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**Report 5 of
The National Chronic Obstructive
Pulmonary Disease Audit 2008:
survey of COPD care within
UK General Practices**

**The Royal College of Physicians of
London,
British Thoracic Society and
British Lung Foundation**

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On behalf of the National COPD Audit 2008 Steering Group.

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We acknowledge and very much appreciate the time and effort given by all clinical and audit colleagues across the NHS, in order to contribute to this project.

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Finally, thanks are extended to The Health Foundation that fully funded the National COPD Audit 2008.

Key Messages

[Readers are reminded that the data are generated from a survey completed by General Practitioners (or a representative within their surgery) of patients recently discharged from hospital following COPD exacerbation. These data must be interpreted in the knowledge that this is a select group of patients, therefore].

Use of healthcare resources

- COPD patients admitted to hospital are frequent users of primary care in the 12 months prior to their admission.
- Three quarters (74%) of admitted patients make contact with their general practice in the month before admission and nearly a third (31%) have 3 or more contacts in those 4 weeks.
- Although patients make a median of 12 contacts with general practice in the 12 months prior to the audited admission, and have a median of 3 exacerbations, 51% have no contact with out-of-hours services.
- Most patients (90%) of those hospitalised with COPD were known to have the diagnosis prior to admission and exacerbate frequently. They appear to have severe COPD judged by reduced forced expiratory volume in 1 second (FEV₁) and low oxygen saturation recordings.
- 58% of patients received three or more antibiotic courses in the year prior to hospital admission, a higher level than the 42% receiving three or more steroid courses.

Disease Management

- Some 31% of patients appear not to have been seen in Practice Airways Clinics within the 12 months prior to hospital admission; the reason for this is unclear, although General Practitioners observe in free-text comment that such patients are often housebound, have significant co-morbidity, may not attend when invited or may be followed by a Hospital Chest Clinic.
[Information from the National COPD Audit 2008: patient survey has suggested that 42% of patients are also under the care of a Hospital Chest Clinic].

- An appreciable number of patients are using multiple medications, one third also having been prescribed oxygen within the last 12 months.
- The level of spirometry use is higher in primary care (74%) than reported in the hospital-based national clinical audit (55%). **[Many GP's report in free-text comment that patients have difficulty with attendance or their spirometric technique as a reason for non-recording].**
- Only 15% of the patient sample had undergone pulmonary rehabilitation in the 12 months prior to hospital admission, the precise reasons being unclear. **[Many GP's report in free-text comment that patients have difficulty with attendance due to severity of disease or that there isn't a locally available service].**
- There is excellent uptake (85%) of influenza vaccination.

Communication

- A significant number of General Practitioners appear concerned regarding the quality of discharge information they receive from their local hospitals.

Recommendations

Use of Healthcare Resources

- Contacts with primary care should be seen as opportunities for medical interventions, including optimisation of therapy, that may reduce long term exacerbation rates and prevent admissions.
- Unscheduled COPD patient contact with primary care should include an admission prevention strategy in the event of a failure of first line therapy.
- Patients requiring admission should be encouraged to access out-of-hours services that in turn should be able to access admission prevention services.

Disease Management

- Primary Care Providers and Commissioners should review the local availability and access to Pulmonary Rehabilitation for COPD patients.
- Healthcare teams should ensure patients receive appropriate clinical and medication review in line with current guidelines, whether this is provided at surgery or at home.

Communication

- Hospitals should review their arrangements for providing accurate and timely discharge information to General Practitioners.
- There should be improved sharing of patient-specific data (e.g. spirometry) between primary and secondary healthcare teams.
- Consideration should be given to having a COPD record card for patients that they can take with them to hospital.

Introduction

The last National COPD Audit took place in 2003, the results demonstrating wide variations in the management of COPD exacerbation across acute units within the UK. The Audit was followed by a series of regional educational initiatives designed to act as a catalyst to improve care across the areas of need. The National Institute for Clinical Effectiveness guidance for COPD was subsequently published in 2004; (NICE 2004)¹ so it was deemed appropriate to repeat the National COPD Audit in 2008 to assess changes in organisation of care and outcomes.

Since 2003, there has been a significant shift in clinical emphasis and responsibility for managing more COPD within primary care, much of the workload falling to Practice Nurses and GP Airways Clinics. There has been an increase in the number of schemes designed to prevent hospital admission and there is thus a requirement to begin exploring the feasibility of systematic audit across the care pathway, not restricting attention merely to the assessment of hospital-based care.

The 2008 Audit therefore includes separate elements assessing the organisation of COPD services within primary care, aspects of COPD management within GP Practices and comment from patients about their care. Reported here are the data relating to aspects of patient care in general practice prior to exacerbation.

The National COPD Audit 2008 was overseen by a partnership between the Clinical Effectiveness and Evaluation unit (CEEu) of The Royal College of Physicians of London (RCP), the British Thoracic Society (BTS) and the British Lung Foundation (BLF).

Methodology: The National COPD Audit 2008

The methodology for the full 2008 National COPD Audit is illustrated in Appendix B of this report. The separate elements of the audit are listed below.

In essence, organisation and process of care surveys were undertaken across UK Acute Hospital Units and Primary Care Organisations. There followed a clinical audit of acute COPD admissions in 96% of UK NHS Trusts. Finally, survey data were obtained from some of the patients admitted to hospital with

¹ National Institute for Clinical Excellence, 2004. National clinical guideline on management of chronic obstructive pulmonary disease in adults in primary and secondary care.

exacerbation, and their General Practitioners. The 2008 National COPD Audit therefore covered a greater part of the COPD care pathway than that of 2003.

1. The National COPD Audit 2008: resources and process of care in acute NHS units across the UK.
2. The National COPD Audit 2008: clinical audit of COPD exacerbations admitted to acute NHS units across the UK.
3. The National COPD Audit 2008: Primary Care Organisation resources and process of care survey.
4. The National COPD Audit 2008: patient survey.
5. The National COPD Audit 2008: General Practitioner survey.

Reports for each of the five elements of the National COPD Audit 2008 are available at <http://www.rcplondon.ac.uk/clinical-standards/ceeu/Current-work/Pages/copd-audit.aspx>.

Methodology: General Practitioner (GP) element

The GP survey was undertaken within the clinical audit which took place between 3rd March and 16th May 2008. Each participating acute hospital was asked to audit 60 cases of COPD exacerbation. Hospital teams were requested also to send surveys to the General Practitioners (GPs) of the first 30 audited patients at some point during the audit period. The survey questionnaire was sent to GPs with a covering letter and pre-paid envelope for return to the Clinical Effectiveness and Evaluation unit (CEEu) at the Royal College of Physicians (RCP) for data collation and analysis. All patient data were anonymised. GPs were also given an opportunity to comment in free-text within the questionnaire about the audit process itself or any other aspect of COPD care they wished to remark upon; these are summarised in Appendix A. The survey and covering letter to GPs is detailed in Appendices C and D.

The GP element of the 2008 National COPD Audit aimed not only to assess how an exacerbating population group uses healthcare resources prior to hospitalisation, but also to test the practicality of undertaking this type of audit work within primary care. The Project Team were not aware of any precedent for this type of audit, and were unclear at the outset whether the use of a paper-based survey would prove successful.

Appendix E, at the end of this report, documents the method used for data collation.

RESULTS

There were 2728 survey returns of which 207 were nil returns, either received completely blank with no explanation (24) or received blank with a reason why it was blank (183). The reasons were: patient not registered / left practice / very recently registered / temporary resident (56), GP refused to complete form for whatever reason (39), patient did not have COPD (29), patient had died (26), no patient name was stated (13), the date of the index admission was not stated (11), other reasons (9). This left 2521 cases for the main analysis which included some 33 returns where the GP completed the first page only and 9 cases where GPs were unsure about the index date. Any missing (blank) data for specific questions is omitted from the relevant analyses and is reflected by denominators of below 2521. The 2521 responses were for patients from 221 hospitals, median (IQR) of 13 (9-16) cases.

It is difficult to give a precise response rate for the GP survey because it is not known exactly how many questionnaires were sent out by each hospital. The National COPD Audit comprised 9716 clinical cases from 232 sites. The best estimate of response is 43% (2728/6354) where the denominator 6354 is the sum of 30 cases for each hospital submitting 30 or more cases to the clinical audit plus the sum of all other cases for hospitals submitting fewer than 30 cases.

1. Contact with Primary Care Services

In 90% of cases (2244/2504) the patient was known to have COPD prior to his/her admission to hospital with an exacerbation. 10% (260/2504) answered 'No' to this question, though of these some 70 patients had attended the practice airways clinic in the 12 months before the index audit admission.

Table GP1: Contact with Primary Care Services before the index admission (the first admission to hospital with a COPD exacerbation during the audit period)

	Median	IQR	Zero	1-2	3-4	5+	Cases
Number of COPD exacerbations recorded in the 12 months prior to the index admission	3	1-5	14%	31%	25%	30%	2204
Number of contacts with the GP out-of-hours service in the 12 months prior to the index admission	0	0-2	51%	32%	9%	8%	2164
Times the patient was seen in the Practice Airways clinic in the 12 months prior to the index admission	1	0-2	31%	52%	12%	5%	2122
Number of visits to the practice in the 4 weeks prior to admission	1	0-3	26%	43%	21%	10%	2201
	Median	IQR	<5	5-9	10-19	20+	Cases
Number of contacts with or visits to the practice in the 12 months prior to the index admission	12	7-20	19%	20%	36%	25%	2215

IQR = Inter-Quartile Range

For those not known to have COPD prior to their index admission the median (IQR) number of contacts with or visits to the practice in the previous 12 months before admission was 8 (3-14), n=246. The median (IQR) number of visits to the practice in the previous 4 weeks before admission was 1 (0-2), n=245.

Comment: the data suggest frequent exacerbation and high usage of primary care health resources in the 12 months leading up to admission for patients with known COPD. 31% of patients attended surgery three or more times in the 4 weeks prior to hospital admission and 74% of all patients were seen at least once in the month prior to admission. These data suggest there are opportunities for intervention that may prevent admission or reduce the severity of exacerbations. 31% of patients have not been seen in the practice airways clinic during the previous 12 months but the reason for this is unclear.

2. Spirometry

A date for the most recent spirometry recorded in patient notes was given for 74% (1871/2521) of cases. The spirometry was performed a median (IQR) of 8 (4-15) months before the survey response. Both FEV₁ and FVC values were stated without a date for 78, FEV₁ alone for 18 and FVC only for 10. Thus there was no spirometry information for 22% (544) of cases and for 436 of these it was

actually stated that no spirometry data were recorded. There was spirometry information for 84% (1893/2244) of those known to have COPD prior to their index admission and 27% (70/260) of those not known to have COPD.

FEV₁ values were stated for 73% (1835/2521) and forced vital capacity (FVC) values for 64% (1606/2521) and these are analysed further in Table GP2. The median (IQR) FEV₁ for those known to have COPD prior to their index admission was 0.88 (0.65–1.20) and for those not known to have COPD was 1.20 (0.80-2.05). For FVC the corresponding statistics were 1.84 (1.40-2.46) if known and 1.94 (1.33-2.94) if not known.

Table GP2: FEV₁ and FVC data from most recent spirometry in patient notes

	Median	IQR	<0.50	0.50-0.99	1.00-1.49	1.50-2.49	2.50+	Cases
FEV ₁	0.89	0.65–1.21	11%	48%	26%	13%	2%	1835
	Median	IQR	<1.00	1.00-1.99	2.00-2.99	3.00-3.99	4.00+	Cases
FVC	1.84	1.39-2.48	10%	47%	32%	9%	2%	1606

IQR = Inter-Quartile Range

Comment: This group of patients appears to have significant disease. There is an encouragingly high rate of spirometry use, higher than that reported in the clinical element of the National COPD Audit (55%) indicating that these data do not get transmitted to hospital. This may be a point in favour of providing a COPD record card for patients to bring with them to hospital.

3. Pulse oximetry

GPs were asked if they had pulse oximetry in their practice. In relation to these patients, 67% (1659/2474) stated they did and 33% (815/2474) stated they did not. The outcome was unknown for 47. The median (IQR) of the most recent oxygen saturation value was 93 (90-96) percent, n=994. 5% of values were below 80 percent saturation and 18% between 80 and 89 percent saturation.

Comment: The data suggest that an appreciable number have significant hypoxaemia when screened within General Practice.

4. Medication (long-acting / use of inhalers)

Prior to the admission, 59% (1419/2417) of patients were taking long-acting anti-cholinergic medication (Tiotropium / Spiriva), 61% (1370/2242) were on long-acting beta agonist medication (Salmeterol / Eformoterol – i.e. Serevent / Oxis), 69% (1534/2215) were using inhaled corticosteroids and 74% (1786/2400) were using a combination inhaler (Symbicort / Seretide). Complete Yes / No answers were given for 2089 and the combinations of these medications are shown in Table GP3. 35% (740) were on all 4 of these medications, 14% (301) on all but the anti-cholinergic medication and 11% (235) on none.

Of those on no medication, 79% (169/214) were in the group with zero or 1 exacerbations in the previous year. The number of medications was correlated (Spearman $r=0.29$, $p<0.001$) with the number of exacerbations in the previous year: – zero medication (mean 1.1 exacerbations), one medication (mean 2.8 exacerbations), two medications (mean 3.8 exacerbations), three medications (mean 3.7 exacerbations), four medications (mean 4.0 exacerbations).

Table GP3: Medication (long-acting / use of inhalers) prior to index admission

Long-acting anticholinergic	Long-acting beta agonist	Inhaled corticosteroid	Combination inhaler	N	% of 2089
√	√	√	√	740	35
X	√	√	√	301	14
X	X	X	X	235	11
√	X	X	√	181	9
X	X	√	X	115	5
X	X	X	√	100	5
√	√	√	X	63	3
√	X	√	√	63	3
X	√	√	X	58	3
X	X	√	√	49	2
√	X	X	X	47	2
√	X	√	X	39	2
√	√	X	√	35	2
√	√	X	X	22	1
X	√	X	X	22	1
X	√	X	√	17	1

Comment: An appreciable number of patients are on multiple medications.

5. Courses of prednisolone and respiratory antibiotics

Numbers of prednisolone and respiratory antibiotic courses prescribed in the last 12 months are summarised in Table GP4 below. There was a moderately strong correlation between number of exacerbations in the last 12 months with number of prednisolone courses (Spearman $r=0.65$, $p<0.001$) and with number of respiratory antibiotic courses (Spearman $r=0.69$, $p<0.001$). The numbers of courses were also correlated with the number on long-acting/inhaler medications – those on 2 or more medications had a mean of 3.4 courses of prednisolone and a mean of 4.4 courses of antibiotics, those on one medication had a mean of 2.0 prednisolone and 3.0 antibiotic courses and those on no medication had a mean of 0.7 prednisolone and 1.6 antibiotic courses.

Table GP4: Numbers of prednisolone and respiratory antibiotic courses prescribed in the last 12 months

	Median	IQR	ZERO	1-2	3-4	5-9	10+	Cases
Number of prednisolone courses prescribed in last 12 months	2	0-4	26%	32%	19%	17%	6%	2355
Number of respiratory antibiotic courses prescribed in last 12 months	3	1-6	12%	30%	25%	25%	8%	2432

IQR = Inter-Quartile Range

Comment: there is high use of oral steroids and antibiotics in this frequently exacerbating group of patients. 42% received 3 or more steroid courses and 58% received three or more antibiotic courses in the year prior to hospital admission.

6. Antibiotics rescue pack

34% (686/2041) were known to have been prescribed a rescue pack of antibiotics.

Comment: this suggests there is some evidence of self-management occurring in a third of patients.

7. Flu vaccine

The survey asked specifically whether patients had received a flu vaccine during the autumn 2007 campaign and 85% (1997/2337) of eligible patients had received this.

Comment: this area of service provision is excellent.

8. Pulmonary Rehabilitation

15% (313/2054) were known to have undergone a pulmonary rehabilitation programme in the last 12 months.

Comment: this seems to be a poor take-up but the data do not discriminate between local availability and the ability of patients to attend.

9. Prescribed oxygen

31% (707/2310) were known to have been prescribed oxygen in the last 12 months.

Comment: this is an appreciable number, and probably reflects the severity of this patient group.

10. Hospital discharge information

GPs were asked how they rated the communication of discharge information from their local hospitals. In relation to this patient mix, there were 2384 responses – 3% (78) excellent, 18% (428) very good, 34% (810) good, 32% (763) average, 10% (232) poor, 3% (73) very poor.

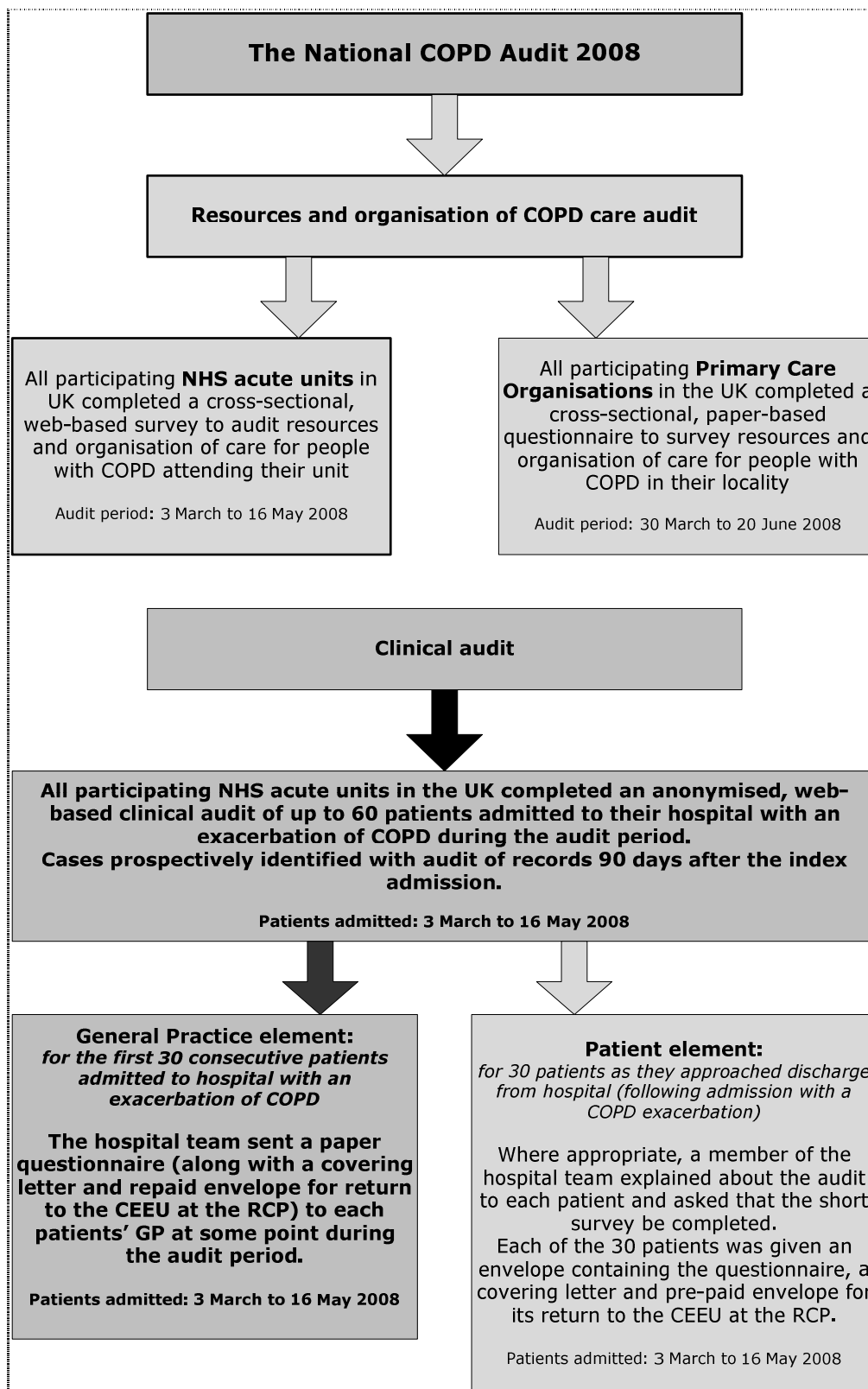
Comment: there is a need for hospitals to improve discharge information, 45% of GP's suggesting they rate discharge information as average or below.

Appendix A The National COPD Audit 2008: free-text comments from General Practice





General Practitioners were invited to append free-text comments to their survey returns. The following broad themes were extracted from these comments, which are presently the subject of more detailed analysis:

- 1.** The patient group has severe disease.
- 2.** Patients are often too frail to attend surgery, or unable to leave home, for review.
- 3.** Patients often have co-morbidity so can't attend.
- 4.** Patients tend to decline invitations to attend.
- 5.** Patients have difficulty with spirometric technique.
- 6.** Some concern that pulmonary rehabilitation services are not available locally, though severe patients may not be able to attend.
- 7.** Surgeries sometimes leave the management of patients to the local chest clinic or community COPD team to avoid duplication.
- 8.** Concern over quality of discharge information and communication from secondary care.

Appendix B The National COPD Audit 2008: methodology



Appendix C The National COPD Audit 2008: General Practitioners survey

		The National COPD Audit 2008	
General Practice Clinical Questionnaire			
Unique ID	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	For office use only	
Date of completion	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/>		
1. Was this patient known in the practice to have COPD prior to his/her admission to hospital with an exacerbation? <input type="radio"/> Yes <input type="radio"/> No			
<i>(Please record whether the patient was on your practice's COPD Register prior to his or her most recent exacerbation of COPD)</i>			
2. What was the number of COPD exacerbations recorded in the 12 months prior to the index admission?	<input type="text"/> <input type="text"/> <input type="text"/>		
<i>(The 'index admission' being the recent admission to hospital with an exacerbation of COPD)</i>			
3. What was the number of contacts with the GP out-of-hours service in the 12 months prior to the index admission?	<input type="text"/> <input type="text"/> <input type="text"/>		
<i>(Please record the number of contacts - e.g. phone advice, visits or consultations with the out-of-hours service)</i>			
4. What was the number of contacts with or visits to the practice in the 12 months prior to the index admission?	<input type="text"/> <input type="text"/> <input type="text"/>		
<i>(Please record the total number of visits to or contacts with the practice for whatever reason - irrespective of their nature)</i>			
5. How many times has the patient been seen in the Practice Airways Clinic in the 12 months prior to the index admission?	<input type="text"/> <input type="text"/> <input type="text"/>		
<i>(Please record the number of appointments the patient attended at any respiratory at the practice. If patient is seen in hospital respiratory outpatients please indicate in the comments box below)</i>			
6. What was the number of visits to the practice in the 4 weeks prior to admission?	<input type="text"/> <input type="text"/> <input type="text"/>		
<i>(Please record the number of contacts - for any reason or condition/complaint - i.e. appointments at the practice, telephone advice or home visits - irrespective of their nature)</i>			
7a. What was the date of the most recent spirometry recorded in the patient's notes?	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/>		
<input type="radio"/> None recorded			
b. What was the Forced Expiratory Volume in 1 second (FEV1) on this occasion?	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	Litres	
c. What was the Forced Vital Capacity (FVC) on this occasion?	<input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	Litres	
8a. Do you have pulse oximetry at your practice?	<input type="radio"/> Yes <input type="radio"/> No		
b. What was the most recent oxygen saturation value for this patient?	<input type="text"/> <input type="text"/> <input type="text"/> %	<input type="radio"/> None recorded	
<i>Please use this box to clarify the answers to your answers or comment on any of the above questions:</i>			
<input type="text"/>			
<i>Please ensure that you have answered all questions</i>			
Page 1 of 3			
			

9. Prior to this admission was the patient taking:

(In each case please record whether the patient was taking the following medication before the index admission)

- a. Long-acting anticholinergic (Tiotropium / Spiriva)? Yes No Don't know
- b. Long-acting beta agonist (Salmeterol / Eformoterol - i.e. Serevent / Oxis)? Yes No Don't know
- c. Inhaled corticosteroid? Yes No Don't know
- d. Combination inhaler (Symbicort / Seretide)? Yes No Don't know

10. What was the number of Prednisolone courses prescribed in the last 12 months?

11. What was the number of respiratory antibiotic courses prescribed in the last 12 months?

12. Has the patient been prescribed a 'rescue pack' of antibiotics / steroids? Yes No Don't Know

13. Has the patient undergone a Pulmonary Rehabilitation Programme in the last 12 months? Yes No Don't Know

14. Has the patient been prescribed oxygen in the last 12 months? Yes No Don't Know

15. Did the patient receive a 'flu vaccination during the Autumn 2007 campaign?
(Please record 'exempt' where it is recorded in the medical records that the patient purposefully did not receive the 'flu vaccination. E.g. patient declined or vaccine contraindicated)

Yes
 No
 Exempt

16. How do you rate the communication of discharge information about COPD exacerbation from your local hospital(s)?
 Excellent Very Good Good Average Poor Very Poor

Please use this box to clarify the answers to your answers or comment on any of the above questions:

If you would like to receive a copy of the National COPD Audit 2008 report please tick this box

If you would like to be included in the prize draw to win £500 of respiratory equipment for your practice please tick this box

Your name (Optional)

Name of your General Practice

Your telephone number

Please ensure that you have answered all questions



Dear Colleague, thank you for taking the time to answer the preceding questions; we realise you are busy but your support really will help us to improve understanding of the factors leading to hospital admission and, moreover, the resources needed to improve COPD care. If you wish, the space below is also available for you to make any points, however brief, about COPD care in general, or this questionnaire in particular:



Please return the completed questionnaire using the pre-paid envelope before Friday 23rd May 2008 to:

The National COPD Audit, Clinical Effectiveness & Evaluation Unit, The Royal College of Physicians, 11 St Andrews Place, Regents Park, London, NW1 4LE

Thank you very much for taking the time to complete this questionnaire

Please ensure that you have answered all questions



Appendix D The National COPD Audit 2008: covering letter to General Practitioners



Royal College
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The National COPD Audit 2008
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The National COPD Audit 2008

March 2008

Dear Colleague,

The National Chronic Obstructive Pulmonary Disease [COPD] Audit 2008

We write to seek your help with the National COPD Audit 2008, a collaborative project which has been approved by the BMA and whose details have already been circulated to LMC's nationwide.

In 2003, the National COPD Audit focussed entirely on secondary care provision but, in order to reflect the increased integration of COPD services into the community (often without extra resource), the 2008 audit will also encompass primary care. We need to understand better the burden COPD patients place across primary as well as secondary care but, to do this, we require information on patients' circumstances before and after admission for an acute exacerbation of COPD.

We are therefore asking General Practitioners, or their Practice Nurse, to provide some of this information by questionnaire.

Your local hospital [[insert hospital name here](#)] is participating in the audit.

Your patient, [[insert patient name, plus details here](#)] _____ has recently been included in the hospital element of the audit, and we would be very grateful if you or your Practice Nurse would please complete the enclosed questionnaire for this patient and return it to the RCP using the pre-paid envelope provided.

The code on the questionnaire is the unique site code for [[insert hospital name here](#)] so that the patient can be traced back to this hospital, but will not reveal the identity of the individual patient to the RCP audit team thus preserving patient confidentiality. Please ensure that you do not return this covering letter to us or write the patient name on the questionnaire. The RCP must not be privy to patient identifiable information.

We really do appreciate your support with this important work, and stress that we will be offering feedback of the general audit results to those of you who wish to receive them - please simply write your contact details in the appropriate place on the questionnaire. We believe the data will have a significant bearing on the emerging COPD NSF. As a token of our appreciation, we are offering participants the opportunity to enter into a prize draw for £500 worth of oximetry or other respiratory equipment for their practice. To enter, please tick the box on the questionnaire.

More information about the audit may be found on our website:
http://www.rcplondon.ac.uk/college/ceeu/ceeu_copd_home.htm

If you have any queries please contact Nancy Pursey, Project Coordinator on 0207 935 1174 ext 551 or via email copd.audit@rcplondon.ac.uk

Yours sincerely

Professor Mike Roberts
Clinical Directors of the National COPD Audit 2008

Dr Robert Stone

The National COPD Audit 2008 - helping to improve COPD services in the UK

Appendix E The National COPD Audit 2008: data collation

The returned forms were scanned automatically, one-by-one, with a manual check of every field, amending free-text and deciphering handwriting as necessary. The final database contained data from 2735 GP questionnaires. A systematic sampling method was used to check the data. From the first 25 cases on the dataset, one case was selected using random methods. This and every subsequent 28th record was checked, generating a checking sample of 99 cases. A log was kept of inconsistencies found and corrections to the database were made.

A total of 26 columns of data were checked per case by a person not involved in overseeing the initial scanning process. There were thus $99 \times 26 = 2574$ cells of data that were cross-checked between paper form and data on an excel dataset. Discrepancies were found in 24 cases though in 14 the discrepancy was in recording the detail of free-text annotations on the 3 pages of the scanned form, often information of marginal value in relation to the rest of the form.

One case was found not to have been entered at all (the record was a duplicate of another) and one case was found to be missing the latter half of information. The result of these findings was an investigation of the final dataset to confirm large gaps in any data case record and a check on duplicates using the SPSS procedure 'Identify duplicate cases'. Seven duplicate records were found and deleted but no further problems were identified. The remaining 97 checking cases either had 1, 2 or 3 data cell errors and a total of 12 cell errors were identified – 3 were dates of completion of the survey, 3 were dates of the most recent spirometry in patient notes, 2 were the number of visits to the GP practice in the last 4 weeks, and 1 each of the number of visits to the practice airways clinic, the number of prednisolone courses prescribed in the last 12 months, whether patient was on long-acting beta agonist before admission and whether patient was on long acting anticholinergic medication before admission. With 12 errors from $97 \times 23 = 2231$ relevant cells this error rate was 5.4 per thousand, or 0.54%.

With this checking exercise and subsequent checks on the SPSS database completed, the database was deemed fit for analysis.

Appendix F The National COPD Audit 2008 project governance: Steering and Implementation Group membership

The National COPD Audit 2008 was carried out by a tripartite collaboration between the Royal College of Physicians of London, the British Thoracic Society and the British Lung Foundation.

It was managed by the Clinical Effectiveness and Evaluation unit (CEEu) of the Royal College of Physicians and governed by two groups.

- A Steering Group, comprising representatives from Respiratory Medicine and Nursing, Physiotherapy, Geriatric and Intensive Care Medicine, Public Health, Primary Care and Patients. The Group met on a quarterly basis to ensure the audit's relevance to those receiving and delivering COPD services in the UK.
- A smaller executive Implementation Group met on a monthly basis to monitor progress, support and direct the project.

The National COPD Audit 2008 Steering and Implementation Group membership (members of both groups are indicated in *italics*)

- *Professor Mike Roberts, Associate Director of the National COPD Audit 2008: Consultant Respiratory Physician, Whipps Cross University Hospital NHS Trust, Barts and The London School of Medicine and Dentistry, Queen Mary University of London.*
- *Dr Robert Stone, Associate Director of the National COPD Audit 2008: and Consultant Respiratory Physician, Musgrove Park Hospital, Taunton.*
- Dr Ian Basnett, Public Health Consultant, Tower Hamlets Primary Care Trust, London.
- *Rhona Buckingham, National COPD Audit 2008 Project Manager, Clinical Effectiveness and Evaluation unit, Royal College of Physicians.*
- Maria Buxton, Consultant Physiotherapist, Central Middlesex Hospital and Brent Primary Care Trust.
- Dr John Coakley, Medical Director, Homerton University Hospital NHS Foundation Trust.
- Denise Daly, Consultant Physiotherapist, Royal Surrey County Hospital, Guildford.
- *Sheila Edwards, Chief Executive, British Thoracic Society.*
- *Professor Brian Harrison, British Thoracic Society.*
- Dr Steve Holmes, General Practitioner, General Practice Airways Group.
- Kevin Holton, Head of the COPD National Service Framework (NSF) Team, Department of Health.
- *Dr Harold Hosker, Consultant Respiratory Physician, Airedale General Hospital, Keighley.*
- *Jane Ingham, Director of Clinical Standards, Royal College of Physicians.*
- Dr Lawrence McAlpine, Consultant Physician, Monklands Hospital, Airdrie.
- Dr Phyo Myint, Honorary Consultant Physician, Norfolk and Norwich University Hospitals.
- Fiona Phillips, Public Health Consultant, COPD National Service Framework (NSF) Team, Department of Health.
- *Dr Jonathan Potter, Clinical Director, Clinical Effectiveness and Evaluation unit, Royal College of Physicians.*
- *Samantha Prigmore, Respiratory Nurse Consultant, St George's Hospital, London.*
- *Nancy Pursey, National COPD Audit 2008 Project Co-ordinator, Clinical Effectiveness and Evaluation unit, Royal College of Physicians.*

- *Carol Rivas, Research Fellow, Queen Mary's School of Medicine & Dentistry, University of London.*
- *Anil Seiger, Manager, Clinical Effectiveness and Evaluation unit, Royal College of Physicians.*
- *Dame Helena Shovelton, Chief Executive, British Lung Foundation.*
- *Teresa Smith, Chest Clinic Manager, King Edward VII Hospital, Windsor.*
- *Dr Stephanie Taylor, Reader in Applied Research, Barts and The London School of Medicine & Dentistry, Queen Mary, University of London / Honorary Consultant in Public Health Tower Hamlets Primary Care Trust.*

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