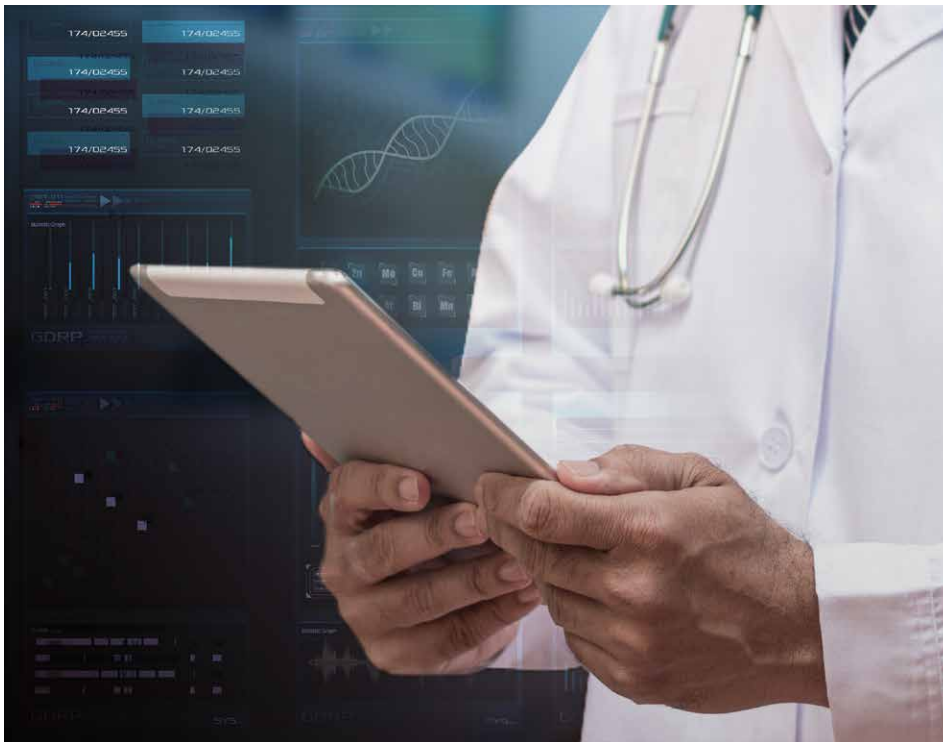# Smart Scheduling

Fully understanding how to best manage exam scheduling in an imaging department or practice is considerable given the wide range of factors contributing to patients missing appointments—creating equipment underutilization, idle staff, and delayed diagnosis. Smart Scheduling is designed to help manage these challenges by utilizing machine learning models leveraging a wide range of factors, both internal and external of the imaging practice, to change the paradigm of scheduling workflows to enable better patient access.

Smart Scheduling is part of the suites of Edison™ Applications that links coaching and artificial intelligence algorithms to help radiology teams enable better patient access to imaging examinations through:

- Automated data aggregation that helps predict a patient's tendency to adhere to a particular exam appointment based on historical information and localized patterns up to five days in advance.

- Clear and intuitive dashboard, providing a probability score for each prediction, will allow the scheduler to improve patient follow-up to help reduce no-shows.

- Customer Enablement engagements (where available) to drive change management, support setup for success, and help deliver outcomes that matter.

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Personalized

Machine learning models trained on your own site scheduling data from up to one year to account for seasonality.

Engaged

Advisory service engagements up to 12 times a year to monitor progress, if there is a need to retrain the model, and help define common definitions of key metrics used in scheduling.

Predictive

Use up to 40 different data factors to best understand patient probabilities for missing appointments.

Smart Scheduling takes the power of artificial intelligence and utilizes data factors, both internal and external to a customer's practice, to help determine probabilities of a patient's arrival to their scheduled examinations on time. It utilizes the data aggregation of Imaging Insights Radiology Operations Module. When combined, it helps capture full visibility of the practice that enables meaningful changes that assists driving relevant outcomes.
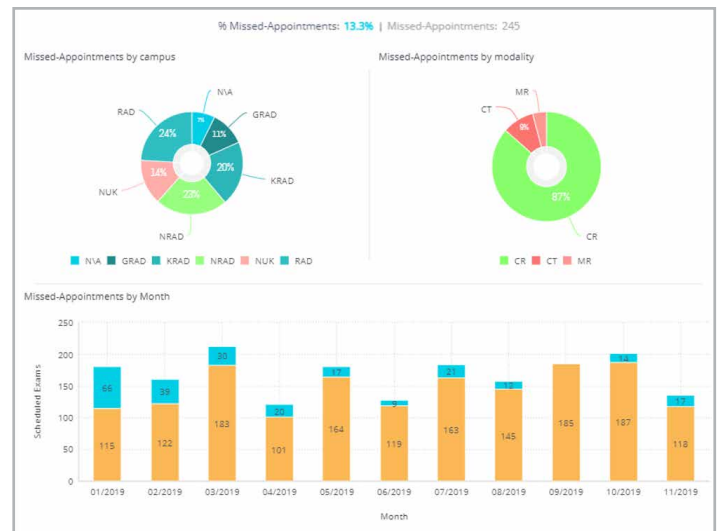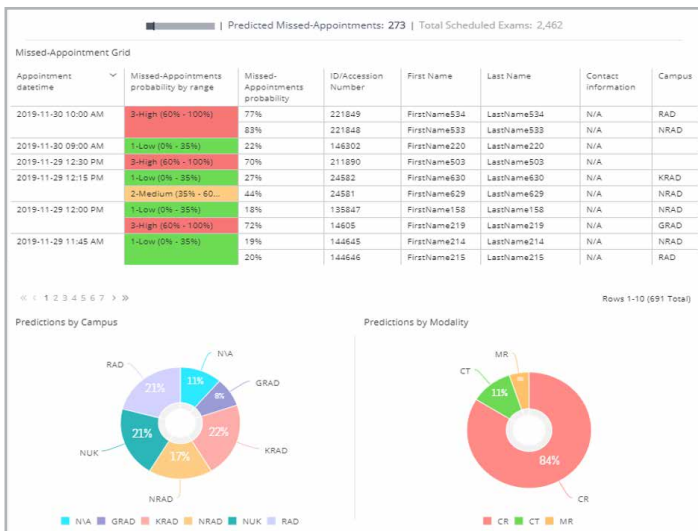
Predictive

Designed for schedulers and imaging administrators who plan, follow, and manage patient scheduling and communication, the predictive dashboard shows missed appointments probability scores, and breaks it down by site, modality, day, and hour.
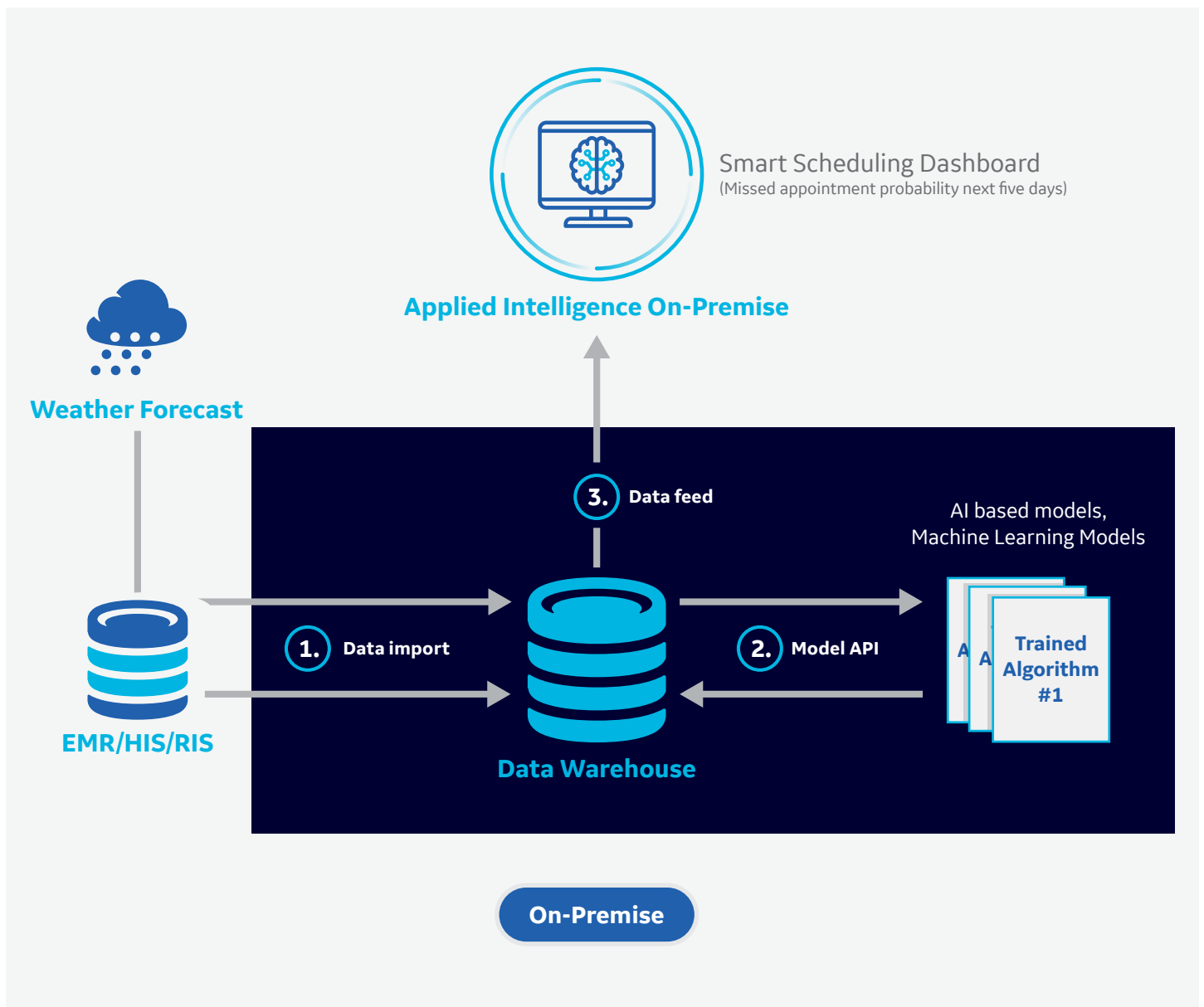
The appointment grid does a further analysis between scheduled examinations detailed by modality, procedure type, request to schedule date, and compares the predicted probability score based on whether the patient attended or missed the exam.

Retrospective

Intended to show past activity related to missed appointments by site, modality, and breakdowns by month, the retrospective dashboard provides an analysis on the performance of the algorithm.

Technical Architecture

Smart Scheduling utilizes data collected from Electronic Medical Records, Hospital Information Systems, or Radiology Information Systems. Weather forecast data is then integrated into the common data warehouse, where a data scientist will train the Smart Scheduling algorithm using any one of several machine learning models that most applies to the customer workflow and architecture. This information is then displayed to show the patient probability score and other data information included in the scheduling analysis relevant to the scheduler. All information and utilized data remains on premise, and has no personal or health data privacy impact.

Smart Scheduling Dashboard
(Missed appointment probability next five days)

Applied Intelligence On-Premise

3. Data feed

AI based models,
Machine Learning Models

Weather Forecast

1. Data import

2. Model API

Trained Algorithm #1

EMR/HIS/RIS

Data Warehouse

On-Premise

Server Requirements

It is the customer's responsibility to provide an approved version of an operating system, configured and ready to accept the software. Below are the minimum specifications for a simple installation (mono site). Please consult GE Healthcare for recommended configuration for specific needs.

Data Receiver and Data Warehouse Single Server:

Item	Minimum Specification
Server	Physical or virtual server, Vmware® ESX and ESXi version 4 or 5, Microsoft® Hyper-V®
CPU	Dual CPU, 8+ cores, 2.5 GHz, 64 bit, AVX support required, EFS support required to encrypt Smart Scheduling database
Memory	32 GB or greater
Hard Disk Storage	OS and software • If desired, OS and GE software can be on different partitions • SiSense software must reside in the C: partition • 300 GB – 500 GB partition Partition for databases • Varies based on number of appointments and predictions (about 40 GB plus 10 MB/1,000 appointment) • Average size is 100 GB – 200 GB Partition for database backup • At least 20% larger than database • Average size is 120 GB – 240 GB
Operating System	Windows Server 2012 R2 Windows Server 2016 (64-Bit only) Java 8 runtime must be present on the server before we can install the software (JRE 1.8 or greater)
Network	1,000 Mbit/s Ethernet switched connection Fixed IP address (IPv4, Static, or DHCP Reservation) External internet connection required for weather data utilized for the inference model (domain provided during installation)