The Impact of Spirometry in Early COPD Detection and Management in Primary Care

M.K. WONG, L.M. LEUNG, K.F. LAM, Y.S. NG

Department of Family Medicine and Primary Health Care, NTWC, Hospital Authority

INTRODUCTION

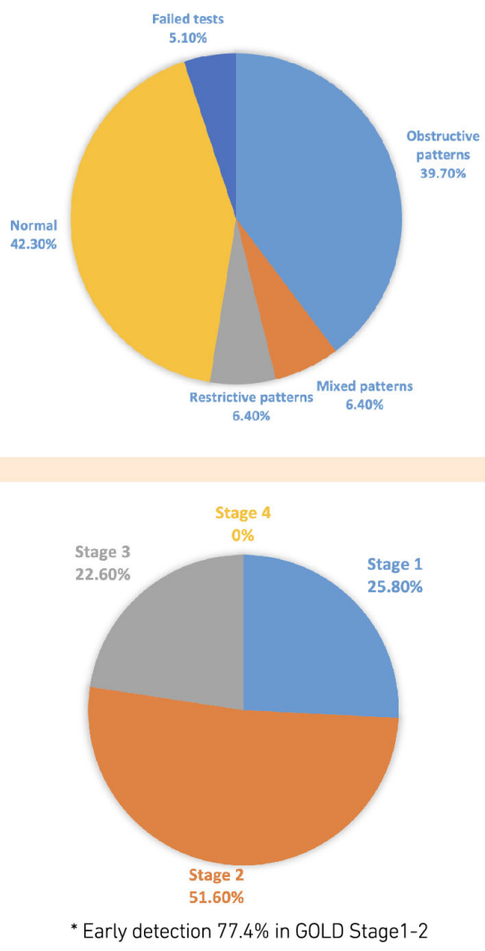
Chronic Obstructive Pulmonary Disease (COPD) remains significantly underdiagnosed in primary care despite its substantial impact on patient health and healthcare system. As spirometry services resumed post-COVID in April 2023, our study evaluated its impact on COPD diagnosis and management in a primary care center.

METHODS

We implemented a multidisciplinary structured COPD protocol incorporating spirometry with GOLD staging, COPD Assessment Test (CAT) dysnoea tool, medication optimization, inhaler education, vaccination programs, Smoking Cessation Counseling Service with lung age explanation and provision of COPD information cards for urgent doctor consultations in case of exacerbation. Physicians referred patients based on risk factors such as smoking history or respiratory symptoms for COPD evaluation. Advanced Practice nurse conducted all spirometry assessments.

RESULTS

From 11/5/2023 to 28/2/2025, 78 patients (26.9% females, 73.1% males, with age 25-88 years) underwent evaluation including 37.2% (29/78) current smokers and 32% (25/78) ex-smokers.



* Early detection 77.4% in GOLD Stage1-2

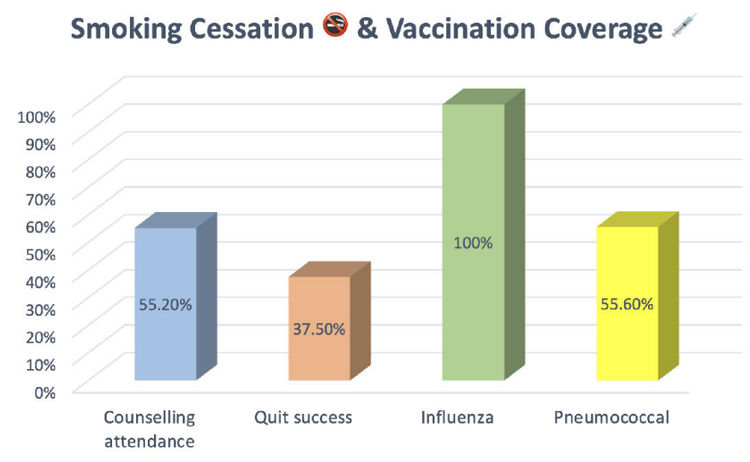
SPIROMETRY RESULTS

Spirometry results revealed that 39.7% (31/78) demonstrated obstructive patterns and 6.4% (5/78) showed mixed obstructive-restrictive patterns. Therefore, 46.1% (36/78) received a COPD diagnosis.

DISEASE SEVERITY (GOLD)

Disease severity distribution showed 25.8% (8/31) in Stage 1, 51.6% (16/31) in Stage 2, and 22.6% (7/31) in Stage 3. Spirometry effectively identified early-stage COPD (77.4% in Stages 1-2).

The smoking cessation program demonstrated promising results, with 55.2% of current smokers (16/29) attending counseling and 37.5% of attendees (6/16) successfully quitting. Preventive care measures showed complete influenza vaccination coverage (100%, 36/36) among COPD patients, while pneumococcal vaccination rates reached 55.6% (20/36). Notably, no patients required ad-hoc doctor consultations, suggesting effective disease management through the implemented protocol.



CONCLUSIONS

The study underscores the need for continued emphasis on early detection through spirometry and comprehensive care approaches to improve outcomes for COPD patients in primary care settings. Future efforts should focus on expanding access to spirometry, improving pneumococcal vaccination rate and enhancing patient education initiatives to further optimize COPD management.

Keywords: Spirometry, COPD, Primary care