

PHILIPS

Advanced analysis for pulmonary care

IntelliSpace Portal



A customer story from the Multi Dimensional Imaging Lab, Duke University Health System, Durham, USA



**Who?**

**Dr. Daniel Boll, MD**  
Medical Director and abdominal imaging specialist

**Mission?**

Support enhanced patient care through post-processing technology that provides innovative, high-quality, and reproducible visualizations and analyses

**Challenge?**

Support quick yet comprehensive diagnoses of lung ailments through a dedicated applications suite

**Solution?**

The pulmonary suite on IntelliSpace Portal 7.0

# Seeing new possibilities in pulmonary care

No two days are alike at the Multi Dimensional Imaging Lab. Six technologists process exams on a wide range of cases, such as interstitial lung diseases and lung cancer. Variety is good. But how do you transform large amounts of information into rich diagnostic insight that is easy to apply and increases clinical confidence?

The pulmonary applications suite on IntelliSpace Portal 7.0 is one way to answer that question. It offers the application depth and clinical coverage the lab needs to create reproducible results as well as diagnoses referring physicians can rely on. Multiple automation tools save Dr. Boll and his team time – and highlight the potential of quantification and automation in changing the way imaging specialists work.

# New ways to view the lung

“The pulmonary suite includes all the Philips applications on the market right now.”

## Tackling multiple clinical challenges with one solution

“We have all the applications necessary for lung imaging,” says Dr. Boll, “and they work robustly.” The pulmonary applications suite includes clinical tools for advanced visualization, segmentation, and quantification of lung nodules and irregularities. Lung nodule CAD software<sup>[1]</sup>, for example, automatically identify nodules 4 mm to 30 mm. “With CT COPD, we can accomplish a number of things, such as showing total lung volumes and density plus left and right segmentation. It also allows us to make emphysema measurements.”

The application’s lobar segmentation capability is a particular highlight. “Without manual input,” he explains, “the algorithm reproducibly identifies and volumetrically assesses lobar anatomy and allows longitudinal evaluations of disease evolution.”

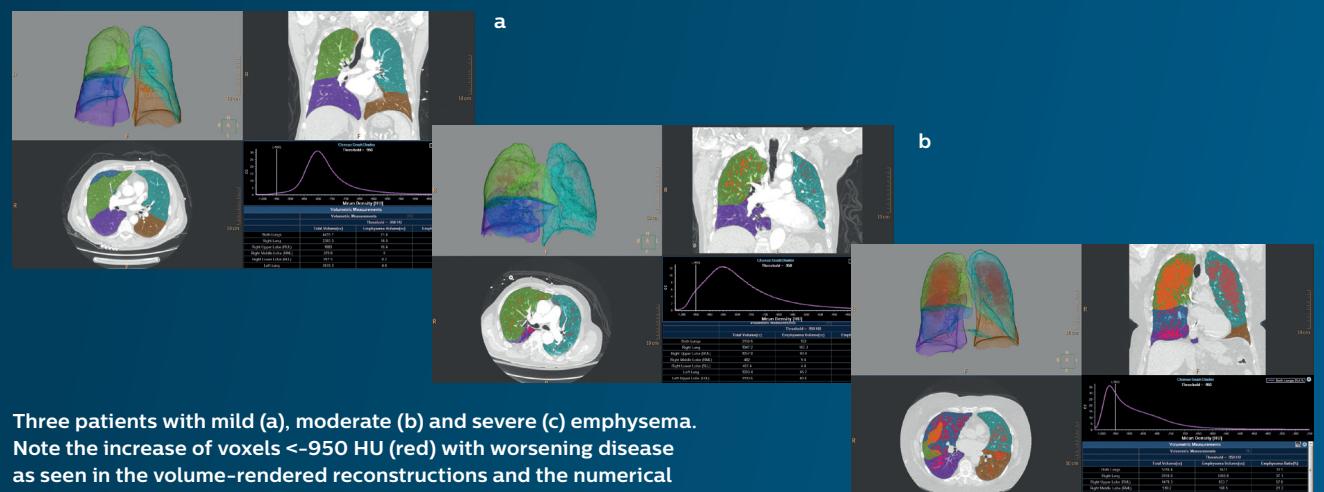
## Building confidence through quantification

In today’s increasingly connected healthcare, radiologists engage in clinical consults and deliver the quantitative

information that helps care teams manage disease. “For us,” he remarks, “it’s of utmost importance to have quantifiable and trackable data. We found these tools on the IntelliSpace Portal very well-designed and intuitive.” With CT COPD, for example, users quickly segment and quantify lung volumes, emphysema, and other airway parameters.

## Collaborating to improve care

Interdisciplinary patient assessments are now the routine for complex case management. While straightforward cases can be captured in a short report, the lab prefers a different approach for challenging cases, such as emphysema, lung cancer, and pulmonary embolism assessment exams in which disease and potentially small lesion anatomy must be visualized, analyzed, and quantified. “We’ve really benefitted from the platform’s sharing capability,” he says. “On difficult cases, it has allowed us to communicate the pathology to colleagues much more clearly than using PACS.<sup>[2]</sup>”



Three patients with mild (a), moderate (b) and severe (c) emphysema. Note the increase of voxels <-950 HU (red) with worsening disease as seen in the volume-rendered reconstructions and the numerical analyses with anatomic correlation (right lower viewport).

<sup>[1]</sup> CAD functionality is not available for sale in the USA

<sup>[2]</sup> Results from case studies are not predictive of results in other cases. Results in other cases may vary.

# and manage time

## Generating reliable results quickly

Radiologists are now responsible for reading a growing number of studies and creating their own reports. Digital measurements can speed up workflows, says Dr. Boll. But basic transcription errors undo these efficiency gains in seconds. "The automation tools on IntelliSpace Portal 7.0," he reflects, "put the data we need from priors at our fingertips. And we can copy/paste and even automatically transfer our reporting panels right into [patient-level] reports. This is a very simple way to help reduce transcription errors." IntelliSpace Portal 7.0 uses DICOM and HL7 to export clinical findings and measurements to reports, electronic medical records, and radiology information systems.

**“ The big benefit we see is that the output – in other words, the turnaround time until clinicians have their final reports – is earlier than what we experienced in the past.”**

## Obtaining clinically relevant information in just minutes with CT COPD



**45 minutes**

Post-processing a COPD study using PACS

**4-5 minutes**

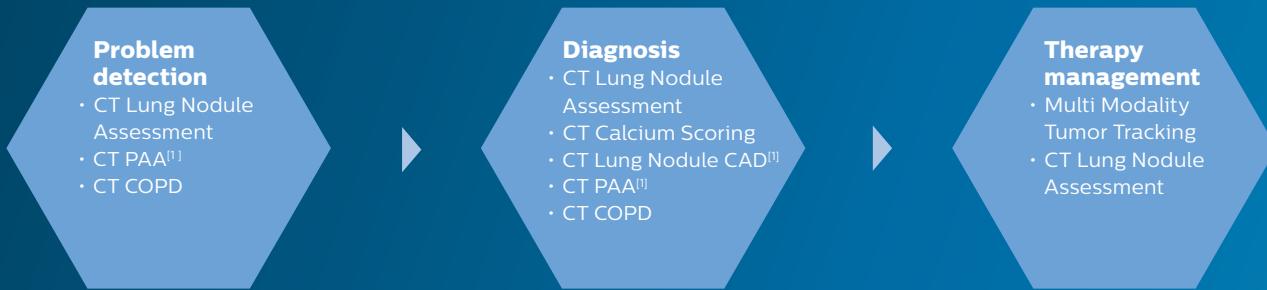
Post-processing performed with CT COPD<sup>[2]</sup>

[2] Results from case studies are not predictive of results in other cases. Results in other cases may vary.

[3] Up to four studies can be loaded simultaneously for comparison.

**“ For the pulmonary suite, a wealth of information can be extracted automatically. All the segmentation is done in 3D, and it's very visually appealing. If you want, you can rely on your manual capabilities to fine-tune the study. The relevant priors are loaded even before you open your application.<sup>[3]</sup> All this useful information allows you to move on with your analysis.”**

# A comprehensive lung management solution on a single advanced platform



**“ We found that in terms of CT, the entire bandwidth of lung imaging was able to be post-processed with the pulmonary applications suite on the IntelliSpace Portal.”**

**Dr. Daniel Boll, MD**, abdominal imaging specialist and Medical Director of the Multi Dimensional Imaging Lab at Duke University Health System, Durham, USA

## Do you have the tools you need to provide confident diagnoses quickly and effectively?

Discover how IntelliSpace Portal 7.0 and its pulmonary applications can help you deliver exceptional care, faster, and at lower cost. Contact your local representative or visit [philips.com/intellispaceportal](http://philips.com/intellispaceportal)

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