



The barriers to accessing primary care resulting in hospital presentation for exacerbation of asthma or chronic obstructive pulmonary disease in a large teaching hospital in London



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ABSTRACT

Asthma and chronic obstructive pulmonary disease (COPD) account direct costs of £1 billion each per year in the United Kingdom (UK). A national review of asthma deaths found that a significant proportion of patients die without seeking medical assistance or before emergency medical care could be provided. This study aims to establish the pathway that patients undertake to access care in the lead up to an accident and emergency (A&E) attendance and/or inpatient admission. Patients attending A&E and/or following an inpatient admission due to an exacerbation of asthma or COPD were reviewed by a specialist respiratory pharmacist during weekday working hours. Over a one-year period, 920 (224 asthma and 696 COPD) presentations for exacerbation of asthma and COPD were reviewed. Although the majority of the patients were registered with a general practitioner (GP), less than 50% received medical attention from their GP and/or had an active intervention prior to presenting to hospital. These findings correlate with those found in the national review of asthma deaths. At a time of increasing demands on healthcare resources, these results pose the question of how we can better triage patients to appropriate care settings to minimise unscheduled care and improve patient outcomes.

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1. Introduction

The National Health Service (NHS) faces the considerable challenges of an ageing population, an epidemic of long-term conditions and greater public expectations along with the need to deliver care within constrained finite resources. In the United Kingdom (UK), asthma and chronic obstructive pulmonary disease (COPD) account for direct costs of £1 billion each per year, with additional indirect costs of £6 billion and £2.7 billion respectively, due to time off work and loss of productivity [1–3]. The Department of Health suggests that it costs nearly ten times more to treat severe COPD (£1307.10 per patient/annum) compared to mild disease (£149.68 per patient/annum), with approximately 54% of this cost attributed to inpatient hospitalisation [3,4]. COPD is the fifth biggest killer in the UK, with approximately 25,000 deaths each year in England and Wales [5]. Furthermore, one person dies every 8 h from asthma, with as many as 90% of these deaths preventable [6]. A recent

national review of asthma deaths found a large number of patients die without seeking medical assistance or before emergency medical care could be provided. This review also found that 21% of patients who died, had attended a hospital emergency department with asthma at least once in the previous year, with 58% of these attending on two occasions or more [7].

Barts Health NHS Trust is the largest NHS Trust in the UK. Its largest hospital, the Royal London Hospital (RLH), accounts for one of the highest admissions of asthma and COPD in the UK, despite having a lower prevalence than the national average. In 2012/13 hospital admission rates for asthma were 14% higher than the national average, with 136 emergency admissions per 100,000 people [8]. The population of its local Clinical Commissioning Group (CCG), Tower Hamlets, is made up of 55% Black and Minority Ethnic (BME) people, which is higher than the national average of 40%. Of these, the largest ethnic group is Bangladeshi, who account for one third of all residents. Tower Hamlets serves a local population with high levels of poverty, deprivation, unemployment, social housing and significant health inequalities [9]. It is well documented that the more socially deprived the local population, the higher the chance of avoidable premature mortality and thus there is scope to reduce

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health inequalities and improve the health of those with the poorest outcomes by improving access and the quality of services [9,10].

Various factors may contribute to high asthma and COPD A&E attendances and/or inpatient admissions. These include issues around access to primary care services, proximity to A&E, urban location and a perception that patients from a socially deprived population may be less likely to be registered with a general practitioner (GP). It is recognised that rapid access to primary care is key to a fast recovery and reducing hospital admissions [11]. The most recent GP Patient Survey results suggest more than 90% make a convenient appointment at their GP surgery and thus it is not known if these presentations to hospital are appropriate referrals or ineffective use of healthcare services. This study set out to establish the pathway that patients undertake to access care in the lead up to an A&E attendance and/or inpatient admission due to an exacerbation of asthma or COPD.

2. Method

Patients attending A&E and/or admitted as inpatients were prospectively reviewed by a specialist respiratory pharmacist between Monday to Friday from 9am to 5pm over a one-year period between October 2013 and October 2014. As such patients who may have presented and subsequently discharged outside of these hours in A&E (with no inpatient admission) were not captured as part of the data collection. A week long pilot was undertaken prior to data collection to ensure the appropriateness of the data collection forms and method of data collection. Inclusion criteria included adults (18 years of age and over) with a primary or secondary cause of admission/attendance being suspected or confirmed asthma or COPD exacerbation in patients attending A&E or admitted as inpatients. Patients were identified during post take ward rounds and via hospital electronic systems. Routine clinical and demographic data, i.e. age, gender, ethnicity, spirometry and prescribed medications, were sourced from the Trust's Electronic Patient Record (EPR) system and GP surgeries. Data was anonymised and managed in accordance with NHS information governance requirements. Ethnic groups were recorded based on the local Trusts groups and collapsed into six main categories: White British (British, Irish, Other), Black British (British), South Asian (British, Bangladeshi, Pakistani, Indian, Sri Lankan), White Other (Other), Black Other (African, Caribbean, Mixed, Other) and Asian Other (Mixed, Chinese).

A structured interview with each patient was undertaken once verbal patient consent was obtained and data collection forms completed. Pathways to hospital were investigated; questions included whether patients were registered with a GP, whether they contacted the GP on this exacerbation and if so, what the outcome of this attempt was. Where patients did not attempt to contact their

GP, an analysis was undertaken to explore the reasons behind this. All analyses were conducted using Statistical Package for the Social Sciences (SPSS) 22, which allowed for descriptive and bivariate statistics, prediction for numerical outcomes and prediction for identifying groups. In accordance with the Trusts ethics guidance, ethical approval was not required as the study formed part of a service evaluation.

3. Results

Over a one-year period, 920 (224 asthma and 696 COPD) presentations for exacerbations of asthma and COPD were reviewed; all patients consented to a review. Twelve (5%) and thirty-two (5%) patients with asthma and COPD, respectively, were treated and discharged from A&E; the remainder were admitted as inpatients. As Table 1 shows, the majority of patients reviewed with asthma were female (65%, $n = 146$), with a mean age of 50 years and just over a third classed as White British (36%). COPD patients had a more even split between male and female patients (54% male, $n = 373$ and 46% female, $n = 321$), with a mean age of 70 years and conversely to asthma, the majority were White British (71%).

Figs. 1 and 2, show that the majority of patients presented to hospital on a weekday during daytime hours, with the peak time for both asthma and COPD in the early afternoon. Primary care providers are usually accessible within these peak days and times.

As Table 2 shows, 47% ($n = 102$) and 46% ($n = 301$) of asthma and COPD patients respectively, sought and received medical attention from their GP and/or had an active intervention (e.g. administration of a rescue pack of oral corticosteroids and/or antibiotics) prior to presenting to hospital. The remaining 53% ($n = 115$) and 54% ($n = 374$) respectively either did not seek medical attention or were unable to be reviewed (e.g. unable to obtain an appointment with their GP) prior to their attendance. Where patients sought medical attention, the main barriers to accessing primary care were lack of appointments within 24 h ($n = 16$ asthma (8%) and $n = 28$ COPD (4%)). Where patients did not seek medical attention prior to presenting to A&E, the main barriers cited by patients were sudden onset of symptoms ($n = 42$ asthma (19%) and $n = 140$ COPD (21%)) and anxiety of patient and/or carer ($n = 32$ asthma (15%) and $n = 122$ COPD (18%)). A small proportion of patients cited the reason for presenting to A&E were due to "lack of faith" in their GP, with 2% ($n = 4$) and 4% ($n = 24$) asthma and COPD patients respectively. The results also show that the vast majority of patients were registered with a GP.

Table 3 demonstrates how patients 75 years and over sought medical attention. Of note, 16% and 47% of patients with asthma and COPD, respectively, were 75 years of age and over. Those with asthma were more likely to seek medical attention and receive it ($n = 23$, 68%, $p = 0.04$) when compared to those with COPD. Similarly to other age groups within COPD, approximately half of

Table 1
Patient demographics.

		Asthma ($n = 224$)	COPD ($n = 696$)
Gender	Male	78 (35%)	373 (54%)
	Female	146 (65%)	321 (46%)
Age	Mean (years)	50 (SD 21)	70 (SD 14)
	Median (years)	48 (32/66)	74 (29/20)
Ethnicity	White British	81 (36%)	496 (71%)
	South Asian	90 (40%)	151 (22%)
	Black British	16 (7%)	3 (1%)
	White Other	23 (10%)	41 (6%)
	Asian Other	9 (4%)	3 (1%)
	Black Other	13 (6%)	5 (1%)

COPD: chronic obstructive pulmonary disease.

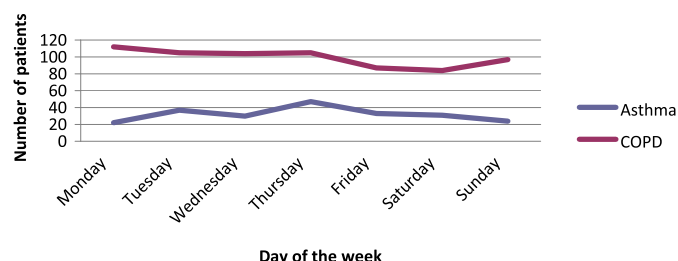


Fig. 1. Presentation to A&E by day of the week for asthma and COPD. A&E: Accident and Emergency, COPD: chronic obstructive pulmonary disease.

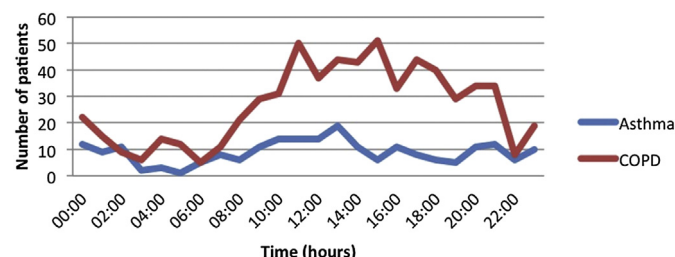


Fig. 2. Presentation to A&E by time of the day for asthma and COPD. A&E: Accident and Emergency, COPD: chronic obstructive pulmonary disease.

patients aged 75 years and over did not seek medical attention prior to their attendance to A&E.

4. Discussion

The results show that the majority of patients presented to hospital during working hours on weekdays, when GP services are readily available. Despite the majority of patients being registered

with a GP and increased GP accessibility patients sought medical attention in unexpected ways. For example, just under 50% of hospital presentations were not preceded by GP contact and may have been prevented. This correlates with the findings of a recent national review of asthma deaths where 45% of patients dying from an asthma exacerbation did not seek medical attention [7]. Tower Hamlets has a greater proportion of BME group, slightly more females and the lowest median age in the UK [9]. Thus it was expected that a greater proportion of BME groups, females and younger populations would be reviewed. However, the majority of patients were White British (63%, $n = 577$) with a mean age over 50 years. There was no significant difference in gender observed. The reasons why people do not seek primary care services initially are diverse and do not appear to be directly related to socioeconomic backgrounds and ethnicity.

With current practice and conventional pathways of care (annual reviews, Quality & Outcomes Framework (QOF), increased registration and/or access to GP), unnecessarily high utility of healthcare resources persists. At a time of increasing demands on healthcare resources, these results pose the question of how we can better triage patients to appropriate care settings to minimise unscheduled care and improve patient outcomes. We need to consider alternative approaches, for example, address anxiety, a major reason for admission. One-to-one patient and/or carer education on the management of exacerbations can help combat anxiety and worsening of exacerbation which can ultimately lead to hospital presentation. Given that patients who suffer from anxiety are more likely to have repeat admissions compared to those not anxious, a patient hotline could be created for anxiety management and to triage care [12]. Healthcare professionals delivering this service could triage genuine exacerbations from anxiety management and direct patients to seek further medical attention where necessary. In current practice, some respiratory outreach teams provide this service to patients on their caseload, for example, after repeated hospital presentation for admission avoidance. Earlier

Table 2
Pathways to Accident and Emergency and/or Inpatient Admission.

	Asthma (n = 217)	COPD (n = 675)
Registered with GP	215 (99%)	674 (99%)
Patients who sought medical attention and/or active intervention	102 (47%)	301 (46%)
Failed treatment with OCS and/or antibiotics prescribed by GP	51 (24%)	102 (15%)
Failed treatment with OCS and/or antibiotics as rescue medication	5 (2%)	62 (9%)
Failed supportive care from GP (nebuliser/steroid inhaler)	4 (2%)	10 (1%)
Failed treatment with OCS and/or antibiotics followed by second review and GP referral	7 (3%)	35 (5%)
GP referral	33 (15%)	101 (15%)
Patients who sought medical attention but did not receive it	26 (12%)	37 (9%)
No GP appointment within 24 h	15 (7%)	19 (3%)
Unable to visit surgery/GP unable to home visit	1 (1%)	9 (1%)
No access to inhalers	4 (2%)	18 (3%)
Out Of Hours	6 (3%)	17 (3%)
Patients who did not seek medical attention and/or active intervention	91 (42%)	302 (45%)
Patient/carer anxious	32 (15%)	122 (18%)
Sudden onset	42 (19%)	140 (21%)
No GP access	9 (4%)	16 (2%)
Exposure to trigger/allergen	4 (2%)	0 (0%)
"No faith" in GP	4 (2%)	24 (4%)

COPD: chronic obstructive pulmonary disease, OCS: oral corticosteroids, GP: General Practitioner.

Table 3
Pathways to access care taken by patients 75 years of age and over.

	Asthma (n = 34)	COPD (n = 318)
Patients who sought medical attention and/or active intervention	23 (68%)	135 (42%)
Patients who sought medical attention but did not receive it	2 (6%)	25 (8%)
Patients who did not seek medical attention and/or active intervention	9 (26%)	156 (49%)

COPD: chronic obstructive pulmonary disease.

identification of these anxious patients could avoid unnecessary hospitalisation.

It has previously been found that higher continuity of care with a GP and larger practices offering a wide range of services such as chronic disease clinics are associated with a lower risk of hospital admission [13]. The presence of a specialist respiratory pharmacist in asthma and COPD clinics has been shown to improve clinical outcomes and reduce unwarranted costs [14]. A specialist respiratory pharmacist could work across the primary and secondary interface to ensure appropriate triage of patients experiencing an exacerbation, offer proactive follow-up in the community for those attending A&E repeatedly and address individual needs to improve health outcomes and prevent unnecessary hospital presentations. Patients at high risk of exacerbation and/or hospitalisation could be proactively identified and managed in primary care by addressing prescribed therapies, adherence, management of exacerbations and pathways to seeking medical attention. This patient education and empowerment could prove vital in improving pathways to accessing the most appropriate care and preventing unnecessary hospitalisation.

The strength of the current study includes the fact that the data collection was undertaken by a specialist respiratory pharmacist in a large teaching hospital. Limitations of this study include being undertaken in secondary care, with the population studied more likely to be representative of the severe spectrum of asthma and COPD. Also, since maintenance therapy in COPD improves FEV1, symptoms and reduces the rate of exacerbations, this analysis represents a treated population. It would be interesting to investigate how these findings compare to pathways of accessing care outside of the UK and practices which prevent hospitalisation.

5. Conclusion

Tailored reviews by the respiratory pharmacist found that a significant proportion of patients did not seek medical attention prior to hospital presentation. Furthermore, the majority of patients presented to hospital during weekday daytime hours when

GP services are accessible. This study has demonstrated barriers associated with accessing primary care and has indicated a great number of hospital presentations could be avoided with prioritisation of these high-risk patients and appropriate patient education by a specialist respiratory pharmacist.

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