Foundations combines real-time and historical data to present valuable information to PACS and data analysts, in their business language. The contextual and trustworthy data along with information liquidity can be used to make insightful equipment utilization related decisions and help with operational visibility and planning.

Related Information: Technical Brief: Radiation Dose Surveillance, Management and Planning



About HealthLevel, Inc.

Founded in 2010, HealthLevel, Inc. is a privately held company, headquartered in Mountain View, California. Foundations from HealthLevel, Inc. is the industry's first integrated real-time and multi-year correlation platform for clinical, operational and financial data. Foundations provides an intuitive, configurable, analytics solution allowing all hospital personnel to readily monitor and improve their own business practices.