

# Shine 2012 final report

## Project title

myCOPD Solution - Delivering self management,  
reducing wasteful prescribing and improving compliance  
in patients with Chronic Obstructive Pulmonary Disease

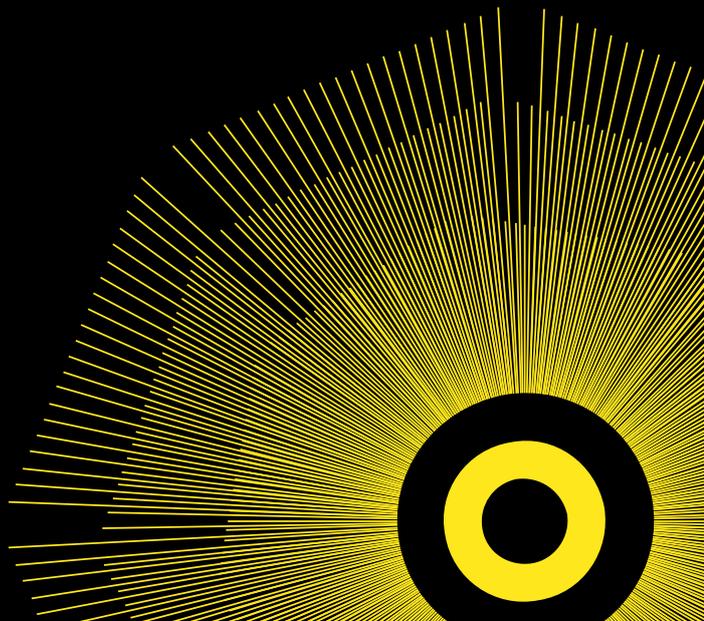
Organisation name  
HealthQuest Solutions Ltd

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March 2014

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The Health Foundation  
Tel 020 7257 8000  
[www.health.org.uk](http://www.health.org.uk)



## Part 1. Abstract

**Project title:** myCOPD Solution - Delivering self management, reducing wasteful prescribing and improving compliance in patients with Chronic Obstructive Pulmonary Disease (COPD) through a web based system and holdall

**Lead organisation:** HealthQuest Solutions Ltd

**Partner organisation:**

**Lead Clinician:** Dr Simon Bourne

Please describe your project as a narrative account (up to 800 words) that reflects the experience of the project team of implementing the project. You should include:

- Background in brief including the local problem and intended improvement
- Description of innovation
- Methods used for testing / implementation so far including ethics, plans, measures, methods for evaluation & analysis
- What you achieved – (method, process, context, challenges)
  - What went well?
  - What have been the challenges and how have these been overcome?

***In completing this section please imagine this is the information that will be used to describe your project on your website.***

### Abstract

#### Background

The NICE quality standards for Chronic Obstructive Pulmonary Disease (COPD) advocates that all patients receive a current individualised comprehensive self-management plan. Hundreds of thousands of pounds are currently being spent developing individual local solutions; however currently there is no national solution.

The aim of the project was to develop a revolutionary web based self management system (known as myCOPD) which encompasses the principles of self management in patients with COPD by; improving knowledge, skills and supporting emotional aspects of patients suffering with long term conditions. The system is enhanced with online educational pages, inhaler technique, relaxation and exercise videos. To compliment the online system the myCOPD organiser has been designed to store patient's inhaled and rescue medications.

#### Method

The development of myCOPD solution was project managed by the team at HealthQuest Solutions. The two main developments for the project were the website and the holdall. In both cases these had to be designed and developed from scratch.

## **Developing the website**

Working with web developers at Absolute Web Design we created a web based self-management system. The content of the website and algorithms were written by the HealthQuest team. The website developed consists of the following area

**Home Page** – Log in page and instruction on about how to use the system

**About Us** – Company information page

**myDetails** – This stores all the information required for patients and health care practitioners to manage their disease and deliver the annual review.

**mySelf Management Plan** – The self management plan informs patients how they should manage their medication depending on their symptoms.

**myPage** – Various widgets for monitoring symptoms, informing important appointment dates, Local 5 day weather, pollen and pollution forecasting. Access to bespoke inhaler technique videos designed to improve patients skills in using their inhaler devices.

**Contact Us** - Contact details of the company for IT support.

The planning, designing, programming and testing prior to the website going live was achieved in pre set milestones over a 6 month period. This phase of the project went without delay and according to schedule.

## **Developing the holdall**

The holdall manufacturing required comprehensive working plans. A local design company produced these. The designs were then given to a bag manufacturing company who produced a prototype to assess functionality. The initial order failed a QC check, the design was then updated and another manufacturer was sourced. The final holdall has been received well by patients as a way of storing their medication, self-management literature, oxygen alert card and inhaler diary. We also went on to develop a smaller holdall for patients with mild disease. We have had patients admitted to hospital with these, which has reduced the need for new prescribed medication, and has provided the admitting team with a comprehensive knowledge of the patients COPD treatment and history; saving time and reducing waste.

## **Cohort Testing**

Once we had the website live and the holdalls manufactured we then recruited a cohort of COPD patients to help us test and evaluate the system. We recruited 36 patients to the cohort and gave them access to the online material for a period of three month. We evaluated their inhaler technique and symptom scores before and after the 3-month period. These were then re assessed at the end of the project.

## **Feedback From Healthcare Professionals**

We developed focus groups for feedback. We also interviewed health professionals after they had a month to use the system with their patients. These health professionals consisted of 2 practices nurses, 1 Clinical Nurse Specialist and a Nurse Consultant.

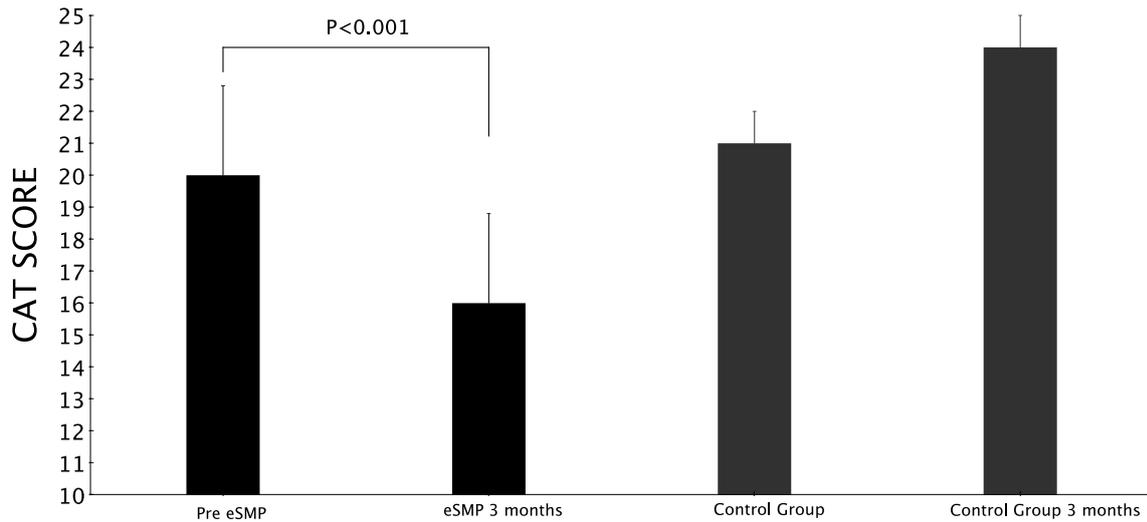
## **Further Development**

From results of the cohort testing and patient feedback we proceeded over the next few months to enhance the solution. We have finished developing v 2.0 of the solution which

now includes on line educational material, exercise programmes and anxiety management videos.

## Results

Over the life of the project we have developed a new unique web based solution for the management of COPD at both patient and organisational level. The 36 patients symptoms scores improved significantly compared to controls ( $P < .001$ ). Patient and clinical feedback has been extremely positive (see comments later in the report).



## Conclusion

We believe we succeeded in our ambition in delivering a patient self-management and clinical system for the UK. V3.0 is currently being developed to incorporate an organisational dashboard for managing patient cohorts.

## Part 2. Quality impact: outcomes

This section is intended to explain the measures of quality that you used and to detail the outcomes (up to 500 words). You should address the following points:

- Nature of setting and innovation i.e. description of where
- Course of intervention, tests of change, adjustments
- Please describe the primary and secondary data that you used to demonstrate impact on quality, including:
  - a) The source of the data and how easy it was to access
  - b) The validity and reliability of the data
  - c) Changes made demonstrated by data (please summarise using run charts, bar charts, tables or any other format that best shows changes made)
- Description of confidence; to what extent is the data on quality that you have collected clear and in line with original targets? How satisfactory are your baseline numbers in terms of data quality?
- What adjustments, if any, have you made to outcome measures from your original application?
- What is your assessment of the effect of your project on the quality of the service and the experience of patients?

The myCOPD solution study was delivered to patients in the Southampton area. Recruitment was conducted through editorials, press adverts, radio and posters placed in GP surgeries.

We used the validated COPD Assessment Tool (CAT) score to assess the impact of the web solution on patient's symptoms.

**The 36 patients symptoms scores improved significantly (see graph in abstract) compared to controls ( $P < .001$ ). The CAT score improved by a mean of 4.0 (Range 3-10). This is highly significant with symptom scores improving greater than any current pharmaceutical for this condition.**

Inhalers are commonly used in the delivery of medication for patients with COPD. There are different types of devices on the market requiring different techniques in delivering the medication into the lungs. Patients on the study had their inhaler technique recorded at the beginning and at the end of the study. Assessment of their inhaler technique was evaluated depending on the device in accordance with the manufacturers guidelines. **We found that 98% of patients were unable to follow the correct steps required for accurate delivery of the drug.**

**After the intervention 98% of patients used their inhaler appropriately.**

<http://www.youtube.com/watch?v=LWVxFDHSaSM&feature=youtu.be>

Qualitative data was also an important part of the project. We received feedback from volunteers, a focus group and health care professionals.

**See table over for results**

COPD Patient Volunteer Number	Comments
1	'My breathing is so much better since I have been using my inhalers properly. Consequently I am now doing my exercises more regularly which all helps.'
2	'I have learnt more about my COPD in the last 3 months than I have in the last 3 years since I have been diagnosed.'
3	'It has really made a difference to my daily living. I watched the demonstration video, and identified two errors with my technique, and since adapting it I have had so much more benefit from my inhalers.'
4	'Yes I think that it is very useful. It helps with the understanding and managing of COPD. I especially liked that you could keep a record about yourself that health professionals can access.'

Name of Healthcare professional	Title of Healthcare professional	Setting of Healthcare professional	Feedback
Jane Scullion	Respiratory Nurse Consultant	University Hospitals Leicester Secondary Care  Chair of the British Thoracic Society Nurse Advisory Group  Respiratory clinical lead to support the implementation of the COPD National Clinical Strategy	Effective chronic disease management starts and falls around the concept of effective self-management which requires timely and appropriate information and support. myCOPD Solution offers an innovative and practical web based self-management programme for people with COPD developed by clinicians with patients in mind. It adds to our choices when looking for practical solutions to improve the lives of people with COPD.
Justine Baker	Practice Nurse	Atherley Road Surgery, Southampton Primary Care Respiratory lead nurse for surgery	I feel the patient education section and the inhaler videos would be most useful. I often discuss with my patients about their COPD and feel this will once again re enforce the information I give them.
Melanie Bray	Practice Nurse	Bargate Medical Practice, Southampton Primary Care Respiratory lead nurse for practice	'I feel this could definitely benefit my patients. It is very interactive and informative and I feel it really informs patients of all they need to know to support them with the management of their COPD.'

## Part 3. Cost impact

This section is intended explain the measures of cost you used and to detail outcomes (up to 500 words). You should address the following points

- Please summarise your key cost measures and explain how your understanding of the financial impact has moved on since the beginning of your project.
- Describe how you have estimated the cost of existing services / pathways / packages of care. Are there any issues or limitations that need to be taken into account?
- How have you calculated the cost of the Shine intervention? Are there any issues or limitations that need to be taken into account?
- How have you accounted for the implementation costs (e.g. staff time for training and change management activity)?
- How have you demonstrated a cash-releasing saving from your Shine project? Has a benefit been realised and who has benefited financially?

The cost of currently delivering self-management plans is enormous. We have worked with several CCGs who have spent in some instances over 12 months to deliver their self-management plan for their locality. In terms of staffing and implementation the average cost is £94,000 per CCG – based on costs of salaries of people attending the meeting, printing, training and distributing. There are over 200 CCGs, so if each individual CCG adopted this route it would cost over £18million to deliver this one aspect of COPD patient care. We have delivered a solution for just under £88,000 that can be delivered to national scale.

We estimate that with training, IT scaling and product support we can deliver this self-management system to CCGs at under £20 per patient. This is less than one-month supply cost of most COPD inhalers. This system will enable them to support their underlying infrastructure costs more effectively because they will understand their population better than ever before, will receive early alerts of patients deteriorating and be in a position to manage their assets more effectively.

We have also shown that there is enormous waste in the medicine prescribed because the majority of patients are unable to take them confidently, this cost amounts to over £1bn annually! Delivering this solution for an entire CCG of patients is equivalent to 30 admissions, 150 rehab places or 300 nurse visits.

The myCOPD can also deliver aspects of pulmonary rehabilitation and for V3.0 we are building in an entire 6 weeks PR package. There are barriers to the delivery of PR, the main one being that patients find it difficult to attend appointments, which will be removed by delivering a system such as this. Currently CCGs rehab just 5% of their COPD population per year despite this being a NICE recommended therapy.

We feel a large-scale project across at least 3 CCGs is necessary to understand in more detail the impact of this web-based solution has on large populations, health care delivery and economy.

## Part 4: Learning from your project

This section is intended to summarise your achievements and the main changes observed in the quality of care (up to 850 words). Please address the following:

- Did you achieve all of what you hoped to achieve at the start of the project? If so what helped you do so?
  - For example was it the contribution of a particular individual or group of people that made the difference? Why was this important?
  - How did you get staff buy-in to carry out this innovation? Were there any approaches more successful than others? Why do you think that was the case?
  - What have you learnt about how to collect financial information?
  - Was it an aspect of organisational culture, technology or policy (national or local) that helped you?
- Please tell us about the challenges and the things that didn't work out quite as planned
  - If you didn't achieve what you hoped for, what were the reasons for that?
  - Were there any aspects of organisational culture, technology or policy (national or local) that acted as a barrier?
  - Did staff change or leave? What impact did that have?
  - What did you do to try to overcome the challenges? How successful were these efforts?
  - Were your original ambitions realistic given available resources and timescales?
- What would you do differently next time when implementing an improvement project?

Many patients with COPD are normally aged 45 and over and it has often been perceived that people of this age group may not be as IT literate as younger generations and many of our colleagues queried whether an IT solutions would be a viable solution for this patient group. The volunteers who took part in the project had an average age of 68. All of them had used computers frequently in their work place, some having over 40 years of experience working with computers before retiring. However a majority of the volunteers at the first visit admitted that they did not use their computer or access the Internet on a daily basis. Initially I wondered whether these patients would use the myCOPD solution at all. However the volunteers all wanted to be more involved in their care and wanted to be part of something that could make a difference, not only to them but also to future generations. I was delighted to find at the end of the study the volunteers had engaged with the myCOPD solution, made key decisions about their care and improved their skills in managing their own condition.

We also felt it was important to get feedback from Healthcare professionals from primary care. Two practice nurses whose patients were participating in the study agreed to give us some feedback on the myCOPD solution. These nurses were keen to help us as their practices did not have a self-management scheme in place and were generally interested in the benefit it could have on their patients. We also contacted and demonstrated the solution a national nurse leader in the field of COPD. She understands the value self management and its promotion at a national level. The feedback from the patients and nurses is shown on pages 7 and 8.

NICE quality standards give healthcare professionals guidance about how to create a quality pathway for people with COPD. At its heart lies self-management and the promotion of

pulmonary rehabilitation. We developed the solution that encompasses these key requirements in both a comprehensive and individualised way.

HealthQuest solutions is a medical IT based company and one of our major considerations and a big part of the company's culture is to ensure that rigorous data protection and privacy policies are in place and adhered to, to safeguard information. This did lead to problems accessing the myCOPD solution in primary and secondary care by healthcare professionals through the N3 network. This was because the instruction video contained within the solution was linked to a YouTube account and permission was needed for each video URL. This was granted. This then resolved the problems of access through the N3 network.

Other challenges to the project were in the recruitment of volunteers. As a private company we did not have access to patients as a NHS organisation would. So we needed to come up with a strategy to find patients who could help us. We decided to take several approaches using the press, poster and radio campaigns. Through these media we managed to recruit 36 patients to the project. To gain extra feedback we also approached local Breath Easy groups to create a focus group of a further 12 volunteers who reviewed the solution at a group meeting.

## **Part 5. Plans for sustainability and spread**

This section is intended to communicate your plans for sustainability and spread (up to 500 words). You should include:

- How realistic will it be to sustain the benefits of the project beyond March 2014?
- How do you plan to spread this innovation beyond the Shine award sites? What additional resources (and from who) will you need to support this activity beyond the Shine funding period?
- Please detail any external interest/potential contacts that you have identified that you need to pursue and those that you have already engaged with?

The myCOPD solution has shown to improve the quality of life of people with COPD. National guidelines recommend the introduction of self management for people with COPD, but as yet a solution for this problem on a national level has not been achieved. We feel that we have developed a tool which can be easily accessed and used by patients with varying IT skills effectively. We remain keen to see myCOPD solution be part of every COPD patient's life. To facilitate this we have a marketing strategy focusing on those people who can influence decisions for adopting services such as Clinical Commissioning Groups (CCG's), Local Prescribing Committees (LPC's) and community pharmacists. We are also in discussions with the British Lung Foundation, a leading UK charity supporting people with lung disease, with prospect of forming a corporate partnership and endorsing and publicising the solution.

Pharmaceutical companies have also expressed an interest in the solution as a tool to measure impact of new pipeline drug treatments. The solution would enable primary prescribers to monitor patients symptoms over a period of time on the initiation of a new treatment or therapy regime evaluating its effectiveness.

We are currently developing a myCOPD dashboard where the patients' daily symptoms and alerts could be made accessible to practice nurses, GP's and Community Providers, through remote monitoring.

We are also in negotiations with Lloyds Pharmacy (Celisio) to use the myCOPD solution as part of delivering their Medicines Use Reviews (MUR'S) in their pharmacies based in secondary care institutions.

We will also be applying for a new phase of funding to test the product to scale with a number of CCGs in the UK and have sites and investigators recruited once this funding round has been achieved.

## Appendix 2: Resources from the project

Please attach any leaflets, posters, presentations, media coverage, blogs etc you feel would be beneficial to share with others



TITLE:	<b>THE COPD SOLUTION</b>	CLIENT:	<b>HEALTH QUEST SOLUTIONS</b>
STATION:	<b>BREEZE</b>	WRITER:	<b>CLIENT</b>
DURATION:	<b>30</b>	EXEC:	<b>AMANDA</b>
REQ. BY DATE:		DATE:	

**FVO1: Have you been diagnosed with Chronic Obstructive Pulmonary Disease (COPD) ?**

**HealthQuest Solutions are looking to test a brand new system to help manage your condition .**

**Sponsored by the medical charity 'The Health Foundation', The COPD Solution is a free, unique, web based self-management system designed by local specialist doctors and nurses.**

**If you've access to the internet and are a COPD patient, you could help us (and yourself) with this very important project.**

**Find out more at [\\*\\*my copd solution.co.uk](http://**my copd solution.co.uk)**

**\*\*My C-O-P-D Solution.co.uk**

## SOUTHAMPTON: Scientists' new product will help COPD patients



WEB-BASED SYSTEM: Patient Jean Sartin with project manager Mal North.

Echo picture by Chris Moorhouse. Order no: 16337285

# A REVOLUTION FOR LUNG TREATMENTS

**IT IS a simple solution to a problem that is costing the NHS more than £1billion every year.**

And now doctors and scientists in Southampton have won the £75,000 they need to bring to reality a product that is set to revolutionise the way thousands in the city treat lung condition chronic obstructive pulmonary disorder (COPD).

The innovative myCOPD Solution aims to help patients to better manage their condition, which often proves difficult due to the complexity of treatments with different inhalers used in different ways.

The idea impressed industry experts so much that the team was chosen as one of just 30 projects across the UK to be awarded £75,000 to bring it to life as part of the Health Foundation's Shine programme that strives to improve healthcare.

This cash will pay for a study to test the innovation and HealthQuest Solutions is now looking for 50 volun-

■ **By Melanie Adams**

[melanie.adams@dailyecho.co.uk](mailto:melanie.adams@dailyecho.co.uk)

teers to take part and start using their product as part of their everyday life.

COPD is a condition that causes the airways in the lungs to become inflamed and narrowed, leading to a range of breathing diseases, including bronchitis and emphysema.

MyCOPD Solution comprises of two elements – a holdall and a Web-based system.

The holdall is specially designed to hold a range of items that will help the patient to manage their condition, including inhalers and advice and guidance material.

The accompanying Web-based system then gathers information about the patient and shares it with the patient, nurses and doctors to ensure the patient receive the interventions they need at the right time, before their health deteriorates even further.

It also has practical tools such as videos to show patients how to use their inhalers properly.

There are currently 6,000 patients in Southampton suffering from COPD, a figure that is set to soar within the next decade, yet it is estimated that only ten per cent follow their treatment programmes correctly.

Mal North, project manager, said: "We are thrilled to have been selected as one of 30 successful innovative projects focusing on improving healthcare.

"It has been shown that patients who are empowered to self-manage their chronic disease have an improved quality of life and utilise NHS resources less frequently.

"MyCOPD solution is a Web-based programme designed to equip people with COPD with the skills and knowledge to help them better self-manage their condition and the uniquely designed holdall helps keep everything organised."

■ The team is looking for men and women with COPD, who have access to a computer and are able to use the Internet, to trial the innovation for a three-month period. For more information call Mal on 023 8097 0217.



## Would You Like to Help us With an Exciting New Project?

HealthQuest Solutions with funding from the Health Foundation have developed a web based patient self-management system to help those with COPD to better manage their condition. The solution has been designed by COPD specialist doctors and nurses and is aimed to support people with COPD in the management of their condition. The project is currently looking for people with COPD to help us trial the solution.

For more information and to apply to help please contact Mal North on 023 80 970 217

