

Dharmage Shyamali (Orcid ID: 0000-0001-6063-1937)

Editorial Office Notes:

RES-19-1018

LETTER FROM ASIA-PACIFIC AND BEYOND

Publication Fee Waiver: YES

Volume number: 25

Author Manuscript

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as doi: [10.1111/resp.13758](https://doi.org/10.1111/resp.13758)

Letter from Sri Lanka

Key words: Sri Lanka, Respiratory Medicine, Pulmonology

Last decade witnessed a revolution in the practice of respiratory medicine in Sri Lanka. These include better diagnosis of lung diseases, advanced therapeutic modalities, wider use of technology and increased awareness on respiratory illnesses including diseases of airways, interstitium and pleura among medical fraternity and the public. These changes have occurred in parallel with the advancement of pulmonology as a medical specialty in the National Health System. While celebrating such achievements and advances in the developing Island Nation, this is a good juncture to look back over the path treaded, identify challenges waiting around the corner and propose the way forward for Respiratory Medicine in Sri Lanka beyond 2020.

Respiratory diseases have a major impact on the Sri Lankan Health System. Together, chronic respiratory diseases and pneumonia caused the highest number of hospital deaths in 2017, which accounted for 39.3 (18.0%) out of 218.5 deaths per 100,000 population. Furthermore, comparison of proportionate mortality data during the past decade revealed a rising trend of deaths in hospital due to these two conditions (Figure 1).¹

In Sri Lanka, obstructive lung diseases comprise a major proportion of lung diseases in all age groups. These carry a huge disease burden, both socially and economically. Prevalence of wheezing or persistent nocturnal cough among pre-school and school children was over 20% in the Sri Lankan arm of the International Study of Asthma and Allergy in Children in 2002.² A survey of self-reported diseases in 2014 found asthma to be the most prevalent chronic disease in those under 35 years of age.³ A substantial gap between the disease prevalence and asthma management was observed in a cross sectional study in 2016, which found wheezing prevalence in adults to be 24% (95% CI: 22.0%-25.9%) but only 11% (95% CI: 9.6%-12.5%) was using medication.⁴

The Burden of Lung Diseases (BOLD) survey revealed an overall prevalence of COPD of 10.5% (95% CI 8.8%-12.2%) among Sri Lankan adults over 40 years. Among males, the prevalence was 16.4% [95% CI 13.2%-19.5%], compared to 6.0% [95% CI 4.2%-7.7%] in females who are largely non-smokers.⁵ Some plausible causes include outdoor and indoor air pollution.

The rising problem of poor air quality is claimed to be responsible for the rise of respiratory diseases, namely obstructive lung diseases, interstitial pneumonitis and lung cancers. Urbanization and exponential increase of motor vehicles are blamed for poor ambient air quality throughout the country.^{6,7} Many groups of professionals and conservationists have been lobbying for an improvement in air quality in the recent past, creating a substantial

public awareness on the quality of air they breathe. However, there is no proper air pollution-monitoring network maintained by the relevant authorities.

Furthermore, the awareness on indoor air quality remains poor. Just as outdoor air pollution is a growing problem in the cities, indoor pollution emerges as a threat in rural communities, where firewood is used for cooking in poorly ventilated kitchens. Late onset wheezing is more prevalent among non-smoking women from rural communities.^{8,9}

The Sri Lankan Government and the National Authority on Tobacco and Alcohol (NATA) can be proud of its anti-smoking campaign during the last decade. They have succeeded in restricting public smoking by introducing new legislations, increasing duty on imported tobacco and displaying 80% pictorial warnings on cigarette pack covers.¹⁰ Nevertheless tobacco smoking remains a challenge among certain social strata, especially among manual labourers and unemployed.¹¹

Despite the reduced rates in tobacco smoking, lung cancer is rising, especially among non-smokers and females.¹² This could partly be explained by increasing detection, which is due to the wider availability of diagnostic facilities, including chest radiographs, computed tomography and bronchoscopy. While the free availability of newer anti-cancer drugs in the health system is one of its major achievements, health professionals are much concerned that a large fraction of cancers are still diagnosed at a late stage.¹³

The island network of preventive and curative services of the National tuberculosis campaign in Sri Lanka has been successful in maintaining the intermediate burden state of tuberculosis in the country, compared to the surrounding high regional disease burden, where one third of world tuberculosis burden is found in WHO South-East Asia region.^{14,15} Universal TB treatment coverage is 64% and incidence of multidrug resistance remains below 0.03 per thousand.¹⁴ Nevertheless, despite wide public awareness campaigns around the year, national case detection rate of tuberculosis remains below the WHO estimates, which is a public health concern.

The country has experienced some recent epidemics of viral influenza, disturbing the daily routine of the community of many provinces for several weeks. The associated morbidity, mortality and impact on the national economy were substantial.^{16,17} Despite the availability and access to a full range of antibiotics, hospitals have witnessed a rising incidence of pneumonia related deaths, where resistant pathogens have been detected in most cases. Emergence of multi-drug resistant bacterial pneumonia is an increasing concern among the physicians and microbiologists.^{18,19}

General practitioners are increasingly aware of newly emerging and uncommon respiratory illnesses including primary and secondary interstitial pneumonias, obstructive sleep apnoea, pneumoconiosis, occupational lung diseases, etc. As a result, many suspected cases are increasingly referred to pulmonology clinics. With the advancement of disease survival and life expectancy, we see more people living with end-stage respiratory diseases, where the concept of palliative care plays an important role in their management.

The “Year 2020 and beyond” presents many challenges to all stakeholders to uplift the quality of the respiratory services in Sri Lanka. The College of Pulmonologists works tirelessly with health administrators, policy makers, the National TB campaign and other professional bodies to streamline and decentralize respiratory services to all corners of the country. Numerous academic and health education programs on communicable and non-communicable lung diseases are conducted regularly for general practitioners and the public.²⁰

Availability of human expertise and access to diagnostic technology including spirometry, radiology and bronchoscopy services and acute respiratory medical services including non-invasive ventilation is improving substantially in peripheries of the country. However, access to cancer screening, multi-disciplinary cancer services, endobronchial ultrasound and thoracic surgical facilities, respiratory high dependency facilities, sleep diagnostics and pleuroscopic services need to be improved in the next decade. The Government provides free health facilities for citizens, comprising diagnostic services, hospital stay and medication, however, some treatment options like long-term domiciliary oxygen and home ventilators are not yet freely available. It is important to have a wider discussion to see how such therapeutics could be provided through special funds or insurance schemes.

Respiratory allergy and applied immunology are areas requiring much attention from clinicians and researchers in the next decade. Centres of respiratory allergy with sufficient diagnostic facilities and immunotherapy need to be established. New multi-centre research programs could be established to investigate existing gaps of knowledge such as emerging risk factors for asthma, COPD, lung cancer, interstitial lung diseases and occupational diseases. The causes and solutions for indoor and outdoor air pollution should be studied and appropriate policy decisions and actions need to be implemented with the consensus of all stakeholders.

Clinicians need to be vigilant of the challenge of emerging resistant infections, and antibiotic prescription guidelines should be implemented and monitored in all outpatient and inpatient consultations. Sri Lanka has pledged for eradication of tuberculosis in 2025, which is a mammoth challenge that will be faced by the country during the next decade. Further attention needs to be given for ambulatory respiratory services, palliation of end-stage lung diseases, community based pulmonary rehabilitation and development of a sustainable lung transplant programme.

The landscape of Respiratory Medicine is changing in Sri Lanka, in parallel to a rising burden of a number of respiratory diseases in the developing nation. Respiratory physicians, general practitioners, researchers, administrators, policy makers and the general public need to be committed in unison, to identify future challenges and devise culturally and financially agreeable solutions, for the betterment of respiratory health in the years to come.

Duminda Yasaratne MBBS, MD, MRCP¹, Shyamali C Dharmage MBBS, MSc, MD, PhD²

¹ Department of Medicine, Faculty of Medicine, University of Peradeniya, Sri Lanka

² Allergy and Lung Health Unit, Melbourne School of Population and Global Health, The
University of Melbourne, Australia

Correspondence:

Duminda Yasaratne MBBS, MD, MRCP
Department of Medicine, Faculty of Medicine
University of Peradeniya, Peradeniya 20400, Sri Lanka
Email: yasaratne@yahoo.com

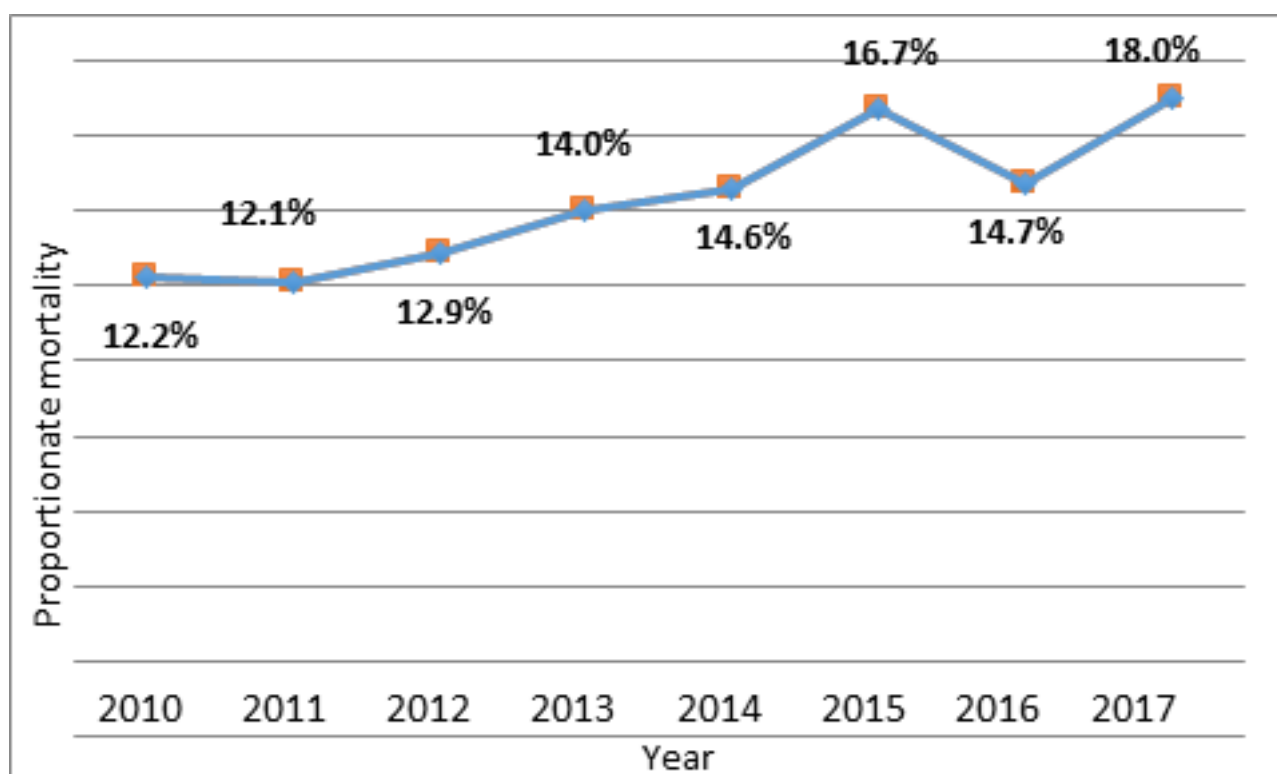
Acknowledgement: The authors acknowledge Dr Gayan Bowatta of Faculty of Allied Health Sciences, University of Peradeniya for his valuable contributions in preparing this article.

References

1. Medical statistics unit of Ministry of Health, Sri Lanka. Annual Medical Statistics 2017. Published in 2019.
http://www.health.gov.lk/moh_final/english/public/elfinder/files/publications/AHB/2017/AHS2017.pdf. (Accessed online 05.11.2019)
2. Stephen Montefort, *et al.* Worldwide time trends in the prevalence of symptoms of asthma, allergic rhinoconjunctivitis and eczema in childhood: ISAAC Phases One and Three repeat multicountry cross-sectional survey. *The Lancet* 2006;368(9537):733-43. DOI:10.1016/S0140-6736(06)69283-0. (Includes unpublished data)
3. Department of Census and Statistics. National Survey on Self- reported Health in Sri Lanka 2014. ISBN 978–955–577–994–4.
<http://www.statistics.gov.lk/social/National%20Survey%20on%20Self-reported%20Health-2014.pdf>. (Accessed online 25.10.2019)
4. Amarasiri DL, *et al.* The Prevalence of asthma in Sri Lankan adults. *Respirology*. 2016; 21(Supp 3): 58.
<http://repository.kln.ac.lk/handle/123456789/17952>. (Accessed online 25.10.2019)
5. Lakmali Amarasiri, *et al.* The prevalence of Chronic Obstructive Pulmonary Disease (COPD) in Sri Lanka: Outcome of the BOLD study. *European Respiratory Journal* 2017; 50: PA1212; DOI: 10.1183/1393003.congress-2017. PA1212. (Accessed online 05.11.2019)
6. Thishan Dharshana KG, Coowanitwong N. Ambient PM(10) and respiratory illnesses in Colombo City, Sri Lanka. *J Environ Sci Health A Tox Hazard Subst Environ Eng*. 2008;43(9):1064–1070.
7. Nandasena Y.L., Wickremasinghe A.R., Sathiakumar N. Air pollution and health in Sri Lanka: A review of epidemiologic studies. *BMC Public Health*. 2010;10:300. doi: 10.1186/1471-2458-10-300.
8. Nandasena S, Madegedara D. Cooking with firewood: More dangerous than smoking. *Sunday Observer*. Sunday, November 2019.
<https://www.sundayobserver.lk/2018/09/16/news-features/cooking-firewood-more-dangerous-smoking>. (Accessed online 25.10.2019)
9. Michael J. Phillips, *et al.* Sri Lanka Pilot Study to Examine Respiratory Health Effects and Personal PM2.5 Exposures from Cooking Indoors. *Int J Environ Res Public Health*. 2016 Aug; 13(8): 791.
10. Tobacco control laws; Legislations by country – Sri Lanka. (Accessed 05.11.2019)
https://www.tobaccocontrolaws.org/legislation/factsheet/policy_status/sri-lanka.
11. Pubudu Upekshana Chulasiri, *et al.* Factors associated with smoking among adult males in Sri Lanka - a cross sectional analytical study. *Journal of the Postgraduate Institute of Medicine* 2017;4(2):E55 1-12. DOI:10.4038/jpgim.8158.
12. Madegedara D, Yasaratne D, *et al.* Rising burden of lung cancer in non-smoking females in Kandy, Sri Lanka. *European Respiratory Journal* 2013; 42(57); P4510.
13. Dassanayake DLB, *et al.* Staging of lung cancer in a tertiary care setting in Sri Lanka, using TNM 7th edition. A comparison against TNM6. *BMC Res Notes*. 2012; 5: 143. DOI: 10.1186/1756-0500-5-143.

14. World Health Organization. Tuberculosis Country Profiles 2018 – Sri Lanka. www.who.int/tb/data. (Accessed online 05.11.2019)
15. Nani Nair, Fraser Wares, Suvanand Sahu. Tuberculosis in the WHO South-East Asia Region. *Bull World Health Organ* 2010;88:164. DOI:10.2471/BLT.09.073874
16. Epidemiology unit of the Ministry of Health, Sri Lanka. Current situation of seasonal influenza in Sri Lanka. 2015 update. <http://www.epid.gov.lk>.
17. Medical Research Council of Sri Lanka. Official newsletter of National Influenza Centre. Dec 2017; 42: 1-2. <https://www.mri.gov.lk/assets/Influenza/Dec-2017>.
18. Jayatilleka K. Increasing antibiotic resistance in a tertiary care hospital in Sri Lanka. *Sri Lankan Journal of Infectious Diseases* 2014;4(2):108-114. DOI: <http://dx.doi.org/10.4038/sljid.v4i2.6851>.
19. Liyanapathirana V, Thevanesam V. Combating Antimicrobial Resistance. *Sri Lankan Journal of Infectious Diseases*. 2016;6(2):72–82. DOI: <http://doi.org/10.4038/sljid.v6i2.8119>
20. Sri Lanka College of Pulmonologists. SLCP e-newsletter Jan-Jun 2017. www.copsl.lk.

Figure 1. Hospital deaths due to diseases of the respiratory system (J12-18, J20-22, J40-98) excluding upper respiratory tract infections and influenza, Sri Lanka 2010 - 2017.
(Source: Annual Health Statistics 2017 by Medical Statistics Unit, Ministry of Health)



RESP_13758_Figure 1.tif