

### Centre Hospitalier du Havre, Le Havre, France

### Who

Professor Bouchra Lamia, Pulmonologist and Intensive Care Physician

#### Challenge

Make diagnostic and treatment-related decisions with confidence; obtain highquality ultrasound imaging at the bedside and in the ward, including for more challenging patients

### Solution

Philips Sparq ultrasound system deployed in the respiratory medicine department, with one linear transducer, one convex transducer and one sector transducer

### Results

Sparq system is easy to transport and use, and supports respiratory medicine department team in performing ultrasound examinations for a wide range of patients and clinical scenarios

# **Outstanding mobility and performance** for exceptional patient care

The Centre Hospitalier du Havre is a hospital group that encompasses 10 medical centers and a total of 1,500 beds. Professor Bouchra Lamia, a pulmonologist and intensive care physician, works together with her team in the group's university respiratory medicine department. The department has 40 standard hospital beds, 10 beds for weekday use, 10 day-patient beds and a functional testing area equipped with a Philips Sparq ultrasound system, which is used to examine respiratory outpatients or non-scheduled regular patients who have been referred from the emergency room.



Professor Lamia and her team routinely perform ultrasound scans on hospitalized respiratory patients to assess respiratory failure or dyspnea, to detect pulmonary hypertension or chronic pulmonary heart disease, or to evaluate chronic heart disease.

#### **Professor Bouchra Lamia**

Pulmonologist and Intensive Care Physician, Rouen Hospital and Le Havre Hospital Group (Centre Hospitalier du Havre), Normandy University Respiratory Disability Research Group

## Philips Sparq – a solution designed to address ultrasound challenges

The respiratory medicine department at Le Havre is equipped with a Philips Sparq ultrasound system. This extremely portable device is **easy to transport** around the hospital and **easy to use**. The system at Le Havre features three of the nine transducers that are supported by Sparq: one linear transducer, one convex transducer and one sector transducer.

### Strong foundations for clinical assessments

Sparq is a valuable tool for chest ultrasounds when assessing pleural effusions, performing needle biopsies on subpleural nodules, and running echocardiograms. It offers a high level of 2D quality which is particularly beneficial when assessing respiratory patients, who may often be overweight and/or suffer from emphysema.

Being able to monitor the systolic pulmonary artery pressure of respiratory patients is extremely useful for the department team. **Sparq's excellent color, pulsed and continuous-wave Doppler quality** obtains a good signal for assessing tricuspid regurgitation, measuring peak velocities and, ultimately, for estimating systolic pulmonary artery pressure values.

All heart views are easily obtained using the S4-2 transducer, providing Professor Lamia and her clinical team with a reliable basis for clinical diagnoses.



### A broad variety of clinical applications

The team at Le Havre uses Sparq to assess and monitor a wide range of patients in various scenarios:

- Outpatients: attending a scheduled appointment for a pleural ultrasound
- Patients referred to respiratory medicine from the emergency room: for chest procedures such as thoracentesis, an ultrasound-guided biopsy, or an echocardiogram prior to the insertion of a chest drain
- Standard hospitalized patients: for ultrasound exams to determine the cause of acute dyspnea, including, for example, detection of acute right heart failure, elevated left ventricular filling pressure, pericardial effusion or dilatation of the inferior vena cava
- At the patient's bedside: ultrasound exams for hypoxic patients who are difficult to transport, or ultrasound with microbubbles to identify an intracardiac or intrapulmonary shunt
- Scheduled day hospitalization: follow-up monitoring of dyspnea and ultrasound exams. Sparq can be positioned at the patient's bedside, making it easier to schedule additional examinations if needed

### Real-world clinical benefits at Le Havre

#### **Clinical case 1**

A patient was hospitalized and sent from the emergency room to the respiratory medicine department with acute respiratory failure.

The initial clinical examination revealed dyspnea, polypnea and clinical signs of heart failure. There were no known cardiac comorbidities in the patient's history.

The ultrasound exam allowed Professor Bouchra Lamia and her team to conduct a full cardiac assessment – taking pulmonary artery pressure readings, looking for signs of acute and/or chronic pulmonary heart disease, and assessing left ventricular systolic function. The examination also allowed Prof Lamia and her colleagues to eliminate chronic heart disease.

The ability to perform the ultrasound exam at the bedside allowed the team to conduct non-invasive follow-up hemodynamic monitoring after the appropriate treatment. As Prof Lamia observes, "In this case, the patient had received diuretic therapy on arrival and the ultrasound enabled us to observe hemodynamic improvement."



"The ultrasound enabled us to conduct a full cardiac assessment and observe hemodynamic improvement."

Professor Bouchra Lamia



"The ability to use Sparq and move it easily to the patient's bedside enabled us to scan this day patient immediately."

### Clinical case 2

A patient with chronic respiratory failure and known pericardial effusion for one month was on a course of long-term oxygen therapy, at a flow rate of 4 liters per minute at rest and 6 liters per minute during exercise. This patient had been seen and assessed in the department two weeks earlier. He presented worsening dyspnea and increased lower limb edema. Diuretic therapy was increased along with his basic oxygen therapy.

Two weeks after this appointment, the patient was called back as a day patient for further assessments, including a bedside ultrasound exam.

As Prof Lamia explains, "The ability to use Sparq and move it easily to the patient's bedside enabled us to scan this day patient immediately, without the usual delays related to the availability of scheduled ultrasound appointments." The examination enabled Prof Lamia and her colleagues to observe improvements in the pericardial effusion and left ventricular filling pressures.

Professor Bouchra Lamia



© 2019 Koninklijke Philips N.V. All rights reserved.

www.philips.com

www.philips.com 4522 991 53271 \* SEP 2019