Since 2006, when the new Nicosia General Hospital has been in function, the “Chest clinic” that was a vital functioning unit of the old Nicosia General Hospital from 1949, was upgraded and modernized to what we call today “The Respiratory Department”. The pulmonary ward for specialised respiratory inpatient care became a reality on 17 Dec. 2009 and has been in full functioning mode ever since. It has 23 available hospital beds and a VIP room for hospitalization of distinguished patients. It is the pioneer ward of its kind in the island, having a core of highly trained medical and paramedical personnel along with state of the art equipment, providing the best of what modern medicine can provide.

Furthermore, the Respiratory department of Nicosia General Hospital moved to fraternization with the Respiratory Department of the University of Crete in 2009, and since has been following a cooperation protocol including organizing scientific seminars, joint participation in research protocols, scientific publications and post-graduate training of pulmonary physicians in other European Medical centres.

Activities and services provided

1. **Inpatient care department (Respiratory Department)**
   Patients with acute and chronic respiratory diseases needing hospitalization are admitted in the Pulmonary ward. The ward is on duty every day, 365 days a year, 24 hours a day. Admission to the ward is usually through the emergency unit, after evaluation by a pulmonary physician. Patients may be also transferred from another hospital/ward, specifically when specialised pulmonary care/monitoring cannot be offered in current patient settings (Hospital or ward). Interhospital transfers are mainly from Paralimni and Larnaka General Hospital. InterHospital transfer from Paphos and Limassol General Hospital is rare since the introduction of pulmonary wards in both Hospitals (Pulmonary ward in Paphos Gen. Hospital with 6 beds from 01 November 2011 and since 10 March 2014 the Pulmonary Ward of Limassol General Hospital with 5 beds).

2. **Application of Clinical Protocols by the Respiratory Department**
   The Respiratory department of Nicosia General Hospital applies evidence based, up to date, clinical protocols for a range of therapies instituted (treatment of community acquired pneumonia, pulmonary embolism, COPD exacerbations), protocols for patient isolation (for inpatients with communicable diseases), protocols for disease prevention (handling of urinary catheters, hand hygiene), protocols of evaluation of specific diseases (pulmonary hypertension, pleural effusion) and routine procedures protocols (e.g. bronchoscopy and thoracoscopy). These are protocols that define the range of tasks and interventions that should be performed by the various professional groups of the clinic (physicians, nurses, physiotherapists) in a standardized fashion to selected groups of patients for optimal patient care and minimization of staff errors. It is a worldwide fact that application of clinical protocols leads to improved quality of care to the patient and increased satisfaction of both staff and patients with reduced health expenditure by reducing treatment times, minimizing medical errors, and limiting diagnostic tests.

3. **Department of Outpatient Services**
   In the outpatient clinic of the Respiratory Department, we regularly evaluate referrals from other specialities, as well as follow up of patients suffering from various chronic respiratory diseases. For the optimal and up to date treatment, guided by international clinical protocols, patients are grouped according to diagnosis and thus the following Clinics are in place with scheduled appointments:
   - Bronchial asthma clinic
   - COPD clinic
   - Interstitial pulmonary disease clinic
4. Pulmonary Consultations for inpatients of other departments
Pulmonary physicians are asked to consult on therapy and further evaluation of hospitalized patients in other departments with pulmonary complains or needing pre-surgical evaluation. Appropriate recommendations are made to address the respiratory problem of the patient and if necessary, patients are transferred to the Respiratory Department for further disease management.

5. Laboratories and examinations

5.1 Portable simple Spirometry for evaluating the pulmonary function of patients or inpatients needing pre-surgical evaluation.

5.2 Full Pulmonary Function Test: The Pulmonary Department has a state-of-the-art laboratory for complete evaluation of respiratory system. Measurement of Static and dynamic lung volumes, the diffusion capacity of the lungs and even respiratory muscle strength is possible.

5.3 Allergic skin tests: These are specialised test conducted in the investigation of atopy. The test includes 13 types of airborne allergens.

5.4 Methacholine challenge test: Specialised provocation test for patients investigated for asthma.

5.5 Sleep Study Laboratory for Diagnosis of Obstructive Sleep Apnea (OSA) and Other Sleep Disorders
The Respiratory Department has a state-of-the-art sleep study center for the diagnosis of OSA and other sleep disorders. Three scheduled sleep studies are performed each night in the Respiratory Department. Patient diagnosed with OSA are prescribed tailored personalised therapy and are followed up in the Sleep Medicine clinic. Psychosocial support and specialised patient training is provided for the use of non-invasive ventilation devices (CPAP, BPAP) with the given devices being regularly checked for proper function as well as measuring of patient compliance to therapy.

5.6 Cardiopulmonary Exercise Testing (CPET)
The Respiratory Department operates a state-of-the-art CPET laboratory in which patients are referred from both the public and the private sector. In clinical practice it is used for evaluation of dyspnea, assessment of disability in various disease states, assessment of exercise capacity, assessment of severity/prognosis of various diseases, and follow up of therapy. Furthermore the laboratory is used for screening heart transplant candidates and evaluating Chronic Obstructive Pulmonary Disease patients before and after the Pulmonary Rehabilitation Program.

5.7 Bronchoscopy
In the Respiratory Department, Bronchoscopy is performed with the flexible bronchoscope, first introduced to the public sector by Dr. Georgiou in 1993. State of the art diagnostic and therapeutic techniques are available for individualised patient care, including “auto fluorescence”, “Cryotherapy”, “Nd-Yag Laser”, endobronchial stents, all performed through flexible bronchoscopy under mild sedation. The clinic also has available a simulation manikin for Bronchoscopy training of resident doctors. In 2012, the need for surgical biopsy in mediastinal lymphadenopathy decreased substantially with the availability of Transbronchial biopsy Needle Aspiration (TBNA) performed through simple flexible bronchoscope. A new method, the Endobronchial valve (EBV) therapy, is also performed in Respiratory Department (start on 2017) through simple flexible bronchoscope in patients with severe chronic obstructive pulmonary disease (COPD-emphysema) and is associated with improvements in COPD-related outcomes and may therefore be linked to improvements in the body mass index, airflow obstruction, dyspnoea and exercise capacity. Furthermore, since 2012, the
Respiratory Department of the Nicosia General Hospital is further equipped and regularly uses Endobronchial ultrasound (EBUS), a high tech bronchoscope combined with Ultrasound technology used excessively in lung cancer staging, but also for evaluation of random mediastinal lymphadenopathy, minimizing complications to patient with real time biopsy taking, avoiding surgery and general anaesthesia.

**5.8 Needle pleural biopsy (Abrams or Cope)**

Needle pleural biopsy is technique that enables the Pulmonary physician to acquire pleural biopsies of patients with pleural effusions minimizing the need for further invasive examinations.

**5.9 Medical thoracoscopy**

Medical Thoracoscopy is a minimally invasive technique used in our Department since 2012 for the evaluation of the pleural effusions and the pleural cavity. When necessary, it can furthermore be applied therapeutically, for pleurodesis minimizing symptoms and improving patient comfort. Semi-flex and rigit thoracoscope are available in our department and both are used sequentially for each procedure, performed under conscious sedation. In 2012, two doctors of our department were specifically trained abroad to perform thoracoscopies.

**6. Other activities**

**6.1 Schools of Bronchial Asthma and Chronic Obstructive Pulmonary Disease (COPD)**

In 2008, the bronchial asthma and COPD schools have been operating in the Respiratory Department of Nicosia General Hospital. These schools are training areas for patients and relatives of patients suffering from bronchial asthma and COPD.

**6.2 Pulmonary Rehabilitation for COPD patients**

The program of pulmonary rehabilitation was launched on November 9, 2010. The program includes various interventions for treating COPD patients to improve their overall clinical and mental status aiming at a better quality of life. It is the only available rehabilitation center for patients with COPD in both the public and private sectors.

**7. Anti-Tuberculosis (TB) Program**

The Respiratory Department is represented in the National Tuberculosis Committee and Dr. Andreas Georgiou is the supervisor of all anti-tuberculosis clinics throughout Cypriot as well as all active TB inpatients at Kyparounta Hospital Troodos. The Committee meets regularly for central planning of the national anti-TB program with the participation of all relevant bodies and the implementation of the World Health Organization (WHO) guidelines. Patients are closely followed up in the tuberculosis clinic with regular appointments.

**8. Education in the specialty of Pulmonology**

The Respiratory Department has the appropriate staff for the effective training of resident doctors and is fully equipped with state-of-the-art technology. It plans to demonstrate significant educational effort according to the standards of the European Respiratory Society (ERS), while twinning with the University of Crete’s Pulmonary Department creates a new strong dynamic in the field of education. For this reason the Respiratory Department provides full training in the specialty of Pulmonology. During the year 2016, three Pulmonary Medicine resident doctors attained full training positions in our department.

Our department also provides educational rotations in Pulmonary Medicine to General Practitioner Residents for one month and in Anaesthesiology Residents for three months. During their rotations the residents follow an educational program, including teaching presentations, training in basic respiratory radiology, in the execution and analysis of the spirometry reports, in the daily follow up and evaluation of inpatients as well as follow up of outpatients in the Respiratory Department. In the year 2016 three doctors specialized in Anaesthesiology were trained in our department.
9. Informing the public
In the context of public awareness of respiratory diseases, the Respiratory Department, since 2007, proceeded with the development of user-friendly educational pamphlets regarding specified diseases, procedures, and activities of our department. These include pamphlets for Bronchial Asthma, COPD, OSA, Community Acquired Pneumonia, Pulmonary Rehabilitation, Smoking Cessation, Bronchoscopy, Thoracoscopy, Lung transplantation, Oxygen therapy and Respiratory Physiotherapy. All pamphlets are distributed free of charge to the public and are available in the Respiratory Department.

10. Teleconferencing system
During 2012, a pilot teleconferencing system was set up to provide the opportunity to discuss incidents and participate in educational activities with foreign Respiratory Department.

11. Future plans
1. Creation of a research center for respiratory diseases, which will be staffed with trained personnel and technical equipment. The research center will carry out genetic evaluation for various respiratory diseases and application of cellular and molecular biology techniques.

2. Application of Bronchial Thermoplasty to patients with severe persistent asthma. This is an invasive bronchoscopic technique approved by the FDA in 2010 performed by administration of controlled and therapeutic radiofrequency energy to the bronchial wall, reducing local inflammation and the quantity of bronchial smooth muscle fibers.

12. Initiatives
Doctors of the Respiratory Department, headed by Dr. Andreas Georgiou, support the “Friends of the Association of Pulmonary Diseases of Cyprus”. The purpose of this association is to provide assistance and support to patients with respiratory diseases, to inform and to raise public awareness of respiratory diseases. Membership to the association is offered to anyone wishing to join.

13. Literature and participation in conferences during 2016


3. Porphyridis I, Michael M, Frangopoulos Fr, Vogazianos P, Papadopoulos A, Kara P, Charalampous Ch, Georgiadis G, Georgiou A. Rapid on-site evaluation vs. thoracoscopists impression of macroscopic findings during thoracoscopy. 19th WCBIP WCBE World Congress, 11th May, Florence, Italy