

ANNUAL REPORT FOR YEAR 2019 ON THE WORK OF “BREATHING LIFE LUNG CENTER FOR CHILDREN” IN NICOSIA-CYPRUS

The Breathing Life Lung Center continued in 2019 offering tertiary diagnostic services and therapeutic care to children from all over Cyprus with a wide variety of complex lung conditions. These services were primarily provided through the existing facilities of the Center at Makarios Hospital in Nicosia while supplementary diagnostic services were provided at the Respiratory Physiology Laboratory (<https://res-lab-pcd-service.eu/>) of the Medical School of the University of Cyprus (UCY) at the Shakolio Training Center of Clinical Medicine (SEKKI) in Nicosia.

The Primary Ciliary Dyskinesia Service (<https://res-lab-pcd-service.eu/pcd-service/>) that is held at the Breathing Life Lung Center at Makarios Hospital has been accepted in 2019 as an affiliated health care provider at the European Reference Network for Lung Disorders (ERN LUNG – PCD Core). An application for a full membership to the ERN LUNG – PCD Core has been submitted and is currently under evaluation.

Breathing Life Lung Centre Current Staffing & Provided Services

By an agreement of the University of Cyprus and the Ministry of Health of Cyprus, Dr Panayiotis Yiallourous, Professor in Paediatric Pulmonology at the University of Cyprus (<https://ucy.ac.cy/dir/el/component/comprofiler/userprofile/pyiall01>), offered his specialized services to inpatients and outpatients at Makarios Hospital. Dr Pinelopi Anagnostopoulou, Lecturer in Paediatric Pulmonology (<https://scholar.google.com/citations?user=ptMm1FkAAAAJ&hl=en&oi=ao>), has been recently recruited by the Medical School of the University of Cyprus and she is due to start offering her clinical services to Breathing Life Lung Center in January 2020. The Center is also staffed by Dr Khalid Wahbi, a Paediatrician with special interest in respiratory disorders and other allied scientists such as Aristoula Toliopoulou (Respiratory Physiotherapist), Fivos Ioannou (Nurse Specialist) and Elena Kogkorozi (Nurse).

In 2019, the number of incidents served at the Breathing Life Lung Center is 3,023. These were clinical services and consultations to children with complex respiratory disorders referred from all over the Republic of Cyprus, the Turkish Cypriot Community in Northern Cyprus and the British Military Forces. A wide array of specialized diagnostic procedures were performed including flexible bronchoscopies (n=20), nasal epithelium biopsies for cilia studies (n=35), 24 hr pH-impedance studies (n=30) and overnight sleep studies (n=25). The Center also provided clinical placements and training in paediatric respiratory disorders to UCY 5th Year Medical School students, as part of their curriculum under the supervision of Prof Yiallourous.

In parallel at the premises of the Medical School at the Shakoleio Training Center of Clinical Medicine (SEKKI) (<https://www.ucy.ac.cy/medical/en/>) in Nicosia, the established Respiratory Physiology Laboratory for Children continued to offer diagnostic services to patients with the most complex respiratory cases. Several patients have benefited from diagnostic lung function assessment, exhaled nitric oxide measurements and nitrogen washout for the assessment of lung clearance index with the state-of-the-art nitrogen washout technique (Exhalyzer D, Ecomedics).

Research Activity at Breathing Life Lung Centre

Research activity continued in 2019 under the umbrella of the Medical School with collection of clinical data and participation of patients from the Breathing Life Lung Center at Makarios Hospital and the Respiratory Physiology Laboratory at SEKKI. The main thematic areas covered by this research are Childhood Asthma and Allergies, Primary Ciliary Dyskinesia, Cystic Fibrosis and Environmental Health.

In particular, the large four-year LIFE+ European grant under the supervision of Prof Yiallourous is progressing well and has completed two year examining the effects of desert dust storms in children with asthma and adults with heart arrhythmias (LIFE16 CCA/CY/000041) (<https://www.life-medea.eu/>).

In 2019, external funding has been secured for another three projects where Scientists of the Breathing Life Lung Center are participating as leads of Scientific Work Packages:

1.Motile ciliopathies: Understanding the molecular basis and introducing new technologies towards diagnosis and treatment. Project Acronym: PCD (Funded by Research Promotion Foundation (Sustainable RTDI System, Excellence Hubs, RESTART 2016-2020)

2.Ciliary Adhesions and their role in Ciliogenesis and Ciliary function. Project Acronym: CILIA (Funded by Research Promotion Foundation (Sustainable RTDI System, Excellence Hubs, RESTART 2016-2020)

3.Biometeorological Aspect of Thermal environment and Health: impacts on public health and on special populations to improve the quality of life and tourism sustainability. Project Acronym: BeAT Heat (Funded by Research Promotion Foundation (Sustainable RTDI System, Excellence Hubs, RESTART 2016-2020)

Furthermore the internally funded project on the Molecular epidemiology of respiratory pathogens (pseudomonas species) in Cypriot CF and PCD patients is continuing.

How can the Centre be improved?

The expansion of the clinical and research activities performed at the Center has made more pressing the requirement for further space to deploy these services. The existing Wing where the Center has been located since 2009, is partly used by other Units (Ophthalmology, ENT and Rheumatology) for holding Outpatients Clinics on some days of the week due to the lack of space faced in general at Makarios Hospital. The lack of space in the existing Wing is now more than evident to visiting patients and their families and it is a significant limitation in the development of new diagnostic tests and services. It is also a major limitation for the accommodation of new specialized academic personnel in the field of Paediatric Pulmonology, which is employed through the Medical School of UCY.

The Ministry of Health of Cyprus and the leadership of Makarios Hospital have been examining two possible solutions to the problems posed by the lack of space in the current building. The first is the building of new Wing in the vicinity of the existing Hospital that will accommodate the very much needed new dedicated Accident and Emergency facility for Children and some

other Units, including the Breathing Life Lung Center for Children. The second option is the building of an entirely New Hospital for the Mother and the Child, properly designed to accommodate the current Units of Makarios Hospital and the new needs in the field for the next 30 years.

A New Dedicated Accident and Emergency Facility for Children

Cyprus is the only country in the EU that does not have a dedicated Accidents and Emergency (A&E) Department for Children and Women. Currently, all acute paediatric cases that present after working hours are sent to the A&E Department at the Nicosia General Hospital where they are seen by non-paediatric specialists and after several hours of delay are sent to Makarios Hospital to be evaluated by the on call Paediatricians. The current modus operandi causes great discomfort to the ill and vulnerable children and their families and poses serious risks at the expense of their health and sometimes to their lives.

The Ministry of Health of Cyprus and the Directors of Makarios Hospital have acknowledged the immediate need for building a new dedicated Accident and Emergency Facility for Children and Women. In this regard, a Committee of Experts was created at the Hospital under the leadership of Professor Zacharias Zachariou, Professor in Paediatric Surgery at the Medical School of UCY, with the mission to prepare a proposal for the establishment of the New A&E Dept. The Ministry of Health has approved the initiation of the works for the New A&E Dept in the coming year.

The Need for a New Children's Hospital

In general, Makarios Hospital's premises are no more suitable to accommodate the Mother and the Child healthcare services as it was originally designed. The premises are already 35 years old (built in 1983) and lack behind both in terms of space but also in coping with the modern approaches and designs in hospital healthcare of the present and the future. The need for building a new University Hospital for Children and Adolescents and a Center for Perinatal Medicine at the vicinity of the Nicosia General Hospital has been proposed in last years (<https://cyprustimes.com/kypros/kinonia/protasi-gia-panepistimiako-nosokomio-gia-pedia-parousiasan-papadopoulos-ke-nikola%ce%90dis/>) by politicians (Presidential Candidate Nikos Papadopoulos), academics (Professor Kypros Nikolaides), interested investors (McGill University, Canada) and charity organizations. Although this venture is still in the discussion stage and it will definitely take 5 to 10 years to materialize, should the final decision is taken, it remains an inevitable necessity for the intermediate and far future of children's healthcare in Cyprus.



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