

ORIGINAL RESEARCH

The effectiveness of a social marketing model on case-finding for COPD in a deprived inner city population

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Abstract

Aim: To evaluate the effectiveness of a social marketing model on case-finding for COPD in a population with high smoking rates and COPD prevalence.

Methods: A two-week marketing campaign was conducted using high visibility posters, leaflets distributed with the local newspaper, and the creation of a free automated COPD information line. The primary outcome measure was the number of newly-diagnosed cases of COPD as a result of the campaign. Secondary outcomes measures were: the number of phone calls to the information line up to four weeks after the end of the campaign; the number of individuals who presented to their general practitioner (GP) for spirometry as a result of the campaign; and responses to a questionnaire sent to members of the public to analyse and assess the visibility and impact of the campaign.

Results: Ten people came forward to have spirometry performed and all had non-obstructive results. Nine calls were made to the dedicated COPD phone line. 135 out of 400 members of the public (34%) responded to the questionnaire; of these, only 34 (25%) recalled seeing a campaign poster.

Conclusions: Posters and leaflets from this campaign were visible but only led to 10 individuals coming forward for spirometry, none of whom had COPD. This form of healthcare marketing was costly and not effective for COPD case-finding in our area.

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Keywords COPD, case-finding, social marketing, healthcare behaviour, marketing campaignThe full version of this paper, with online Appendices, is available online at www.thepcrj.org**Introduction**

Chronic obstructive pulmonary disease (COPD) is a major cause of morbidity and mortality in the United Kingdom (UK). It is estimated that 900,000 patients have the condition with another 500,000 suffering from it but not yet diagnosed.¹ This is particularly relevant for deprived populations where rates of under-diagnosis are more prevalent.² It is suggested that lack of awareness of disease risk and limited success in changing behaviour amongst deprived populations contributes to late diagnosis and progression to more severe disease.³

Salford has higher rates of smoking compared to the UK average (Salford 35%, UK average 25%, for over 16 year

olds) and has higher levels of social deprivation as measured by the Index of Multiple Deprivation⁴ (Salford 36.51, UK average 23.73). Previously we have presented data on modelling COPD prevalence in our population using a mathematical model⁵ and have established that we currently have 5501 cases on the COPD quality and outcome framework register, with a total predicted number of cases for our population of 11500 cases. We estimate that 6000 cases of COPD in Salford are yet to be diagnosed.⁶ A screening study published in 2006 from South Manchester found that in their deprived population there was also considerable under-recording of COPD.⁷

Social marketing applies concepts and techniques from commercial marketing strategies to promote public health by influencing health behaviour.⁸ There has been little evidence evaluating the effectiveness of social marketing on healthcare

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outcomes in COPD. We therefore designed a communication model of social marketing to increase public awareness of COPD and its symptoms, with the aim of promoting attendance for lung function testing – using standard spirometry as defined by national guidelines¹ – to identify new cases of COPD.

Methods

A private marketing firm was commissioned to conduct a market analysis – using demographics on Salford provided by ourselves – and then to conduct a marketing campaign. The following interventions were agreed:

1. High visibility posters (Figure 1 – see Appendix 1 at www.thepcrj.org) to be placed on bus and tram stops, Adshel sites (bus shelters specifically designed to carry advertising posters) and in general practices, particularly targeting areas of high prevalence of COPD. COPD information leaflets (small versions of the posters) were to be distributed with the local newspaper as well as them being available to all general practices.

2. A free dedicated and automated telephone information line on COPD was developed. This offered information on COPD as follows:

Option 1. General information on COPD – its meaning, risk factors and symptoms.

Option 2. Information on how to get tested including details, with contact numbers, of the local specialist lung function service.

Option 3. Information on services available for patients with COPD in Salford, such as smoking cessation, expert patient programs, pulmonary rehabilitation support groups and other specialist services including COPD clinics.

Calls to the telephone line were electronically logged and the number of times the various options within the automated messages were accessed was monitored.

The title of the campaign – “Change for life” – was clearly quoted on the posters, the leaflets, and the automated telephone information line.

All patients presenting to their general practitioner (GP) or to the specialist lung function service for spirometry driven by the campaign were asked to quote “change for life” to enable us to track spirometry tests carried out as a result of the campaign. All GPs and practice nurses within the Salford Primary Care Trust (PCT) were contacted to ensure they were aware of the campaign, the start and end dates, and the outcome measures. Practices were also sent audit forms to collect data on patients presenting as a result of the campaign. The campaign ran for two weeks starting on April 7th 2008.

Following the campaign, a questionnaire (Figure 2 – see

Appendix 2 at www.thepcrj.org) with a stamped addressed envelope was sent to all members of the PCT patient panel to try and determine the visibility and impact of the posters.

The primary outcome was the number of newly diagnosed cases of COPD as a result of the campaign. The secondary outcome was the impact of the campaign on levels of public awareness towards COPD measured as follows:

1. Number of phone calls made during and up to four weeks after the end of the campaign to the telephone information line.
2. Number of individuals presenting to their GP for spirometry driven by the campaign.
3. Responses to the questionnaire to assess the posters’ visibility and impact on lifestyle.

Results

During the campaign 60 posters and 50,000 leaflets were distributed (40,000 with the local newspaper and 10,000 to GP practices), and the cost of the campaign was £35,235.00 (Table 1). Spirometry data collection forms were sent to all general practices in Salford (n= 54), and 38 replied (70%). Ten members of the public came forward to have spirometry, quoting “change for life”, and all of them had non-obstructive spirometry results (Table 2). No new cases of COPD were diagnosed as a result of the campaign.

A total of 400 questionnaires were circulated to the PCT’s patient panel in May 2008, and 135 (33.8%) people responded (see Table 3). The COPD campaign posters were

Table 1. Breakdown of the costs of the campaign.

| Item | Quantity | Unit cost (£) | Total (£) |
|--------------------------------------------------|----------|---------------|-----------------|
| Campaign design | 1 | 5275.00 | 5275.00 |
| Library images | 6 | 350.00 | 2100.00 |
| Artwork for posters | 6 | 100.00 | 600.00 |
| Media – Ashel 6 sheets | 60 | 275.00 | 16500.00 |
| Printing 6 sheet posters | 50 | 20.00 | 1000.00 |
| Printing posters for GP surgeries | 100 | 5.00 | 500.00 |
| Artwork for leaflets | 1 | 300.00 | 300.00 |
| Printing 6pp 1/3 A4 leaflet | 50000 | 0.06 | 3000.00 |
| Insertion into Salford advertiser (per 1000) | 45 | 20.00 | 900.00 |
| Leaflet dispensers for GP surgeries | 50 | 20.00 | 1000.00 |
| Additional artwork/library images for GP posters | 6 | 450.00 | 2700.00 |
| Additional leaflets | 6000 | 0.06 | 360.00 |
| Phone line | 1 | 1000.00 | 1000.00 |
| Total Cost (£): | | | 35235.00 |

Table 2. Patients presenting for spirometry as result of the campaign.

| Gender | Age (years) | Smoking status | FEV ₁ (L) | FEV ₁ % predicted | FVC (L) | FEV ₁ /FVC % |
|--------------|-------------|----------------|----------------------|------------------------------|-------------|-------------------------|
| MALE | 70 | CURRENT | 1.9 | 70 | 2.62 | 72.5 |
| FEMALE | 60 | CURRENT | 1.23 | 64 | 1.7 | 72.4 |
| FEMALE | 61 | CURRENT | 2.01 | 88 | 2.5 | 80.4 |
| FEMALE | 63 | EX. SMOKER | 1.5 | 72 | 1.93 | 77.7 |
| MALE | 59 | CURRENT | 2.35 | 69 | 3.33 | 70.6 |
| FEMALE | 56 | CURRENT | 1.83 | 72 | 2.18 | 83.9 |
| MALE | 65 | EX. SMOKER | 1.74 | 67 | 2.19 | 79.5 |
| FEMALE | 51 | CURRENT | 1.35 | 63 | 1.84 | 73.4 |
| FEMALE | 67 | EX. SMOKER | 1.73 | 91 | 2.15 | 80.5 |
| MALE | 83 | CURRENT | 1.16 | 70 | 1.65 | 70.3 |
| Mean: | 63.5 | | 1.68 | 73% | 2.21 | 76.1% |

FEV₁ (Forced expiratory volume in 1 second) FVC (Forced vital capacity)- Spirometry results obtained from individual GP practice spirometers

Table 3. Demographics of individuals responding to the questionnaire (n=135).

| | | |
|-------------|------------------------|-----|
| Age (years) | <18 | 0 |
| | 19-40 | 16 |
| | 41-60 | 48 |
| | 61-80 | 59 |
| | ≥80 | 7 |
| | Did not declare | 5 |
| Gender | Males | 64 |
| | Females | 68 |
| | Did not declare | 3 |
| Ethnicity | White | 127 |
| | Black or Black British | 1 |
| | Asian or British Asian | 3 |
| | Other | 2 |
| | Did not declare | 2 |
| Groups | Patients | 99 |
| | Carers | 10 |
| | Staff | 5 |
| | Did not declare | 21 |

only recalled by 34 (25%) of the respondents. The commonest sites for the posters to be seen were bus stops (17/34) followed by GP practices (4/34), and only one person recalled seeing a leaflet in the newspaper.

The main messages of the adverts were to raise awareness of lung problems, encourage people to think about their lifestyle, and encourage people to have a check up. Seventeen percent (23/135) of respondents thought they

were at risk of COPD and identified risk factors including smoking or a family history. Forty-four percent (15/34) of people who remembered seeing the posters recognised that they should change their lifestyle by exercising, making changes in their diet and stop smoking. During the campaign period only nine calls were made to the automated information line.

Discussion

This social marketing campaign was aimed at finding undiagnosed cases of COPD, as well as bringing COPD to the attention of the general public by increasing general awareness of the disease.

In terms of the primary outcome measure – the number of newly diagnosed cases of COPD – the campaign was unsuccessful, since there were no new cases of COPD diagnosed as a consequence of the campaign. Secondary outcome measures – the number of individuals who attended their local GP practices to have spirometry testing done as a result of the campaign, a survey of a representative sample of the public about their awareness of the campaign, and the degree of interest shown in contacting the telephone information line – were used to assess any increase in public awareness. Public awareness in COPD has been found to be far less than what is accepted as a minimal level of knowledge,⁹ and measuring the impact of an exercise aimed at increasing awareness can be difficult, particularly if it involves measurement of long term effects on lifestyle changes and on smoking cessation.

When implementing the campaign we targeted our messages to gain greatest benefit in the most deprived areas of the city with the highest smoking rates and highest predicted rates of undiagnosed COPD. We tailored each

poster design to each individual community but did not use focus groups in this campaign. A generic leaflet was also distributed with the local free newspaper (which is delivered to all households across the city) in an attempt to increase the visibility of our message further. Despite the large number of posters and leaflets used to disseminate the message of the campaign, the response to the questionnaire seeking information about recall of seeing the posters or leaflets was very low. This could be related to a number of factors. The 400 people from the PCT's patient panel to whom the questionnaire was sent may have been a non-representative sample of the population we were targeting; however, this panel was originally formed to represent all groups in our population and also includes patients with a variety of medical problems. A survey of a random population sample was not possible due to the difficulty in obtaining personal contact details data on members of the public and the time constraints on this project. Furthermore, the low response rate could have led to non-responder bias and therefore us not being able to measure fully the effectiveness of this intervention on the level of increasing awareness.

An initial hypothesis to explain the low number of people from the community presenting for spirometry was that those who are asymptomatic and have mild airflow limitation were less likely to come forward for testing; however, the value of finding mild airflow limitation in non-symptomatic individuals continues to be the subject of much debate. On the other hand all those who came forward for spirometry in our study had non-obstructive results. The leaflets available in the GP practices did not specifically mention the availability of on-site spirometry and this may have not prompted individuals (who thought they could be at risk of COPD) to request the test – although the posters did recommend contacting the GP or the practice nurse for advice in case an individual thought they were at risk of COPD. Importantly, despite the good response from the general practices (70%) regarding the number of people attending for spirometry due to the campaign, 16 practices did not respond and it cannot be assumed that no patients attended these practices due to the campaign. It was not the aim of this study to look at all patients attending for spirometry for clinical indications; our study only looked at those presenting as a result of the campaign.

Another factor that may have had an impact on the results could be the duration of the campaign. It is quite possible that the short period of 15 days was not enough to achieve good levels of exposure at the targeted communities; however, it was not possible to extend this duration beyond 15 days due to funding limitation.

It is accepted that knowledge alone does not always lead to a change in behaviour, especially health-related behaviour.

Cognition can lead to a change in behaviour if it is perceived to be possible,¹⁰ if there is intention to change,¹¹ and if there is no opposition; people find it easier to justify what they do than to change what they do because of what they know.¹¹ Importantly, in this population, a major factor influencing change in health behavior is context (social conditions and environmental determinants such as employment, income and education).¹¹ Therefore, the messages contained within the campaign materials may not have communicated adequately the risks associated with COPD that would necessarily prompt individual action such as attending for lung function testing.

Finding the right mix of interventions is essential to the success of a social marketing campaign. Social marketing strategies include the "4 P's" (Place, Price, Product, Promotion), audience segmentation, targeting, tailoring, counter marketing and risk communication.⁸ To improve a campaign of this nature – for COPD case-finding – in the future, other models need to be considered. This may involve the expansion of the distribution sites (Place) to other public venues like places of entertainment or re-creation. Printed newspaper adverts rather than leaflets may also be considered. Additionally, use of alternative media such as radio or television advertising may improve public exposure to the message (Promotion). Focus groups have been used in commercial advertising to improve the quality of such campaigns (Product) and the use of these groups may help in focusing the message to the required target group.¹² These recommendations, however, will increase the cost (Price) of an already expensive campaign and have to be balanced carefully against its effectiveness in finding undiagnosed cases of COPD.

Unfortunately the literature does not include studies on the effectiveness of these strategies on COPD case-finding. Nonetheless, social marketing has been shown to be effective in changing social health behaviour and is a strategy that needs to be explored further. From 1999-2002, the prevalence of smoking in young people in the United States decreased from 25.3% to 18% and the American Legacy Truth campaign was responsible for about 22% of that decrease.¹³ This campaign was a large national anti-smoking campaign and showed that using the principles of social marketing effectively can have huge impacts at a population level. Even though our study is one with negative results, it is a starting point for further research into COPD and health behaviour change, particularly amongst deprived communities.

Conclusion

Although the posters and leaflets from this campaign were widely distributed to the population of Salford, only a

relatively small proportion recalled seeing the posters and even though those people seeing them (largely) understood the main message, this did not translate into many individuals coming forward for spirometry. This form of health care marketing was costly and not effective in terms of case-finding for COPD in our area. Further research with different models is required to identify effective COPD case-finding strategies in the community.

Conflicts of interest

None to declare.

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CORRIGENDUM

Corrigendum to 'Primary care summary of the British Thoracic Society Guidelines for the management of community acquired pneumonia in adults: 2009 update' (*Prim Care Res J* 2010;**19**(1):21-27)

Mark L Levy, Ivan Le Jeune, Mark A Woodhead, John T Macfarlane, *Wei Shen Lim on behalf of the British Thoracic Society Community Acquired Pneumonia in Adults Guideline Group

The authors regret that an error occurred on page 24, Figure 1, which has already been corrected in the online version of the paper:

The asterisk under the Abbreviated Mental Test reads '*A score of 6 or less has been used to define mental confusion in the CRB-65 severity score'

and should read

'*A score of 8 or less has been used to define mental confusion in the CRB-65 severity score'.

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SHORT OF BREATH IN SWINTON?



Chronic Obstructive Pulmonary Disease (COPD) is a lung disease that over time makes it harder to breathe, it also has other names such as **emphysema** and **chronic bronchitis**.

There are services available so that you can more easily manage your condition and live a healthier, happier life.

To find out more visit your GP or practice nurse quoting "Change for Life", pick up a leaflet, or call **0800 324 7006**

Leaflets are available from Libraries and GP Surgeries

Appendix 2

Q1 Have you seen any of the images below?
(Please tick all that you have seen)



Q2 Can you remember where you saw the adverts?

Q3 What do you think were the main messages of the adverts?

Q4 After seeing the images, do you now think you are at risk of heart attack, stroke or COPD
If you answered "Yes", please say why Yes No

Q5 Since seeing the adverts, have you done anything to try and reduce your risk of a heart attack, stroke or COPD?
If you answered "Yes", what have you done Yes No

Q6 What is the postcode where you live?

Thank you for your time and for letting us have your views. Please return this form to the below address, 28th April 2008.