

ORIGINAL ARTICLES

Management of COPD in Primary Care in North-East Scotland

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ABSTRACT

Introduction

We wished to obtain a snapshot of current service provision and how this could best be developed approximately one year on from the introduction of the National Institute for Clinical Excellence (NICE) guidelines for the management of chronic obstructive pulmonary disease (COPD) and the inclusion of COPD care in the New GMS Contract Quality and Outcomes Framework (QOF).

Methodology

A questionnaire-based survey sent to every general practice (n = 84) in Grampian.

Results

Responses were received from 75 of 84 practices (89%). Questionnaires were returned by both general practitioners (GPs) and practice nurses in 45 practices (54%). All responding practices reported that they had COPD registers. 60/75 (80%) of practices reported having a dedicated COPD clinic; 70/75 (93%) had a spirometer. Areas identified for service development were: quality assuring training in COPD care and spirometry; expanding pulmonary rehabilitation provision (86%), delivering this service locally (54%) and in primary care (75%); standardising referral, assessment and communication about provision of home oxygen; training in pulse oximetry (71%).

Conclusion

This data has important implications for the validity of the quality indicators (QOF) under the new GMS contract. Our respondents identified areas where the new GMS contract QOF could be improved, as well as providing useful suggestions for service development. Respondents recognised that not all clinical services can be effectively delivered by general practice with data supporting the development of intermediate care services for people with COPD.

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is increasingly recognised as causing a major impact on patients and on health service resources. This is yet to peak, with morbidity and age adjusted mortality figures still increasing.¹ It currently accounts for over 10% of all acute hospital admissions and 30,000 deaths annually.² COPD is estimated to cost £818 million in direct medical costs excluding social services spending and morbidity costs.³

Managing the consequences of this disease presents a major challenge to healthcare providers, a challenge that may yet be under-estimated. Although the overall prevalence in the community is approximately 1%, rising to 5% in men aged 65-74, and 10% in men over 75 years,^{4,5} it is estimated that perhaps only one quarter of patients suffering from COPD in the United Kingdom (UK) have had their condition recognised.⁶

Although this common disease has often been seen as something of a lost cause, clinicians working in primary care can influence morbidity and mortality for their patients by providing an accurate diagnosis, supported by optimal management, and informed by clinical guidelines based on the latest available evidence. In the UK, over the past decade, guidelines from the British Thoracic Society (BTS)⁷ and the National Institute for Clinical Excellence (NICE),⁸ have been useful in raising the profile of COPD. The new service contract for general practitioners in the UK seeks to enhance quality in chronic disease management, and includes the creation of COPD registers. Amongst other things, it requires the use of spirometry as an objective component of diagnosis, as well as for monitoring of disease progression. It looks for practices to provide smoking cessation advice and support, for which practices they will be rewarded financially.⁹

We wished to obtain a snapshot of current service provision, the educational needs of GPs and practice nurses in terms of providing this service, and their views on how local service delivery could be improved approximately one year on from the introduction of the NICE guidelines for the management of COPD in primary and secondary care,¹⁰ and the inclusion of COPD care in the new GMS contract⁹ quality and outcomes framework (QOF).

Methodology

A questionnaire-based survey was sent to every general practice ($n = 84$) in Grampian, north-east Scotland in February 2005. Practice list size ranged from 550 – 20,000 with a median of 11,000 patients. The questionnaire was directed at GP principals and a copy was sent to each practice nurse (where applicable), with the request to forward it to the most appropriate colleague for completion. Two hundred and sixty five questionnaires were sent to GPs and 210 to practice nurses. Duplicates were sent to practices not responding to the initial request.

The content of the questionnaire was developed with reference to the NICE guidelines for management of COPD in adults in primary and secondary care,¹⁰ the new GMS contract Quality Outcomes Framework (QOF),⁹ and by consensus through an expert group comprising general practitioners and practice nurses with a special interest in respiratory medicine, hospital specialist nurses with an interest in COPD, a consultant respiratory physician, a health board representative, a representative from GPIAG (General Practice Airways Group), and members of the academic Department of General Practice and Primary Care, University of Aberdeen. The questionnaire was piloted on three doctors and three nurses before it was sent out.

Questions related to spirometry (availability, calibration, training, suggestions for improving the service), pulmonary rehabilitation (referrals, location, suggestions for improving the service), smoking cessation (identification, delivery of advice, sources of support, prescription of NRT), home oxygen (number of patients on home oxygen, assessment of patients), early supported discharge schemes, pulse oximetry (availability, training) and, education and training needs.

Results

Responses were received from 75 of 84 practices (89%). There were no significant differences between response rates from different areas (see Table I). Responding practices had a median of five partners (range 1 – 11) and, non-responding practices a median of 4 partners (range 1 – 6).

The return rate for questionnaires from GPs was 80/265 (30%). For practice nurses this was 70/210 (33.33%). Questionnaires were returned by both GPs and practice nurses in 45 practices (54% of total number of practices, and representative of the locality).

Table I Response Rate by Locality

Practice locality	Response rate (%)	P value (<i>chi-square</i>)
Aberdeen City	30/34 (88)	0.16
Aberdeen Shire	32/34 (94)	
Moray	13/16 (81)	
Total	75/84 (89)	

All responding practices reported that they had COPD registers. There was a dedicated COPD clinic in 60/75 (80%) of practices.

Training

Only 3/75 (4%) of responding practices stated that they did not have a nurse. Of those which had nurses, 68 practices reported having at least one practice nurse with 62 of these practices reporting that the practice nurse(s) had received training in COPD care. This training was received through a variety of providers (Table II) with most practice nurses receiving a combination of NHS training and locally delivered training from pharmaceutical companies/representatives.

Of these, 16 nurses had a National Respiratory Training Centre (NRTC) COPD certificate. Training in spirometry was most commonly reported (see below).

Table II Sources of Nurse Training.

Source of training	No. of nurse respondents who had receiving training from this source
1. Nationally delivered or recognized training	16
2. Locally delivered training	10
3. Pharmaceutical companies/reps	6
4. Combination of 2 & 3	19
5. Local and nationally-delivered training	3 (plus 4 from 1 above also)
Total	54
Information on training source not provided	8

Spirometry

There was a spirometer in 70/75 (93%) of responding practices. No spirometer was held by 10/146 (7%) of respondents (8 GPs and 2 practice nurses, from 8 practices).

The type of spirometer in their practice was not known by 57/136 (31%) of respondents. From those that did know, it was clear that several different types of spirometer were

used, with Vitalograph (Vitalograph Ltd) (n = 34) and Micro Medical (Micro Medical Ltd) (n = 39) models being most common. It was not possible to determine model of spirometer from some responses.

Spirometers were never calibrated by 13 practices (17%). Of the 13, nine (69%) had precalibrated spirometers (Micromedical). Of 32 respondents with Vitalograph alphas, which require calibration before every session, 19/32 (59%) of respondents stated that they calibrated their spirometer daily. When or how to calibrate was not known by 42 respondents (28%; 25 GPs and 17 Practice nurses) from 33/75 (44%) practices.

Spirometry training had not been received by 100/140 (70%) of respondents. At least one respondent who had received spirometry training was to be found in 69/75 (92%) of responding practices. Of those who replied that they had received training, 34/80 (42%) were GPs and 49/70 (70%) were practice nurses. In 15/75 (20%) practices, both the GP and practice nurses were trained. Local training in spirometry had been received by 86% of those who had undertaken spirometry training.

When asked the open question “Are there ways of improving the spirometry service in Grampian?”, 86 people provided suggestions (Table III) with the majority suggesting a local spirometry service and/or a spirometry advice and reporting service.

Finally, when asked if a centralised spirometry and reporting service, accessible electronically, would be of use for general practice, 108/131 (82%) of respondents replied positively.

Pulmonary Rehabilitation

Current provision of pulmonary rehabilitation is approximately 30 places per year for patients with lung disease, delivered in Aberdeen Royal Infirmary (ARI).

COPD patients are referred on for pulmonary rehabilitation by 32/108 (23%) of respondents (20 GPs and 12 practice nurses) Most respondents did not have access to a community physiotherapist for pulmonary rehabilitation (80%). Of the respondents, 102/119 (86%) (50 GPs and 52 practice nurses) believed that the current pulmonary rehabilitation service should be expanded with 62/102 (61%) (29 GPs and 33 nurses) requesting that the service should be delivered locally. Of these, the majority (45/62 or 76%) were from respondents based in

Table III Suggested Ways of Improving the Spirometry Service in Grampian.

	Number of suggestions (%)
Provision of a local spirometry service	31 (36)
Provision of an advice and reporting service	30 (35)
Specialist staff delivering a peripaletic service	13 (15)
More funding for spirometry training and calibration	12 (14)

Aberdeenshire or Moray practices (more remote from the current service).

That pulmonary rehabilitation should be delivered in both general practice and in hospital was stated by 104/139 (75%) of respondents (55 GPs and 49 practice nurses).

When asked how current pulmonary rehabilitation services could be improved, 114/150 (75%) of respondents provided suggestions: setting up pulmonary rehabilitation services locally (54%), expansion of the number of places available in the current service (22%), training more physiotherapists (17%).

Early Supported Discharge Scheme (ESD)

The Early Supported Discharge Scheme had been used by 36% (29/80) of GPs and 23% (16/70) of practice nurses. It was felt by 64% (51/80) of GPs and 66% (46/70) of practice nurses that they would like to see the ESD scheme expanded to deal with more patients, and patients from a wider geographical area within Grampian. All participants who had had a patient discharged through the ESD scheme wished it expanded.

Smoking Cessation

In relation to smoking, 138/146 (92%) of respondents stated that they asked all patients about their smoking status and 141/146 (94%) advised all patients who were smokers to quit. Most practices had a trained staff member who provided smoking cessation advice (64/75) (85%). Practices used a number of services to provide smoking cessation support (the total percentage does not add up to 100% as practices used more than one method): in-house support (71%), the local Smoking Advisory Service (75%), and the Community Pharmacy Smoking cessation support service (50%). The current smoking cessation service for their practice was reported to be adequate by 97/138 (70%) of respondents. Where this was not the case, 21 (50%) stated that more practice development and time was required to delivery the service and 21 (50%) stated that the local Smoking Advisory Service should be expanded.

Oxygen Therapy

In terms of oxygen therapy, 95/145 (66%) of respondents did not know how many patients in their practices had a home oxygen concentrator, who had domiciliary oxygen (88/142 or 62%) or had access to portable or ambulant oxygen (107/141 or 76%). However, 48/140 (34%) reported that they prescribed ambulatory oxygen for COPD patients (on the recommendation of secondary care physicians). In those who knew, most reported low numbers of patients in the practice having this equipment (e.g., the maximum number of patients from one practice with a home oxygen concentrator was 6; 15 with domiciliary oxygen). Patients were referred to a chest clinic for assessment for home oxygen by 62/82 (76%) of respondents. Usually, only frail or terminally ill patients were assessed by the GP at home. A hospital-based home oxygen assessment service would be thought to be of value by 87/139 respondents (63%).

Pulse Oximetry

A pulse oximeter had been used by 54/146 (37%) of respondents (33/80 [41%] GPs and 21/70 [30%] practice nurses) to assess whether a patient needs oxygen. A pulse oximeter was reported in 41/146 (28%) of practices. Training in the use of a pulse oximeter was thought to be useful by 98/138 (71%). A rationale for this statement was provided by 60 respondents with 45 (75%) reporting that training in pulse oximetry would be useful to assess lung function and treatment plans.

Discussion

The strength of this study is in the high response rate from practices. Only one in ten practices in Grampian did not return a questionnaire. Responses were obtained from GPs and practice nurses in more than 50% of practices. The response rate from GPs and practice nurses was roughly similar.

A possible weakness of the study is that we did not ask respondents about their use of, and how confident they were in their use of, currently available individual therapies for COPD patients. Given the methodology used and in the interests of brevity, we were unable to identify the circumstances which prompt GPs to provide oxygen, or what provision they make for monitoring effectiveness. Nor were we able to explore adherence to NICE guidelines about management of exacerbations. Furthermore, some of the data reported may be of limited relevance outside the Grampian region, given that service delivery and provision varies around the country. However, we believe that much

of the data is likely to reflect typical situations and patterns, and thus be of more general interest.

The possession of disease registers,⁹ the use of spirometry in the diagnosis and monitoring of COPD and provision of smoking cessation support and advice are quality indicators under the new GMS contract. These data have important implications for the validity of these quality markers.

All practices reported possession of a COPD register although it is likely that these disease registers are still being updated to fulfil the QOF.⁹ In other words, practices are likely to be working towards achieving spirometric validation of the diagnosis of COPD in all their patients registered as having COPD based on, for example, an episode of illness recorded in the case-notes, a chest x-ray report or reported from a local community hospital. Over 80% of practices reported a COPD clinic but, given no guidelines for responding to this question were provided in the questionnaire, we are unable to conclude whether these stand-alone clinics, separate from those for asthma and/or smoking cessation.

Not all respondents reported that their practice had a spirometer. There may be a number of explanations for this anomaly. It may be that practices without their own spirometer refer all their likely COPD patients to secondary care for assessment and diagnosis (although local protocols state that in-house spirometry should be offered by all practices). Smaller practices might find this an attractive, and, indeed, reasonable option. It may also be that those respondents within certain practices were not responsible for (or interested in) providing respiratory care, and answered in error. Cross-referencing of the data indicated that, in some instances, this did appear to be the case as other respondents from the same practices had stated that they did indeed have a spirometer.

Most practices had at least one practice nurse trained in COPD care. However, those who were trained had received training through a variety of sources so, for many, the quality and comprehensiveness of training was not guaranteed. Furthermore, more than one in three respondents had not received specific training in spirometry;¹¹ this is a cause for concern, given that spirometry performed by untrained operators is unreliable.¹² Again training came from a variety of sources, most of which were not quality assured: training

in spirometry does not necessarily guarantee quality.¹³ In this survey, we did not identify the currency of training in spirometry, or COPD care.

Maintenance of spirometers was also of concern. Although there is an important difference in the need for 'session by session' calibration between the most commonly used spirometers in Grampian, it was found that roughly four in 10 respondents, from 33 practices, did not know whether their equipment required calibration or had never calibrated them. This data is similar to that found by Lwin and McKinley.¹⁴ It is clear that important clinical decisions may be being based on spirometry results of uncertain validity.

These data, coupled with that from English surveys,^{4,5,14} support the move to improve primary care services for people with COPD in line with national guideline recommendations.¹⁰ Our respondents have identified areas where the new GMS contract Quality Outcome Framework could be improved, as well as providing useful suggestions for service development. Respondent suggestions for service delivery support the hypothesis that GPs and practice nurses already recognise the areas in which their COPD service is deficient (as detailed in this paper), and have identified their needs for training in COPD diagnosis and care. This data has informed local service development in terms of working towards a strategy to deliver quality assured COPD and spirometry training throughout the region.

Interestingly, this group of primary care clinicians appear to recognise that not all clinical services can be effectively delivered by general practice. Rather it seems that practices recognise their role in establishing a diagnosis (with a supporting advice service if needed), maintaining COPD registers, providing help with smoking cessation and continuing review. On the other hand, there seems to be support from our respondents for the development of intermediate care services for people with COPD in terms of specialist assessment services (e.g., for home oxygen) and specialist support (e.g., pulmonary rehabilitation delivered locally, Early Supported Discharge Scheme). How best to address these needs is Grampian COPD Managed Clinical Network's (MCN) next challenge.

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Declarations of interest

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