

## COPD Pharmacy Screening Project

### Expression of Interest Form

<b>Surname:</b>			
<b>First Name:</b>			
<b>Name of pharmacy:</b>			
<b>Are you the proprietor of this pharmacy (please tick)?</b>		<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Address of Pharmacy:</b>			
<b>Postcode:</b>		<b>Phone # of Pharmacy:</b>	
<b>Your email address (if convenient):</b>			
<b>Best time/days to contact you:</b>			
<b>Number of days worked in the pharmacy/week</b>			
<b>Number of other pharmacists who work on either a full-time, part-time or casual basis?</b>			
<b>Type of pharmacy (please tick):</b>	<input type="checkbox"/> Independent <input type="checkbox"/> Banner group <input type="checkbox"/> Other: _____		
<b>Pharmacy location (please tick):</b>	<input type="checkbox"/> Community strip <input type="checkbox"/> Shopping centre <input type="checkbox"/> Medical centre <input type="checkbox"/> Other: _____		
<b>How you heard about the screening project:</b>	<input type="checkbox"/> Pharmacy Journal <input type="checkbox"/> Flyer <input type="checkbox"/> Info session <input type="checkbox"/> Word of mouth <input type="checkbox"/> Other		

## FORM H: PHARMACY & PHARMACISTS' DETAILS

# COPD Pharmacy Screening Project

**A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD)**

*A project funded through the Investigator Initiated Grant Scheme through the 4<sup>th</sup> Community Pharmacy Agreement*



Thank you for your interest in the COPD Pharmacy Screening project.

Please complete the following details about yourself and your pharmacy. Please also complete details for each of the pharmacists that will be conducting the screening. (Each pharmacist that conducts the screening should complete the PSA's COPD CPE module and attend the project training session.)

**Please return the completed form to  
Phoebe Kearey by fax to (02) 9036 5063.**

If you would like further information about the COPD Pharmacy Screening project, please contact the project's chief investigator, Ms Heather Allan, on (07) 3622 2366 or the project manager, Phoebe Kearey, on (02) 9036 7258.



## Section A: Information about your PHARMACY

ID Code:

(To be completed by research staff)

Please provide the following details about your pharmacy. **If you work for more than one pharmacy** that is participating in the project, please complete a form for each of the pharmacies and answer the questions according to your work at that pharmacy.

1. What is the postcode of this pharmacy? \_\_\_\_\_
2. Please indicate how many staff usually work in the pharmacy on a usual given day by writing the number of staff in each of the boxes below.

Full-time pharmacists	<input type="text"/>	Part-time pharmacists	<input type="text"/>
Other full-time staff	<input type="text"/>	Other part-time staff	<input type="text"/>
3. What is the size of your pharmacy? \_\_\_\_\_(m<sup>2</sup>)
4. Please indicate below which of the following services are provided by your pharmacy.

HMR / DMMR	<input type="checkbox"/>
Methadone clinic	<input type="checkbox"/>
Webster pack	<input type="checkbox"/>
Consultants – baby care nurse, diabetes educator, herbalist, etc	<input type="checkbox"/>
DMAS - Diabetes medication assistance service	<input type="checkbox"/>
Other: (Please specify) _____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
_____	<input type="checkbox"/>
5. How many prescriptions were dispensed from your pharmacy in the previous week?

<input type="checkbox"/> Less than 150
<input type="checkbox"/> Between 150 and 299
<input type="checkbox"/> Between 300 and 599
<input type="checkbox"/> Between 600 and 1000
<input type="checkbox"/> More than 1000



## Section B: Information about First Pharmacist (Proprietor)

ID Code:

(To be completed by research staff)

Please complete the following information for **THE PROPRIETOR of this pharmacy**. You will also be asked to provide details for **each of the pharmacists** that will provide the screening service at this pharmacy.

1. Name of proprietor \_\_\_\_\_

2. Gender: ☐ Male ☐ Female

3. Age in years:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 18-25 | <input type="checkbox"/> 46-55 |
| <input type="checkbox"/> 26-35 | <input type="checkbox"/> 56-65 |
| <input type="checkbox"/> 36-45 | <input type="checkbox"/> >65   |

4. Years in practice:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 1-5   | <input type="checkbox"/> 21-25 |
| <input type="checkbox"/> 6-10  | <input type="checkbox"/> 26-35 |
| <input type="checkbox"/> 11-15 | <input type="checkbox"/> 36-45 |
| <input type="checkbox"/> 16-20 | <input type="checkbox"/> > 45  |

5. How many hours does the proprietor usually work in this pharmacy each week?

\_\_\_\_\_ Hours

6. Please indicate below which of the following services THE PROPRIETOR provides at this pharmacy?

HMR / DMMR

☐

Methadone clinic

☐

Webster pack

☐

Consultants – baby care nurse, diabetes educator, herbalist, etc

☐

DMAS - Diabetes medication assistance service

☐

Others (Please specify)

☐☐☐

7. Please list IF the proprietor has undertaken any Respiratory OR related CPD within the last 12 months.

Type of training	Training organisation	Length of training	CE points related to training

### Section C: Information about OTHER PHARMACISTS

Please complete the following details about **other pharmacists in your practice that will be providing the screening service.**

*(If you are the only pharmacist at your pharmacy participating in the project, you have completed this questionnaire.)*

#### SECOND PHARMACIST

ID Code:

*(To be completed by research staff)*

1. Name: \_\_\_\_\_

2. Gender: ☐ Male ☐ Female

3. Age in years:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 18-25 | <input type="checkbox"/> 46-55 |
| <input type="checkbox"/> 26-35 | <input type="checkbox"/> 56-65 |
| <input type="checkbox"/> 36-45 | <input type="checkbox"/> >65   |

4. Years in practice:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 1-5   | <input type="checkbox"/> 21-25 |
| <input type="checkbox"/> 6-10  | <input type="checkbox"/> 26-35 |
| <input type="checkbox"/> 11-15 | <input type="checkbox"/> 36-45 |
| <input type="checkbox"/> 16-20 | <input type="checkbox"/> > 45  |

5. Is this the "main job" of this pharmacist?

☐ No ☐ Yes

6. This pharmacist is a(n) ...*( Please tick appropriate box)*

☐ Employee Pharmacist ☐ Partner / Proprietor

7. How many hours does this pharmacist usually work in this pharmacy each week?

\_\_\_\_\_ Hours

8. Please indicate below which of the following services THIS PHARMACIST provides at your pharmacy?

- |  |                          |
|--|--------------------------|
| HMR / DMMR   | <input type="checkbox"/> |
| Methadone dispensing   | <input type="checkbox"/> |
| Webster pack   | <input type="checkbox"/> |
| Consultants – baby care nurse, diabetes educator, herbalist, etc | <input type="checkbox"/> |
| DMAS - Diabetes medication assistance service                    | <input type="checkbox"/> |
| Others ( <i>Please specify</i> )                                 | <input type="checkbox"/> |

9. Please List IF this pharmacist has undertaken any respiratory OR related CPD in the last 12 months.

Type of training	Training organisation	Length of training	CE points related to training

### THIRD PHARMACIST

ID Code:  
(To be completed by research staff)

10. Name: \_\_\_\_\_

11. Gender: ☐ Male ☐ Female

12. Age in years:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 18-25 | <input type="checkbox"/> 46-55 |
| <input type="checkbox"/> 26-35 | <input type="checkbox"/> 56-65 |
| <input type="checkbox"/> 36-45 | <input type="checkbox"/> >65   |

13. Years in practice:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 1-5   | <input type="checkbox"/> 21-25 |
| <input type="checkbox"/> 6-10  | <input type="checkbox"/> 26-35 |
| <input type="checkbox"/> 11-15 | <input type="checkbox"/> 36-45 |
| <input type="checkbox"/> 16-20 | <input type="checkbox"/> > 45  |

14. Is this the "main job" of this pharmacist?

☐ No ☐ Yes

15. This pharmacist is a(n) ... (Please tick appropriate box)

☐ Employee Pharmacist ☐ Partner / Proprietor

16. How many hours does this pharmacist usually work in this pharmacy each week?

\_\_\_\_\_ Hours

17. Please indicate below which of the following services THIS PHARMACIST provides at your pharmacy?

- |  |                          |
|--|--------------------------|
| HMR / DMMR   | <input type="checkbox"/> |
| Methadone dispensing   | <input type="checkbox"/> |
| Webster pack   | <input type="checkbox"/> |
| Consultants – baby care nurse, diabetes educator, herbalist, etc | <input type="checkbox"/> |
| DMAS - Diabetes medication assistance service                    | <input type="checkbox"/> |
| Others (Please specify)  | <input type="checkbox"/> |

18. Please List IF this pharmacist has undertaken any respiratory OR related CPD in the last 12 months.

Type of training	Training organisation	Length of training	CE points related to training

## FOURTH PHARMACIST

ID Code:

(To be completed by research staff)

19. Name: \_\_\_\_\_

20. Gender: ☐ Male ☐ Female

21. Age in years:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 18-25 | <input type="checkbox"/> 46-55 |
| <input type="checkbox"/> 26-35 | <input type="checkbox"/> 56-65 |
| <input type="checkbox"/> 36-45 | <input type="checkbox"/> >65   |

22. Years in practice:

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> 1-5   | <input type="checkbox"/> 21-25 |
| <input type="checkbox"/> 6-10  | <input type="checkbox"/> 26-35 |
| <input type="checkbox"/> 11-15 | <input type="checkbox"/> 36-45 |
| <input type="checkbox"/> 16-20 | <input type="checkbox"/> > 45  |

23. Is this the "main job" of this pharmacist?

☐ No ☐ Yes

24. This pharmacist is a(n) ... (Please tick appropriate box)

☐ Employee Pharmacist ☐ Partner / Proprietor

25. How many hours does this pharmacist usually work in this pharmacy each week?

\_\_\_\_\_ Hours

26. Please indicate below which of the following services THIS PHARMACIST provides at your pharmacy?

- |  |                          |
|--|--------------------------|
| HMR / DMMR   | <input type="checkbox"/> |
| Methadone dispensing   | <input type="checkbox"/> |
| Webster pack   | <input type="checkbox"/> |
| Consultants – baby care nurse, diabetes educator, herbalist, etc | <input type="checkbox"/> |
| DMAS - Diabetes medication assistance service                    | <input type="checkbox"/> |
| Others (Please specify)  | <input type="checkbox"/> |

27. Please List IF this pharmacist has undertaken any respiratory OR related CPD in the last 12 months.

Type of training	Training organisation	Length of training	CE points related to training

## PHARMACY COPD FACE TO FACE TRAINING PROGRAM







**Presenters:** *Arrival & Intro* - Project overview Heather Allan & Phoebe Kearey (ALF)










*Facilitators* - Simone Diamandis (BI) & Vanessa McDonald (NEAHS)






**Date:** Saturday 1<sup>st</sup> November, 2008







**Time allocated:** 5.5 hours (5 hours training)

**Location:** Crowne Plaza, Hunter Valley

TIME	TOPIC	SESSION	MATERIALS	DURATION
1.30pm	Arrival Introduction	 Welcome by ALF (HA & PK) <ul style="list-style-type: none"> <li>• Overview of project and training objectives</li> <li>• Introduction of speakers</li> </ul>  Refreshments and light lunch	 Binders (including Kits for project materials)	20 min
2.00pm		 Review of COPD module assessment completion   Activity: Turning point quiz on materials above (pre-session awareness) and discussion (SD)	 Turning point buzzers	20 min

TIME	TOPIC	SESSION	MATERIALS	DURATION
2.20pm	Disease state and therapeutic area: An overview	 PP - COPD (SD) <ul style="list-style-type: none"> <li>• What is COPD?</li> <li>• Chronic Bronchitis and Emphysema (vs Asthma)</li> <li>• Prevalence / underdiagnosis</li> <li>• Aetiology and natural history</li> <li>• Key indicators/symptoms</li> <li>• Effects of COPD               <ul style="list-style-type: none"> <li>▪ respiratory function</li> <li>▪ others (exacerbations, systemic effects)</li> <li>▪ why referral is important</li> </ul> </li> <li>• Management of COPD (pharmacological &amp; non-pharmacological)</li> <li>• Goals of treatment and patient outcomes</li> <li>• Role of the GP and pharmacist in management</li> </ul> <p> Activity: What COPD patients experience - "Breathing through a straw" (VM &amp; SD)</p> <p> Activity: Lung function - "Blowing up a balloon" (VM &amp; SD)</p>  PP - Differences between asthma and COPD (VM) <ul style="list-style-type: none"> <li>• Pathological differences</li> <li>• Differences in clinical features</li> </ul> <p> Activity: Closer look at impact of COPD on airways, lung volumes and changes in airflow at rest and during exertion using "Hyperinflation" interactive DVD (SD &amp; VM)</p>	 Straws  Flipchart paper & pens  COPD Checklist  Hyperinflation DVD	60 mins

TIME	TOPIC	SESSION	MATERIALS	DURATION
3.20 pm	Background on the diagnosis of COPD	 PP - How is COPD diagnosed? (VM) <ul style="list-style-type: none"> <li>• Spirometry - the process and differences between fully reversible and partially reversible airflow limitation</li> <li>• Respiratory indices - FEV<sub>1</sub>, FVC, FEV<sub>6</sub>, FEV<sub>1</sub>/FVC, IC, RV, TV, FEV<sub>1</sub>/FEV<sub>6</sub></li> <li>• Other investigations a GP/specialist may consider</li> </ul>		60 mins <input type="checkbox"/>
4.10 pm	Spirometry demonstration	 Activity: Spirometry of patient with no airflow limitation vs patients with airflow limitation (asthma and COPD). Interactive "Spirometry DVD" - Cases 1, 2, & 3 (SD & VM)  Activity: Spirometry demonstration (VM)	 Spirometry DVD <ul style="list-style-type: none"> <li>- Cases 1, 2, 3 &amp; 4</li> <li><input type="checkbox"/> Predicted value charts (from Spirometry H'book 2008)</li> </ul>  Piko-6 device	30 mins <input type="checkbox"/>

TIME	TOPIC	SESSION	MATERIALS	DURATION
5.40 pm	Case study	 <b>Problem Based Learning Case studies:</b> Patient experience Identifying, screening and referring patients at risk; Application of program protocol (SD & VM) (Split pharmacists into groups. Each group will be given one of the following patient types: <ul style="list-style-type: none"> <li>• Patient &gt;35 years with breathlessness</li> <li>• Patient requesting smoking cessation products</li> <li>• Patient with repeated scripts for antibiotics and upper respiratory tract infections</li> <li>• Patient with uncontrolled asthma despite preventative treatment with smoking history</li> </ul>	 Case study; patient pictures	30 minutes <input type="checkbox"/>
6.20 pm	Screening validation	 <b>Activity:</b> Pharmacists to use PIKO-6 according to screening flow-chart in pairs. Each pharmacist will be assessed on technique by qualified assessor. (VM & SD)	 Piko-6 Device	30 mins <input type="checkbox"/>
6.50pm	Feedback & question time	 <b>Activity:</b> Turning point quiz on materials above (post-session awareness) (SD)	 Turning point buzzers	10 mins <input type="checkbox"/>
7.00 pm	Close Drinks and refreshments			

## COPD Pharmacy Screening Project Training Day

Phoebe Kearey  
Vanessa McDonald  
Dr Bandana Saini



The University of Sydney



Centenary  
of Australian Federation of  
University Medicine



## PROJECT OVERVIEW INTRODUCTION TRAINING OBJECTIVES

Heather Allan



### Today's presenters..

- **Phoebe Kearey**  
Research Associate COPD Pharmacy Screening Project, ALF
- **Vanessa McDonald**  
Clinical Nurse Consultant/Conjoint Lecturer  
Department of Respiratory & Sleep Medicine, JHH & University of Newcastle
- **Bandana Saini**  
Lecturer, Pharmacy Practice, The University of Sydney

### Training Objectives

- Explain COPD, symptoms and risks
- Explain diagnosis and role of spirometry
- Outline clinical course of COPD, complications, and co-morbidities
- Differentiate between COPD and asthma
- Outline role of pharmacist in identifying and managing COPD in relation to GP
- Train pharmacists in use of Piko-6
- Explain protocols and data collection tools

### CPD Points

- Today – 10
- COPD Module - 6



### Background

- COPD is highly prevalent
- COPD is:
  - Under-recognised
  - Under-diagnosed
  - Under-managed
- COPD is preventable and treatable
- Barriers to spirometry in general practice



## Background (2)

- Community pharmacy funding \$500 million for professional pharmacy programs and services (\$20 million R & D)
- Research exists in other pharmacy screening and collaborative care programs (diabetes and asthma).

## Project details

- Title:** "A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease"
- Number of participants:** 15 pharmacies (maximum of 40 patients screened per pharmacy) = ~600 patients
- Duration:** ~12 months
- Official dates:** 1<sup>st</sup> July 2008 - 1<sup>st</sup> Dec 2009
- Patient recruitment:** Pharmacy initiated letter, counter tick test, requests for smoking cessation products, history of recurrent respiratory tract infection

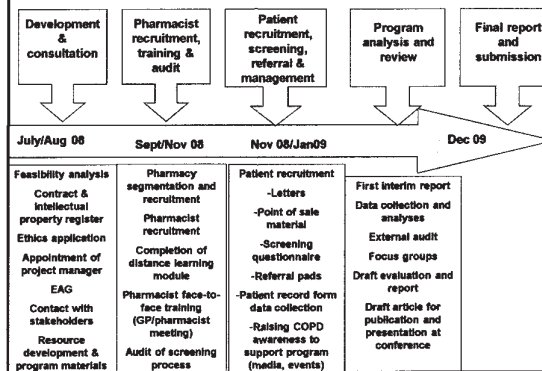
## Project aims:

*Assess the feasibility of pharmacist collaboration with GPs in early detection, referral and ongoing management of COPD*

1. Raise COPD awareness
2. Identify at risk patients early and refer them to GP
3. Participate in ongoing management of COPD in collaboration with GPs



## Timeline



## Why Newcastle/Hunter Region?

- Pharmacy demographics
- Networks:
  - active pharmacy organisation,
  - pro-active pharmacists
  - connections with local school of pharmacy
  - timing with pharmacy conference at the start of 2008
- Potential exposure to risk factors:
  - Pollutants (coal dust, industry)
  - Smoking rates (above state and national average)



## Why COPD?

- The fifth biggest killer in Australia behind heart disease, stroke and cancer
- Every 30 minutes another Australian dies of COPD
- The third leading 'burden of disease' behind heart disease and stroke
- The second leading cause of avoidable hospital admissions
- Affects one in five people over 40
- Costs to nation approx \$90 billion per year
- 51,621 COPD hospitalisations in 2002
- Average length of stay 7.5 days

## COPD: Under-diagnosed

- 1224 randomly selected patients in Melbourne from Electoral roll performed spirometry (Matheson, IMJ, 2006)
- **6.8% had symptomatic COPD** (GOLD St 2 or 3)
- Of those with only COPD:
  - **10% had a doctor's diagnosis of COPD**
  - **5% had diagnosis of asthma and COPD**
  - **36% had a diagnosis of asthma**
  - **Nearly 50% had no diagnosis**
  - **33% had been given spirometry test**

## Why under-diagnosis?

- Non-specific symptoms of COPD
- GP barriers to spirometry
  - Time
  - Remuneration
- Not top of mind
- Patients attribute their breathlessness to age or lack of fitness
- Patients do not complain to their GPs about breathlessness (may be asymptomatic), but avoid activities.



## Why pharmacists?

- Ideally placed to identify at risk patients
- Pharmacists see patients more often
- Important role for pharmacists in management
  - Smoking cessation
  - Device use and proper use of medication
- Collaboration with general practice

## Role of Pharmacist/GP

### Pharmacists

- Identify at-risk patients
- Take patient history
- Perform lung function screening
- Refer possible COPD patients to GP for full assessment
- on-going management
  - Smoking cessation
  - QUM

### GP

- Full assessment and diagnosis of referred patients
- Usual treatment
  - Pharmacotherapy
  - Pulmonary rehabilitation

## Communication

### Pharmacist

- Introduce program to local GPs (ALF to provide form letter and GP resources)
- GP referral form
- Follow-up

### GP

- If patient diagnosed, inform pharmacist via GP referral form
- Ongoing communication as required

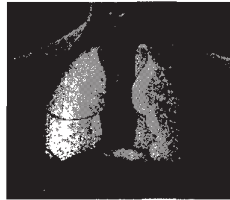
## SESSION 1: REVIEW OF COPD ESSENTIAL CPE



Simone Diamandis



## SESSION 2: DISEASE STATE AND THERAPEUTIC AREA



Dr Bandana Saini  
Vanessa McDonald



## ACTIVITY

- BREATHING THROUGH A STRAW
- Breathe in and out through a straw – no cheating...or fainting!
- Now try it holding your nose



## What is COPD?

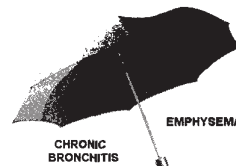
*"COPD is a preventable and treatable disease with some significant extrapulmonary effects that may contribute to the severity in individual patients".*

*"Its pulmonary component is characterised by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles."*



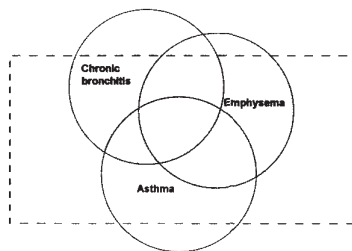
## COPD

- An umbrella term for chronic bronchitis and emphysema

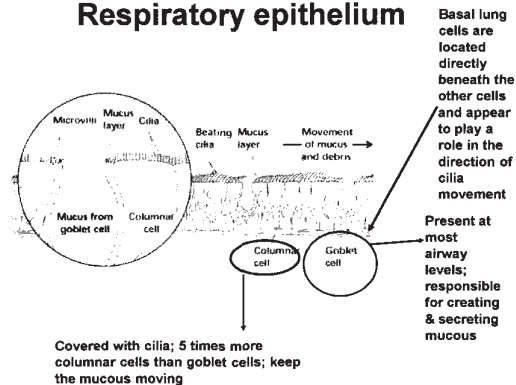


## The COPD/Asthma Overlap

- Only a small percentage 10-30% of patients have asthma and COPD



## Respiratory epithelium



## Respiratory epithelium

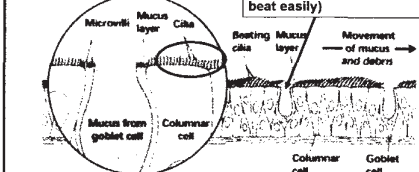
Hair like fibres; beat between 1,000-15,000 times per minute

Propel mucus

Mucous layer (2 layers):

→ Gel layer (traps particles)

→ Sol layer (less viscous and allows cilia to beat easily)



So what?

## Chronic Bronchitis

- Obstructive airway disease characterised by excessive mucus secretion that causes daily sputum production for at least three months of the year for two or more consecutive years.

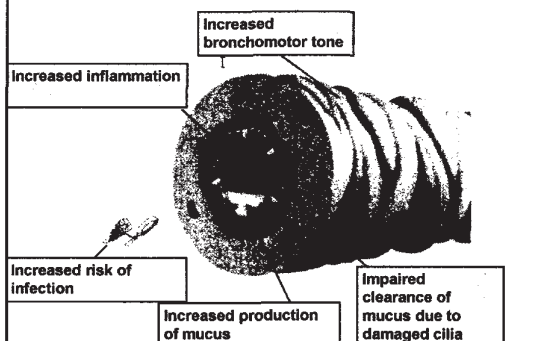
Normal bronchi



Bronchitis



## Key changes



## Chronic bronchitis

- Also get airway remodelling:
  - Hyperplasia of goblet cells
  - Metaplasia of epithelium



## ACTIVITY

- **BALLOON ACTIVITY**
- Pull and stretch the balloon – what do you notice?
- Now blow up the balloon
- What would happen to the balloon if you left air in there over time?



## Emphysema

- Permanent and destructive enlargement of the air spaces distal to the terminal bronchioles.
- Characterised by the breakdown of walls of the alveoli and capillaries that surround them.
- Alveoli form large air pockets
- Attachments that support the bronchioles and keep them open are destroyed
- Lungs lose their elasticity



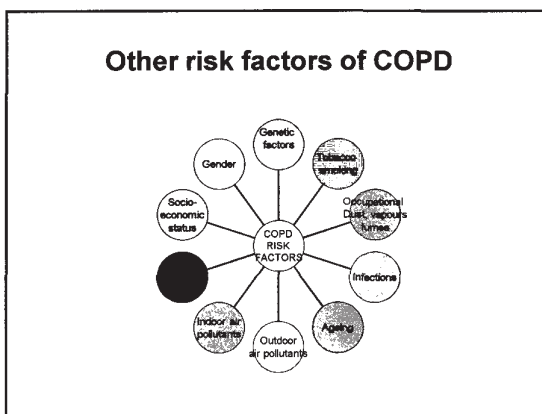
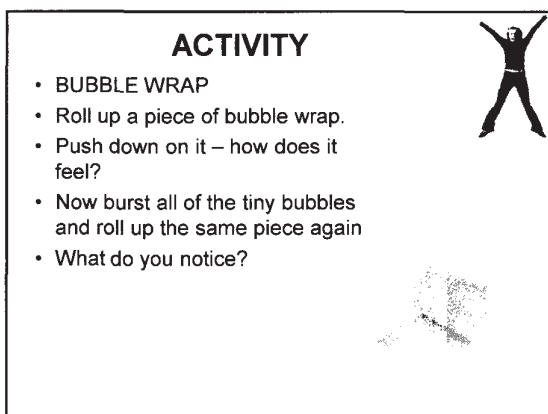
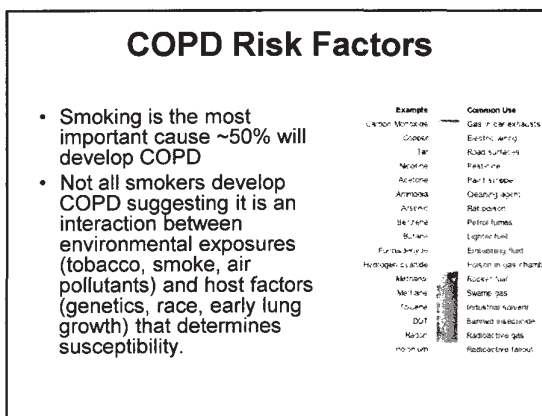
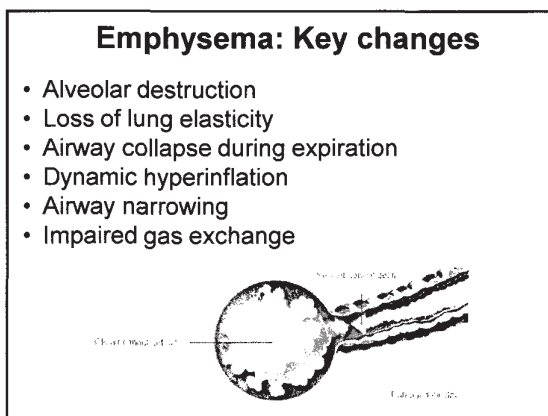
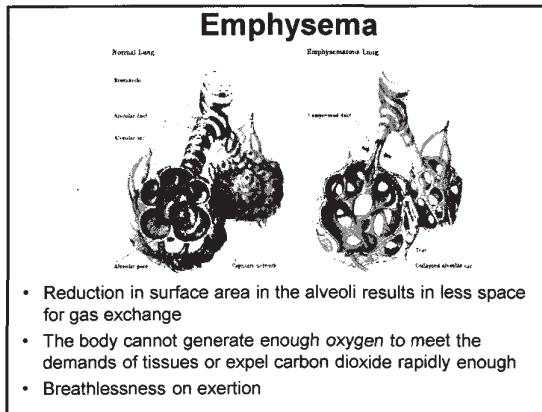
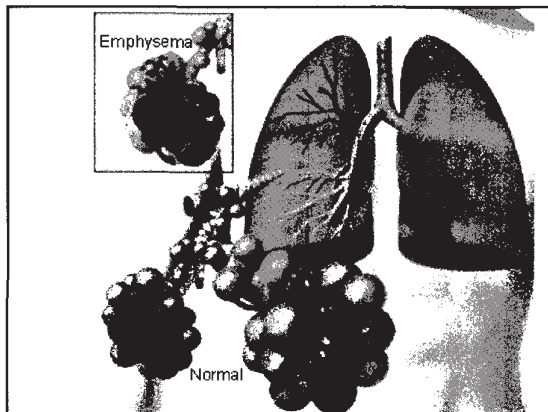
Enlarged view of air sacs (alveoli)



Emphysema: weakened and collapsed air sacs with excess mucus

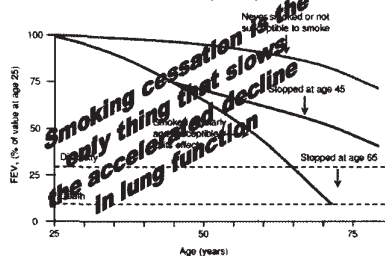


Normal healthy air sacs



## Smoking and Lung Function

- Premature onset of accelerated age-related decline in lung function
- $\downarrow$ FEV<sub>1</sub> ~50-100mL/year
- Associated risk is measured in pack years



## Pack years

Number of pack years =

$$\frac{\text{Number of years smoking} \times \text{cigarettes smoked per day}}{20}$$

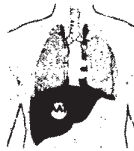
Twenty pack years of more of smoking has been identified as being a predictor if COPD



How long does one inhalation of a cigarette paralyse the cilia of the tracheobronchial tree?

## Genetic factors

- AAT – (alpha1 anti-trypsin deficiency)
- ~1-3% of patients with COPD have  $\alpha$ 1 anti-trypsin deficiency
- Main function is to protect the normal lung tissue from proteolytic attack during inflammation, such as that caused by infection and inhaled irritants such as tobacco smoke.
- Tobacco smoke causes inactivation of AAT (even in people without AAT).
- People with AAT generally develop airflow obstruction by their early 40s  $\rightarrow$  accelerated by 10-15 years in smokers



## Other genetic factors

- Chronic bronchitis is prevalent in some families
- May be due to exposure to environmental factors such as indoor pollutants
- All members of a family in which at least one member smokes are at a greater risk for developing chronic bronchitis.

## Exposure to occupational dust, vapours and fumes

- One study showed that people who reported a diagnosis of COPD or chronic bronchitis were twice as likely to recall previous worksite exposure to gases, dusts, vapours or fumes
- Eg: Coal miners – higher prevalence of chronic bronchitis; workers exposed to cadmium may contract emphysema



## Indoor & outdoor air pollutants

- Indoor air pollutants
  - Exposure to biomass fuels such as coal, straw, animal dung, crop residues and wood, which are used to heat and cook in poorly ventilated homes
- Outdoor air pollutants
  - Air pollution is linked to lower respiratory infections and acute cardiopulmonary events which are also important to the development and progression of COPD



## Aging



- COPD prevalence, morbidity and mortality increase with age
- Lung function reaches its peak in young adults and starts to decline in the 3<sup>rd</sup> and 4<sup>th</sup> decades of life

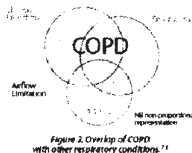
## Infections



- Exposure to infection in early life, could predispose an individual to changes in airway responsiveness.
- Most COPD exacerbations are related to bacterial or viral infections.

## Asthma?

- According to the DUTCH hypothesis, increased bronchial responsiveness, a hallmark of asthma, leads to development of COPD, although this topic remains controversial.
- Findings of cross-sectional studies have shown a large overlap of up to 30% between people who have a clinical diagnosis of COPD and asthma.



## Gender?



- Historically – COPD far more frequent in men than in women (related to patterns of smoking and occupational exposures).
- Lately – COPD prevalence becoming equal in men and women from high-income countries where smoking habits are similar between the sexes.
- Whether women are more susceptible to COPD given equal exposures continues to be a topic of investigation

## Socioeconomic status

- Inversely related – poor populations tend to have a higher risk of developing COPD and its complications than their wealthier counterparts
- This could be due to:
  - High exposure to occupational hazards
  - High smoking rates
  - Poor access to health care
  - Early respiratory tract infections



## ACTIVITY

- **BREATHING EXERCISE**
- Take a deep breath in; slowly breathe out maintaining 75% of the air in your lungs
- No breathe using only the top 25% of your lungs
- How long can you keep this up??



## COPD SYMPTOMS



### Chronic cough

- Productive or non-productive
- Persistent intermittently or every day



### Increased sputum production

- Present for many years, worse in winter
- Initially mucoid - volume increases and purulence increases during exacerbations



### Dyspnoea

- Breathlessness/ laboured breathing
- Progressive (worsens over time)
- Persistent (present every day)
- "increased effort to breathe" "gasping for breathe"
- Worse on exertion/with activities
- Worse during respiratory tract infections

## Other key indicators

- Repeated/recurrent episodes of acute bronchitis
- History of exposure to any risk factors

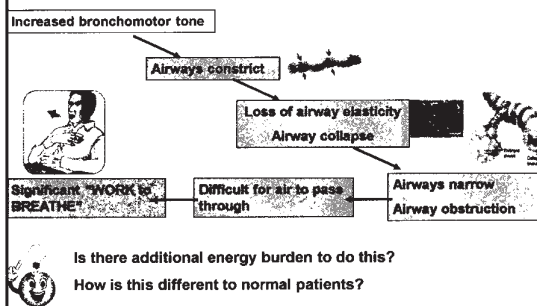


## Some other symptoms

- **RONCHI** – rattling wheezing sound associated with thick mucous secretions → acute exacerbations
- **CYANOSIS** – Skin discolouration (purple/blue colour) due to impaired gas exchange (low O<sub>2</sub>) - "Blue Bloaters"
- **FATIGUE** – Occurs daily → may be result of poor sleep
- **WEIGHT LOSS** – Occurs initially due to increase in energy required for breathing
- **DEPRESSION, OSTEOPOROSIS, COR PULMONALE**



## COPD & Exhalation



## Activity

**GET OUT OF YOUR CHAIR AND DO 12 STAR JUMPS**

**WHAT DO YOU NOTICE HAPPENS?**



## What is hyperinflation?

- Air becomes trapped in the small airways that have either collapsed or are narrowed due to fibrosis or obstruction of the airway due to excess mucus.
- **Static hyperinflation:** Partially reversible; occurs at rest; appears in more progressive stages of COPD
- **Dynamic hyperinflation:** Reversible and occurs rapidly during exercise; even in mild COPD patients



We will look at an animation of this a little later..

## Air Trapping

- Occurs in patients with COPD
- Results in an increase in the work of breathing
- Places respiratory muscles at a mechanical disadvantage
- Contributes to the sensation of breathlessness (dyspnea)

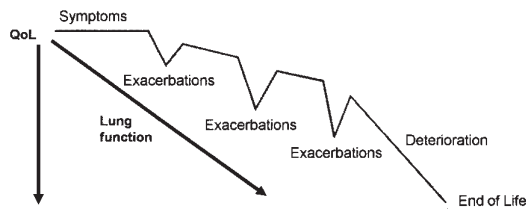


## Exacerbations

- Deterioration of a patient's clinical condition with worsening respiratory symptoms such as coughing, wheezing, sputum production and shortness of breath
- Since the condition of a person with COPD fluctuates from day to day, it is important to be able to distinguish between usual variations and actual exacerbations



## Disease Trajectory of a Patient with COPD

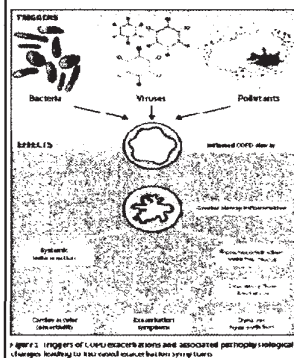


## Exacerbations



- Exacerbations of COPD are described as an acute worsening of respiratory symptoms associated with a variable degree of physiological deterioration.
- GOLD definition:
  - "an event in the natural course of the disease characterised by a change in the patient's baseline dyspnoea, cough &/or sputum that is beyond normal day-to-day variations, is acute in onset, and may warrant a change in regular medication in a patient with underlying COPD".

## What happens during exacerbations?



Airway inflammation responses during COPD exacerbations cause:

- > Airway oedema
- > Bronchospasm
- > Increased sputum production

This leads to worsening airflow limitation and the development of dynamic hyperinflation.

Such hyperinflation is the main cause of dyspnoea, the most common symptom of an exacerbation, and has other effects including modulating gas exchange, mechanical and cardiovascular effects.

## What causes exacerbations?



- **Viral infections** – exacerbations triggered by respiratory viral infections are more severe and are associated with longer recovery times than those triggered by other factors.
- Since the introduction of influenza immunisation, the virus has become a less prominent cause of exacerbation

## What causes exacerbations?

- **Bacterial infections:** Difficult to assess as airway bacteria colonisation in the stable state is associated with the same organisms as those isolated at exacerbations.
- **Pollution:** Increased exacerbations and hospital admissions with increased pollution



## Impact of exacerbations

- Exacerbations become more frequent and severe as the severity of the underlying COPD increases
- Reduced quality of life
- Increased hospital admissions
- Greater mortality
- Co-morbid conditions
  - IHD, pneumonia and diabetes
- Functional consequences
  - Peripheral muscle weakness → reduced functionality → deconditioning → loss of fitness

## Impact of exacerbations

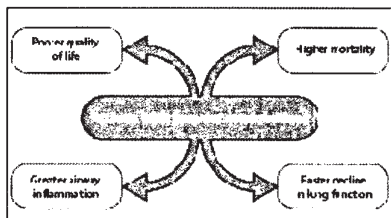


Figure 2: Effect of COPD exacerbations in the group with frequent exacerbations

## Treatment of exacerbations

- Antibiotics
- Bronchodilators (SABAs or Atrovent)
- Oral corticosteroids
- Controlled oxygen therapy

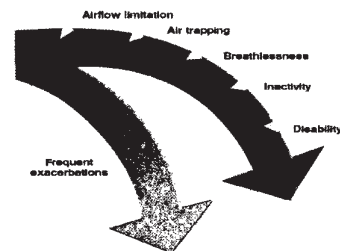


## Clinical course of COPD

- Decline in FEV<sub>1</sub> is gold standard of measure of COPD progression
- Lung function declines 25% faster in people with frequent exacerbations

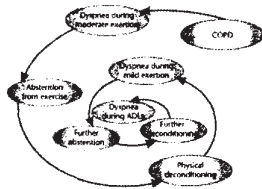
patient >35 years	Rate of decline
Healthy people	20-30mL/year
COPD	~60mL/year
Smokers	~100mL/year

## Clinical course

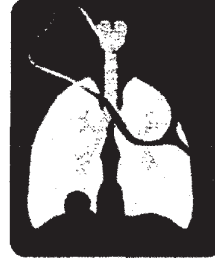


## Symptom induced inactivity

- Patients get air-trapping, hyperinflation, during activities/exercises and adapt by reducing their activities
- As the disease progresses – patients adapt their activities even further
- QoL becomes impaired overtime



## Treatment of COPD



## Goals of therapy

- Prevent and control symptoms
- Reduce the frequency and severity of exacerbations
- Improve health status
- Improve exercise tolerance



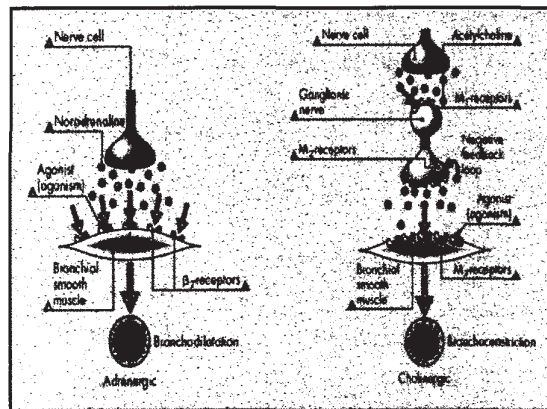
## Non-pharmacological



- Pulmonary rehabilitation
- Multidisciplinary program of care
- May be hospital or community based and typically incorporate:
  - Exercise training
  - Patient education/self management
  - Psychosocial support
- Aim is to:
  - Improve cardiovascular fitness, muscle function and exercise endurance
  - Enhance self confidence and coping strategies
  - Improve medication adherence and use of respiratory devices
  - Improve mood by controlling anxiety and panic, decreasing depression and reducing social impediments
  - Aid in smoking cessation

## Bronchodilators

- Relax bronchial smooth muscle which results in expansion of the bronchial air passages
- Types:
  - Beta2 agonists (short and long acting)
  - Anticholinergics (short and long acting)
  - Methylxanthines



## Beta agonists

- Beta2 agonists stimulate beta2 receptors in the airway smooth muscle to cause bronchodilation
- Short acting: Rapid onset of action but short acting (qid)
  - Salbutamol (Ventolin®, Asmol®)
  - Terbutaline (Bricanyl®)
- Long-acting: Bronchodilation lasts for ~12 hours (bd)
  - Salmeterol (Serevent®)
  - Formoterol (Oxis®)



Side effects include tremor; hypokalemia in overuse

## Methylxanthines

- MOA: Unknown – relaxes diaphragm and intercostal muscles
- Also act as diuretics, increasing the rate of fluid excretion from the body → can ↓ oedema that can accompany COPD
- Oral formulations available: Brondecon®; Theodur®
- Use is relatively low due to safety profile:
  - Side effects (eg: heart rate, GI)
  - Narrow therapeutic window
  - Drug interactions

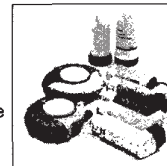


## Corticosteroids

- Anti-inflammatory
- Used as a preventative in asthma but in COPD only 10-30% of patients with COPD showed an improved lung function with oral steroid treatment
- GOLD: "Prolonged treatment with inhaled corticosteroids does not modify the long-term decline in FEV1 in patients with COPD".
- Regular treatment with inhaled glucocorticoids is only appropriate for symptomatic patients with a documented spirometric response.
- They should be trialled for 3-6 months in patients with moderate to severe COPD and patients who experience frequent exacerbations requiring treatment with antibiotics.
- No effect on the decline in lung function

## Corticosteroids

- Oral:
  - Long term use of systemic glucocorticoids is not recommended (safety reasons)
  - Prednisone (Panaforcort®) & Prednisolone (Panaforcortelone®)
  - Trial short two week course and if there is a response, patient should continue with inhaled treatment
- Inhaled:
  - Should be considered in patients with a documented response or those who have severe COPD with frequent exacerbations
  - Fluticasone (Flixotide®); beclomethasone (Qvar®); budesonide (Pulmicort®) + combination products



## Safety issues - Corticosteroids

- Oropharyngeal candidiasis and dysphonia
- Adrenal impairment, skin thinning, bruising, osteoporosis, cataracts and glaucoma, particularly in older people.
- Pneumonia
  - For every 17 people treated with fluticasone (instead of salmeterol alone), 1 extra person will develop pneumonia
  - The elderly who take inhaled corticosteroids have a higher risk of pneumonia hospitalisation

## Anti-cholinergics

- Normally ACH stimulates:
  - Bronchoconstriction
  - Increases mucus secretion
- Blocking the effects of the parasympathetic nervous system has the following effects:
  - ↓ vagal mediated tone of bronchial smooth muscle
  - → Bronchodilation
  - Reduces mucous secretion

## Anti-cholinergics

- **Safety:**
  - Little systemic absorption
  - Common – dry mouth; cough
  - Uncommon: Urinary retention and constipation
- **Available anti-cholinergics:**
  - **ATROVENT** (Ipratropium bromide)
    - Onset: 30-60 minutes
    - Duration of action (6-8 hours) so QID dosing
    - MDI or UDV's
  - **SPIRIVA** (Tiotropium bromide)
    - Onset of action 30 minutes
    - Duration of action 24 hours (1 d)
    - Available in capsules for delivery via handihaler



## Differences between ipratropium and tiotropium

Muscarinic receptor subtypes	Ipratropium	Tiotropium
M <sub>1</sub>	0.11%	14.6%
M <sub>2</sub>	0.02%	2%
M <sub>3</sub>	0.09%	34.7%

- Tiotropium is superior in every clinical parameter (improving lung function, increases exercise tolerance, reduces exacerbations, improves QoL)
- Atrovent used to treat exacerbations should be replaced with tiotropium as regular maintenance treatment.

## Maintenance treatment in COPD

- Long acting bronchodilators (long-acting anticholinergics or LABAs) are an integral part of maintenance treatment in COPD
- Inhaled corticosteroids are reserved for the more severe stages (where FEV<sub>1</sub> < 50% predicted in patients with frequent exacerbations despite being on regular beta<sub>2</sub> agonist therapy)

Short acting beta <sub>2</sub> agonist only	Start maintenance therapy with long acting beta <sub>2</sub> agonist	Add long acting S <sub>2</sub> agonist	Add an inhaled corticosteroid
Short acting beta <sub>2</sub> agonist only Salmeterol 500 µg MDI, 2 puffs bid or Formoterol 12 µg MDI, 2 puffs bid or Salbutamol 200 µg MDI, 4 puffs qid or Inhaled corticosteroid only Budesonide 160 µg MDI, 2 puffs bid	Add long acting beta <sub>2</sub> agonist Salmeterol 500 µg MDI, 2 puffs bid or Formoterol 12 µg MDI, 2 puffs bid	Add long acting S <sub>2</sub> agonist Tiotropium 18 µg capsule, 1 capsule bid or Glycopyrronium 50 µg MDI, 2 puffs bid or Umeclidinium 62.5 µg MDI, 2 puffs bid	Add an inhaled corticosteroid Budesonide 160 µg MDI, 2 puffs bid or Fluticasone 500 µg MDI, 2 puffs bid or Fluticasone 250 µg MDI, 2 puffs bid or Beclomethasone 40 µg MDI, 4 puffs bid
Intermittent symptoms FEV <sub>1</sub> > 50% predicted	Mild COPD FEV <sub>1</sub> < 50% predicted	Moderate COPD FEV <sub>1</sub> < 50% predicted	Severe COPD FEV <sub>1</sub> < 50% predicted

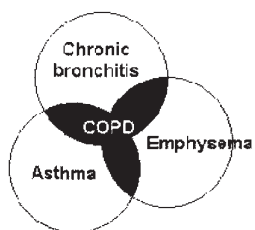
## GP

- Diagnose COPD
- Ongoing treatment and management of COPD
- Develop a COPD-X Action Plan
- Provide information on:
  - Condition
  - Medications
  - Importance of treatment
  - Pulmonary rehabilitation

## Pharmacist

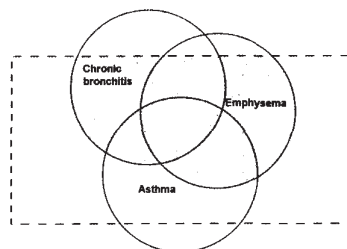
- Ongoing treatment and management of COPD
- Provide advice on:
  - Smoking cessation therapy
  - Device use
  - Adherence
- Provide information on:
  - Medications
  - Importance of treatment
  - Condition

## What's the difference between asthma and COPD?

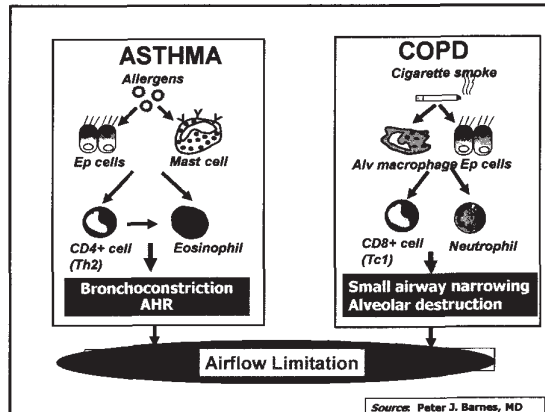


## The COPD/Asthma Overlap

- Only a small percentage 10-30% of patients have asthma and COPD



Key indicators for COPD	
Chronic cough	Present intermittently or every day often present throughout the day; seldom only nocturnal
Chronic sputum production	Present for many years, worst in winters. Initially mucoid – becomes purulent with exacerbation
Dyspnoea that is	Progressive ( <b>worsens over time</b> ) Persistent ( <b>present every day</b> ) Worse on exercise Worse during respiratory infections
Acute bronchitis	Repeated episodes
History of exposure to risk factors	Tobacco smoke, occupational dusts and chemical smoke from home cooking and heating fuel



COPD and asthma: Differences		
	COPD	Asthma
Age at onset of symptoms	Normally > 40 years	Typically early in life but can occur at any stage
Smoking	Usually smokers or ex-smokers	Non-smokers and smokers affected
Atopic features	Irrelevant	Common
Disease progression	Chronic, progressive disease leading to disability and death	Usually able to be well controlled, rarely fatal
Symptoms	Progressively worse with time	Vary from day to day
Lung function	Airflow limitation is not fully reversible	Airflow limitation is reversible
Past history	No childhood complaints	Childhood croup, bronchitis, asthma

Inflammation in respiratory diseases		
<ul style="list-style-type: none"> <li>Although there is an inflammatory component in COPD, it is markedly different to that in asthma</li> </ul>		
	COPD	Asthma
Cells	Neutrophils	Eosinophils
	Large increase in macrophages	Small increase in macrophages
Response to treatment	Glucocorticosteroids have little or no effect	Glucocorticosteroids inhibit inflammation

NHLBI/WHO, 2004. Available at: [www.goldcopd.com](http://www.goldcopd.com)

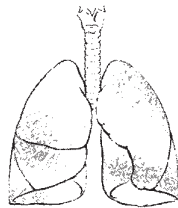
Spirometry Findings	
<b>COPD</b>	<b>ASTHMA</b>
Partially reversible	Fully reversible
FEV <sub>1</sub> < 80% predicted	FEV <sub>1</sub> < 80% predicted
FVC < 0.70	FVC < 0.70
Administer bronchodilator	Administer bronchodilator
NO CHANGE	SIGNIFICANT CHANGE >12% improvement of 200mL

## SESSION 3: BACKGROUND ON THE DIAGNOSIS OF COPD

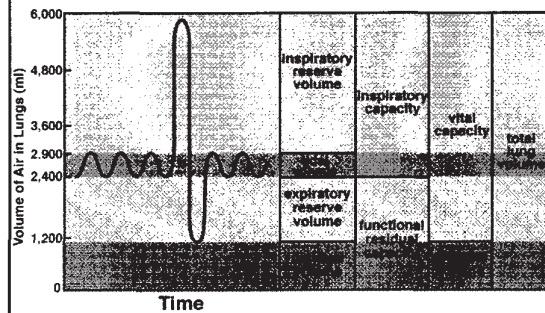
Vanessa McDonald

## LUNG FUNCTION TERMINOLOGY

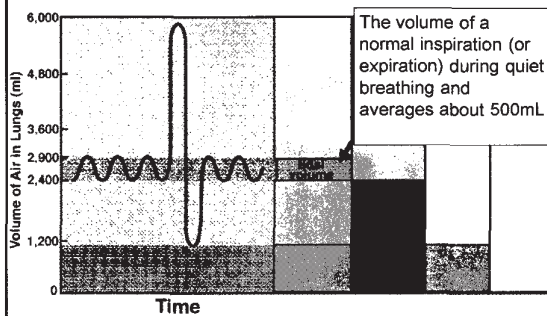
- Important to have an understanding of terminology when looking at changes in lung volumes in patients affected by COPD.



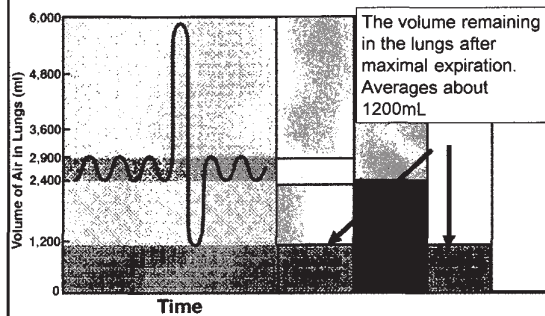
## Measuring Vital Capacity



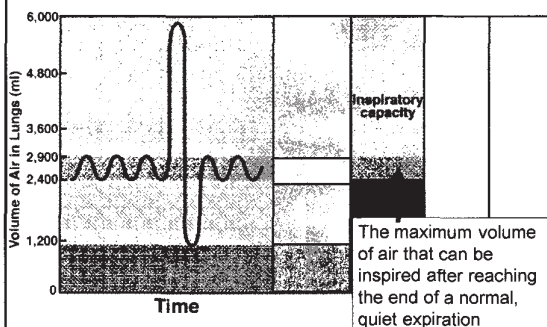
## Measuring Vital Capacity



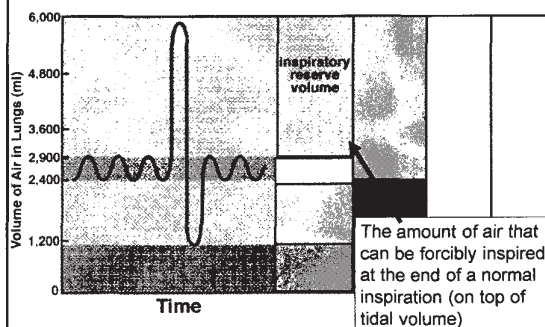
## Measuring Vital Capacity

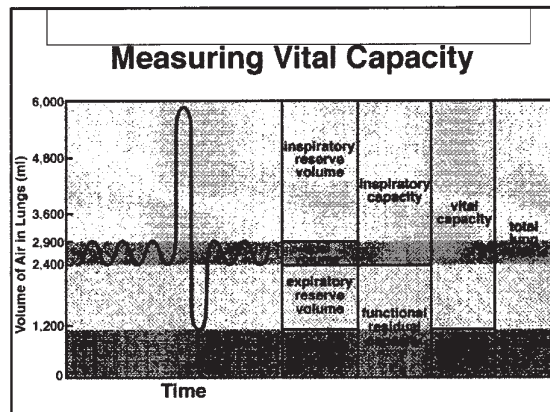
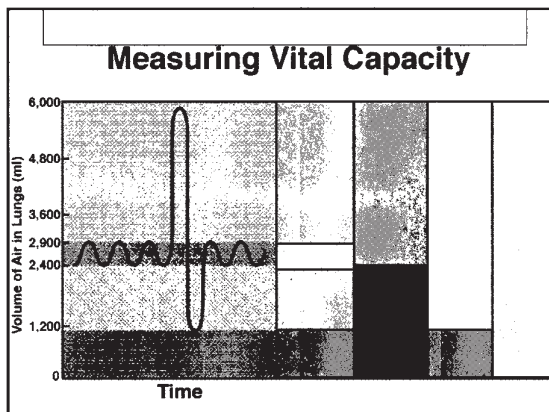
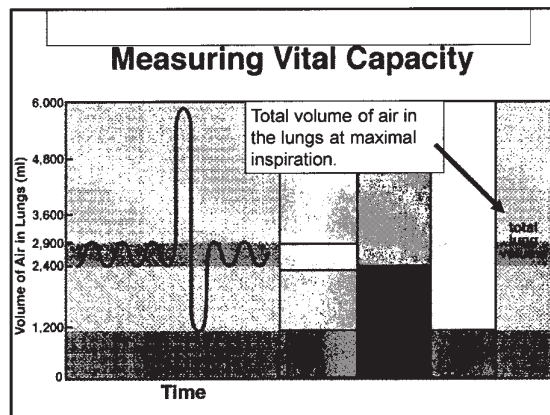
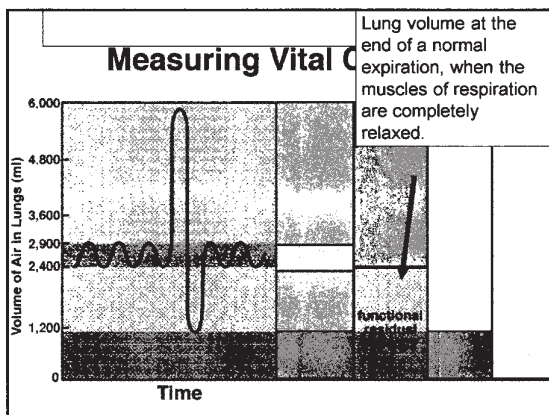
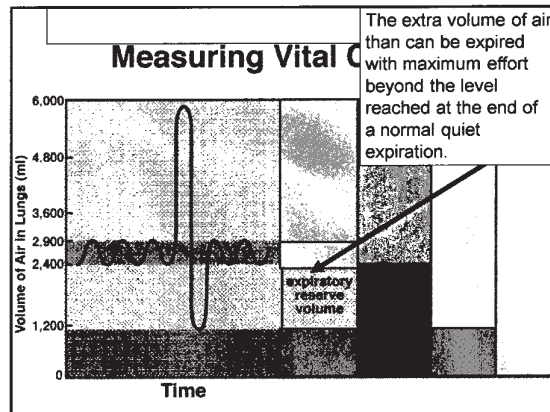
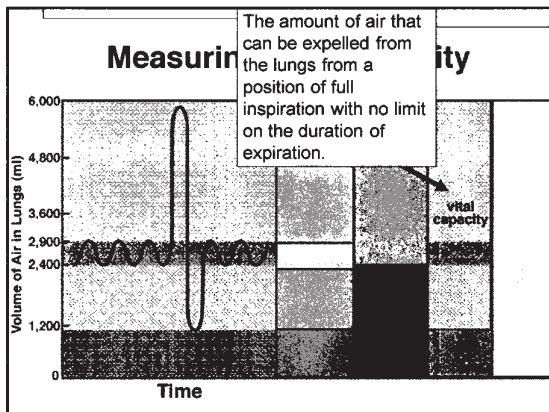


## Measuring Vital Capacity

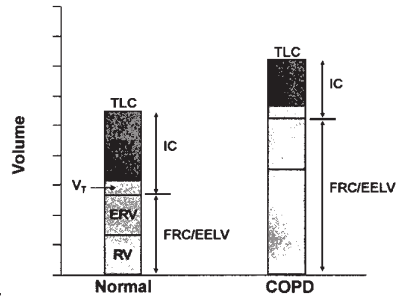


## Measuring Vital Capacity

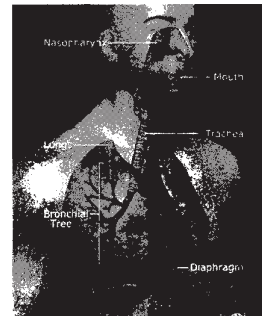




## Lung Volume Parameters



## HYPERINFLATION IN COPD



## COPD Diagnosis: Considerations

- Chronic cough, sputum and dyspnoea is usually absent in early stages of COPD
- Most patients seek GP help when they are significantly breathless and may be already in moderate to severe stages
- Thus, physical examination is not sensitive enough in detecting mild or moderate COPD.



## COPD Differential Diagnosis

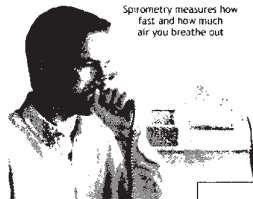
- Asthma
- Congestive heart failure
- Bronchiolitis
- Bronchiectasis
- Tuberculosis
- Cystic fibrosis



## COPD: Diagnosis

### SPIROMETRY IS THE GOLD STANDARD FOR DIAGNOSING COPD

- Timed measurement of lung volumes during forced expiration and inspiration to quantify how effectively and how quickly the lungs can be emptied and filled.



*" You would not consider managing hypertension without a sphygmomanometer, or diabetes without a glucometer – accurate and objective assessment and management of asthma and COPD is not possible without a spirometer"*

## Spirometry

- Measures the volume of air inspired or expired as a function of time (the amount of air entering or leaving the lungs)
- It is the recommended method for confirming the diagnosis, assessing severity and monitoring COPD.
- It measures:
  - FEV<sub>1</sub> – forced expiratory volume in 1 second
  - FVC – forced vital capacity (the total volume of air which can be exhaled from the lungs) or FEV<sub>6</sub>
  - FEV<sub>1</sub>/FVC ratio -Proportion of the lung volume that can be expired in 1 second
  - FEF<sub>25-75%</sub> - is the average flow rate between 25-75% of the FVC (litres/minute)

## When is spirometry used?

- Detection of respiratory diseases (patients with breathlessness at rest or exertion, wheeze, cough)
- Distinguishing from cardiac disease as cause of breathlessness
- Differentiation between obstructive and restrictive respiratory diseases
- measure reversibility of airflow obstruction
- Assess response to treatment
- Preoperative risk assessment prior to anaesthesia and abdominal or thoracic surgery
- Classifying disease severity
- Permit accurate back titration of preventative medication
- Follow disease progression

## Spirometry: The process

- Essentials are:
  - To breathe in fully
  - A good seal on the mouthpiece
  - Very vigorous effort right from the start of the manoeuvre and continuing until absolutely no more air can be exhaled (exhalation for at least 6 seconds)
  - No leaning forward during the test
  - Obtain at least 3 acceptable tests that meet repeatability criteria: →
    - Two largest values for FVC agree within 0.15L
    - Two largest values for FEV<sub>1</sub> should agree to within 0.15L

## Contraindications for Spirometry

- Recent eye surgery
- Recent thoracic or abdominal surgery
- Aneurysms
- Unstable cardiac function
- Haemoptysis of unknown cause
- Pneumothorax
- Chest or abdo pain
- Nausea or diarrhoea

## Testing of spirometry is dependent on different factors:

1. The patient must inhale fully prior to exhaling
2. The patient must blow as hard as possible for at least 6 seconds
3. Must not lean over
4. Technique must be right

## How is COPD diagnosed?

- Spirometry gold standard
- Airflow limitation is not fully reversible and COPD is diagnosed when after administration of bronchodilator:
  - FEV<sub>1</sub> remains <80% of predicted value
  - FEV<sub>1</sub>/FVC remains <0.7
- A clinical significant response to a bronchodilator is an increase in FEV<sub>1</sub> >200mL and > 12% above pre-bronchodilator level.



In a healthy person:  
FEV<sub>1</sub> >80-120% of predicted  
FEV<sub>1</sub>/FVC >70%

## Predicted values

FEV <sub>1</sub> (L) Male		30	35	40	45	50	55	60	65	70	75	80
Age	Height	30	35	40	45	50	55	60	65	70	75	80
16-20	1.60	3.10	3.08	2.97	2.85	2.72	2.58	2.44	2.29	2.12	1.94	1.67
21-25	1.70	3.40	3.29	3.18	3.06	2.93	2.79	2.64	2.49	2.32	2.15	1.78
26-30	1.80	3.81	3.51	3.38	3.27	3.14	3.01	2.88	2.73	2.56	2.37	1.99
31-35	1.90	4.23	3.73	3.62	3.50	3.37	3.23	3.08	2.93	2.76	2.58	2.22
36-40	2.00	4.66	3.96	3.85	3.73	3.60	3.46	3.31	3.15	2.98	2.80	2.45
41-45	2.10	5.10	4.19	4.08	3.96	3.83	3.69	3.54	3.38	3.23	3.05	2.69
46-50	2.20	5.54	4.44	4.33	4.21	4.07	3.94	3.79	3.63	3.47	3.29	2.79
51-55	2.30	5.99	4.70	4.59	4.46	4.32	4.19	4.04	3.88	3.72	3.55	3.18
56-60	2.40	6.45	4.95	4.83	4.71	4.56	4.44	4.29	4.14	3.98	3.80	3.34
61-65	2.50	6.91	5.21	5.10	4.98	4.85	4.71	4.56	4.41	4.24	4.07	3.50
66-70	2.60	7.38	5.58	5.46	5.35	5.22	5.08	4.93	4.78	4.61	4.44	3.77

- Age
- Height
- Gender
- Ethnicity

Maximum baseline spirometry (pre-bronchodilator)



FEV<sub>1</sub> < 80% predicted and FEV<sub>1</sub>/FVC ratio < 0.70 shows airflow limitation



Give the bronchodilator (short acting beta-agonist) at a dose as listed to be high on the dose response curve (e.g. 200µg albuterol) by MDI through a spacer device

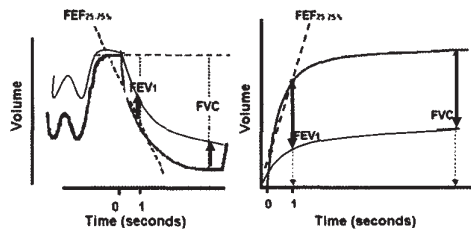


Repeat spirometry 15-20 minutes after bronchodilator given

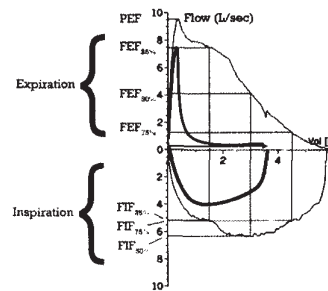


Calculate FEV<sub>1</sub>/FVC and degree of reversibility. FEV<sub>1</sub> < 80% predicted and FEV<sub>1</sub>/FVC ratio < 70% indicates airflow restriction that is not fully reversible (COPD)

## Volume time curves



## Flow volume loops



## FEV<sub>6</sub>

- Forced expiratory flow in 6 seconds
- Spirometry is dependent on the efforts made by patients
- The effort to empty the lungs completely in order to reach FVC can be particularly difficult for some patients (up to 20sec)
- Swanney (2000) & Vandevoorde (2005) – showed that FEV<sub>6</sub> is more reproducible than FVC and less physically demanding for patients.

## Classification of severity of COPD based on Spirometry

Severity	Spirometry	Clinical
Mild	FEV <sub>1</sub> 60 – 80% predicted	Few symptoms, chronic (usually) cough/sputum production No effect on daily activities Breathless on moderate exertion
Moderate	FEV <sub>1</sub> 40 – 59% predicted	Chronic cough/sputum production Breathlessness on the flat, increasing dyspnoea Increasing limitation on daily activities
Severe	FEV <sub>1</sub> < 40% predicted	Severely impaired QoL and daily activities Dyspnoea on minimal exertion Life-threatening exacerbations/complications

GOLD Stages of COPD	
STAGE 1 MILD	FEV <sub>1</sub> ≥ 80% of predicted value
STAGE 2 MODERATE	FEV <sub>1</sub> 50-79% of predicted value
STAGE 3 SEVERE	FEV <sub>1</sub> 30-49% of predicted value
STAGE 4 VERY SEVERE	FEV <sub>1</sub> < 30% of predicted value

Stage 0 – “AT RISK” has been removed  
 > Defined as patients who exhibit respiratory symptoms but no spirometric abnormalities  
 > Little evidence links these patients to actually progressing to stage 1 or mild COPD

### Spirometry is important because:

- Diagnostic tool in COPD
- Demonstrates disease progression through repeated measurements
- Provides information about prognosis
- Has been shown to motivate patients to stop smoking

### Who should have spirometry?

- All smokers and ex-smokers
- Family history of emphysema or chronic bronchitis
- Exposure to environmental tobacco smoke, dusts, chemicals, indoor and outdoor pollutants
- History of repeated episodes of bronchitis or URTI/LRTI
- Asthmatics who don't respond to treatment
- Patients who attribute breathlessness to lack of age or fitness
- Patients who don't have breathlessness but avoid daily activities to limit their breathlessness



### What should be avoided prior to respiratory function testing?

- Medication
  - SABAs (6-8 hours prior to testing)
  - LABAs (12 hours prior to testing)
  - Sustained release theophylline; tiotropium; leukotriene antagonists (24 hours prior to testing)
  - Nasal decongestants (24 hours prior to testing)
  - Antihistamines (1 week prior to testing)
- Smoking, large meals and strenuous exercise (4 hours prior to testing)
- Caffeine containing products (4 hours prior to testing)
- Respiratory function testing should not be performed within 2 weeks of a respiratory infection



### Why not use PEF?

- Peak expiratory flow (PEF)
- A measure of maximum expiratory flow occurring just after the start of a forced expiration from the point of maximum inspiration.
- Provides a measure of airway calibre or airflow
- Several limitations:
  - Large degree of variability compared to FEV<sub>1</sub>
  - Wide normal range
  - PEF measurements to not always parallel FEV<sub>1</sub>
  - Large degree of variability from meter to meter
  - Large airways vs small airways



### Other investigations

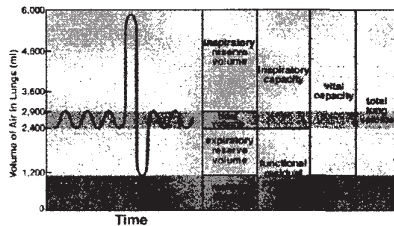
Other investigations to aid diagnosis or management include:

- Chest x-ray (helps to exclude other conditions such as lung cancer)
- Arterial blood gas measurement (performed in patients with severe disease, or FEV<sub>1</sub> ≤ 1.0L or <40% predicted if there are signs of respiratory failure or cor pulmonale and those with breathlessness out of proportion to their clinical status to determine the concentrations of CO<sub>2</sub>, O<sub>2</sub>, bicarbonate and the pH of the blood).
- Full blood count (to identify anaemia or polycythaemia)
- Alpha-1 antitrypsin deficiency screening.

Exercise testing may be useful to differentiate between breathlessness resulting from cardiac and respiratory disease, and may be helpful to identify other causes of exercise limitation (e.g. hyperventilation, musculoskeletal disorders).

## Static Lung Volumes

### Measuring Vital Capacity



## Static Lung Volumes

- Four volumes investigated:
  - Tidal volume
  - Inspiratory reserve volume
  - Expiratory reserve volume
  - Residual volume
- Four capacities investigated:
  - Total lung capacity
  - Vital capacity
  - Inspiratory capacity
  - Functional residual capacity



Note: Some may be measured using simple devices such as spirometers, others need to be measured by gas dilution of body plethysmography

## COPD CALCULATOR

Approximately how many patients attend your practice?

What percentage of your patients are males?

% of Males 18-44  % of Females 18-44

% of Males 45 & over  % of Females 45 & over

Smokers or ex smokers:

Number of patients with some degree of airflow limitation

Number of patients with disabling airflow limitation

## SESSION 4: SPIROMETRY & DEMONSTRATION



Vanessa McDonald



## VIDEO



Watch the DVD on  
SPIROMETRY CASE STUDIES 1,2 & 3

## Lets perform a spirometry test!



## PIKO-6

- Gives measure of risk assessment of airway disease without having to do a full spirometry – is not DIAGNOSTIC
- Measures  $FEV_1/FEV_6$
- $FEV_6$  is accurate, reliable and surrogate for FVC (more reproducible less physically demanding)

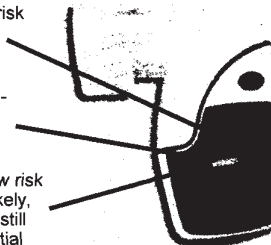


## PIKO-6

**RED ZONE:** <65% - high risk of having COPD. Recommend follow up management

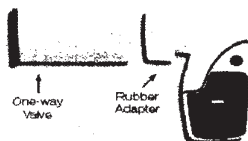
**YELLOW ZONE:** 65-75% - medium risk of COPD. Recommend follow-up management

**GREEN ZONE:** >75% - low risk of COPD. COPD is unlikely, however patient should still be referred based on initial screening questionnaire.



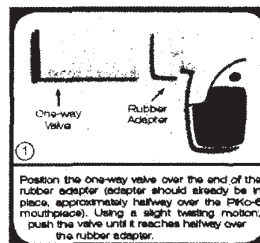
## PIKO-6

Designed for multiple use when used with one-way valves.

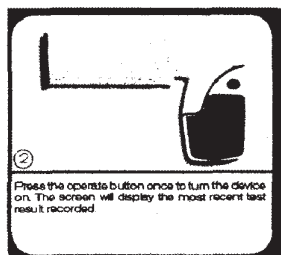


## Using the PIKO-6

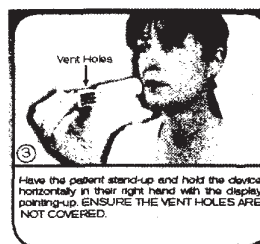
- Please watch the demonstration and refer to  handout on the PIKO-6 device.



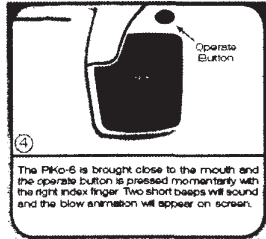
## Using the PIKO-6



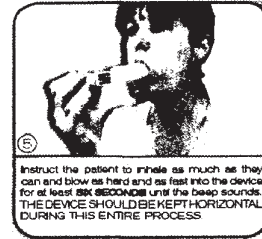
## Using the PIKO-6



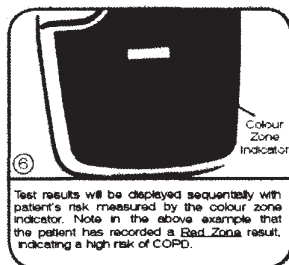
## Using the PIKO-6



## Using the PIKO-6



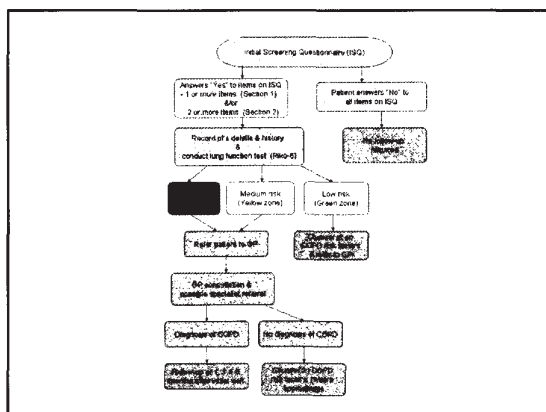
## Using the PIKO-6



## SESSION 5: PROJECT OVERVIEW



Simone Diamandis  
Phoebe Kearey



## Patients targeted

- All smokers and ex-smokers
- Family history of emphysema or chronic bronchitis
- Exposure to environmental tobacco smoke, dusts, chemicals, indoor and outdoor pollutants
- History of repeated episodes of bronchitis or respiratory tract infections
- Asthmatics who don't respond to treatment
- Patients who attribute breathlessness to lack of age or fitness
- Patients who don't have breathlessness but avoid daily activities to limit their breathlessness



## SESSION 6: CASE STUDIES



Dr Bandana Saini  
Vanessa McDonald



### CASE STUDY 1



- Judith Alford is a regular customer of yours who has just come from the doctor with some prescriptions.
- You notice that this is her third prescription for Rulide 300mg in the last 6 months.

OUTLINE THE COURSE OF ACTION YOU WOULD TAKE,  
INCLUDING QUESTIONS YOU WOULD ASK.  
ALSO TAKE INTO ACCOUNT THE PROJECT PROTOCOLS

### CASE STUDY 2



- Brian Davis a regular customer of yours enters your pharmacy today asking for a multivitamin. He's been feeling quite lethargic lately and you notice it takes him quite a while to catch his breath. He tells you that he isn't as fit as he used to be!

OUTLINE THE COURSE OF ACTION YOU WOULD TAKE,  
INCLUDING QUESTIONS YOU WOULD ASK.  
ALSO TAKE INTO ACCOUNT THE PROJECT PROTOCOLS

### CASE STUDY 3



- Mary O'Connor is a new customer who enters the pharmacy. She has recently moved from Dubbo to Sydney and is still trying to settle into a new environment. She needs another Ventolin inhaler and some St John's Wort.

OUTLINE THE COURSE OF ACTION YOU WOULD TAKE,  
INCLUDING QUESTIONS YOU WOULD ASK.  
ALSO TAKE INTO ACCOUNT THE PROJECT PROTOCOLS

### CASE STUDY 4



- Steve Carroll is a new customer. He has just moved to the area from Brisbane. He asks your pharmacy assistant for some of that gum to help him quit smoking.

OUTLINE THE COURSE OF ACTION YOU WOULD TAKE,  
INCLUDING QUESTIONS YOU WOULD ASK.  
ALSO TAKE INTO ACCOUNT THE PROJECT PROTOCOLS

## SESSION 7: PIKO SCREENING & VALIDATION



Vanessa McDonald



## PIKO-6

Now its time to use the PIKO-6 in pairs.



## SESSION 8: FINAL REVIEW, FEEDBACK, QUESTIONS



Vanessa McDonald  
Dr Bandana Saini



## Essential CPE Questions

1. Which of the following increase the risk of low bone mineral density in patients with COPD?
  - a. Oral corticosteroids
  - b. Inhaled corticosteroids
  - c. Low BMI
  - d. A & B only
  - e. **All of the above**
2. Acute exacerbations of COPD may be treated with:
  - a. **Antibiotics**
  - b. LABAs
  - c. ICS
  - d. Mucolytics
  - e. Theophylline
3. Which of the following is not a risk factor for COPD?
  - a. Environmental tobacco smoke
  - b. Alpha-1 anti-trypsin deficiency
  - c. Airway hyperresponsiveness
  - d. Recurrent respiratory tract infections in childhood
  - e. **None of the above**
4. Which of the following product(s) are indicated for the prevention of exacerbations associated with COPD?
  - a. Ipratropium
  - b. **Tiotropium**
  - c. Salmeterol + fluticasone
  - d. A & B only
  - e. B & C only
5. A patient is confirmed as having COPD if post-bronchodilator:
  - a.  $FEV_1 < 80\%$  and  $FEV_1/FVC > 0.70$
  - b.  $FEV_1 > 80\%$  and  $FEV_1/FVC < 0.70$
  - c.  **$FEV_1 < 80\%$  and  $FEV_1/FVC < 0.70$**
  - d.  $FEV_1 > 80\%$  and  $FEV_1/FVC > 0.70$
  - e. None of the above
6. Which of the following statements is true?
  - a. **Cholinergic constriction is a dominant reversible mechanism of airflow limitation in COPD**
  - b. There is a marked increase in neutrophils in patients with asthma compared to patients with COPD
  - c. Chronic cough in COPD is typically dry and occurs mostly at night
  - d. Airflow limitation is fully reversible in COPD
  - e. Asthma and COPD are both obstructive lung disease and are treated the same
7. Up to how many patients are estimated to have poor inhaler technique?

- a. 30%
- b. 50%
- c. 60%
- d. 70%**
- e. 80%

8. Which of the following statements with regards to smoking cessation therapy is true?
- a. Varenicline is a nicotinic acetylcholine receptor partial antagonist and is more than twice as effective as bupropion in smoking cessation
  - b. Bupropion may be combined with patches and 2mg gum in smokers with severe nicotine dependence that have made many unsuccessful attempts to quit.**
  - c. The period between starting a course of bupropion and a course of varenicline must be at least 3 months.
  - d. Varenicline may be combined with nicotine replacement therapies
  - e. Nicotine patches are more effective than nicotine gum in increasing the chances of quitting
9. According to the classification of severity of COPD recognised in Australia and New Zealand a patient with severe COPD has:
- a.  $FEV_1 < 70\%$
  - b.  $FEV_1 < 60\%$
  - c.  $FEV_1 < 50\%$
  - d.  $FEV_1 < 40\%$**
  - e. Both C & D
10. With regards to the parasympathetic nervous system:
- a. Stimulation of  $\beta_1$  receptors results in bronchodilation
  - b. Stimulation of  $\beta_2$  receptors results in bronchoconstriction
  - c. Stimulation of muscarinic cholinergic receptors results in bronchoconstriction**
  - d. Stimulation of muscarinic cholinergic receptors results in bronchodilation
  - e. A & C
11. The most useful diagnostic investigation for COPD is:
- a. Spirometry**
  - b. Peak expiratory flow
  - c. Chest X-ray
  - d. Arterial blood gases
  - e. Alpha-1 anti-trypsin deficiency

***Questions 12 to 13 relate to the following case study (Mrs King).***

Mrs King is a 45 year old customer of yours with mild-moderate COPD ( $FEV_1 = 60\%$  predicted;  $FEV_1/FVC = 0.63$ ). She quit smoking three years ago, and finds she is getting increasingly breathless with work activities over the last few weeks. Initially Ventolin® relieved her shortness of breath, however lately she needs to

use it more than 3 times a day to relieve her symptoms. She is not on any regular maintenance treatment.

12. Which of the following treatments should be initiated as regular maintenance treatment?
- a. Terbutaline
  - b. Salmeterol
  - c. **Tiotropium**
  - d. Fluticasone
  - e. Salmeterol + fluticasone
13. What other pharmacological/non-pharmacological treatments would Mrs King benefit from at this point in her condition?
- a. Pulmonary rehabilitation therapy, NRT and weight loss
  - b. Influenza vaccination, pulmonary rehabilitation and antibiotics
  - c. Antibiotics, influenza vaccination and pneumococcal vaccination
  - d. Influenza vaccination, weight loss and NRT
  - e. **Pulmonary rehabilitation, influenza vaccination and pneumococcal vaccination**

*Questions 14 to 15 relate to the following case study (Mr Black).*

Mr Black is a 59 year old customer of yours with moderate to severe COPD ( $FEV_1 = 55\%$  predicted;  $FEV_1/FVC = 0.54$ ). He has been on regular maintenance therapy with tiotropium for more than 8 years and the doctor recently mentioned that he will need to add another puffer to his list of medications.

14. What treatment would his doctor most likely add next?
- a. Ipratropium
  - b. **Salmeterol**
  - c. Fluticasone
  - d. Salmeterol + fluticasone
  - e. Theophylline
15. 10 months later, he is admitted to hospital for an exacerbation of COPD. There are no clinical signs of infection or hypoxia. What would be the most appropriate course of action to treat his exacerbation given his history?
- a. Cease tiotropium and commence ipratropium as a short acting bronchodilator as well as oral corticosteroids for up to 2 weeks
  - b. Continue with tiotropium and add ipratropium as a short acting bronchodilator and oral corticosteroids for up to 2 weeks
  - c. Cease tiotropium and add salbutamol as a short acting bronchodilator as well as oral corticosteroids for up to 2 weeks
  - d. **Continue with tiotropium and add salbutamol as a short acting bronchodilator as well as oral corticosteroids for up to 2 weeks**
  - e. None of the above

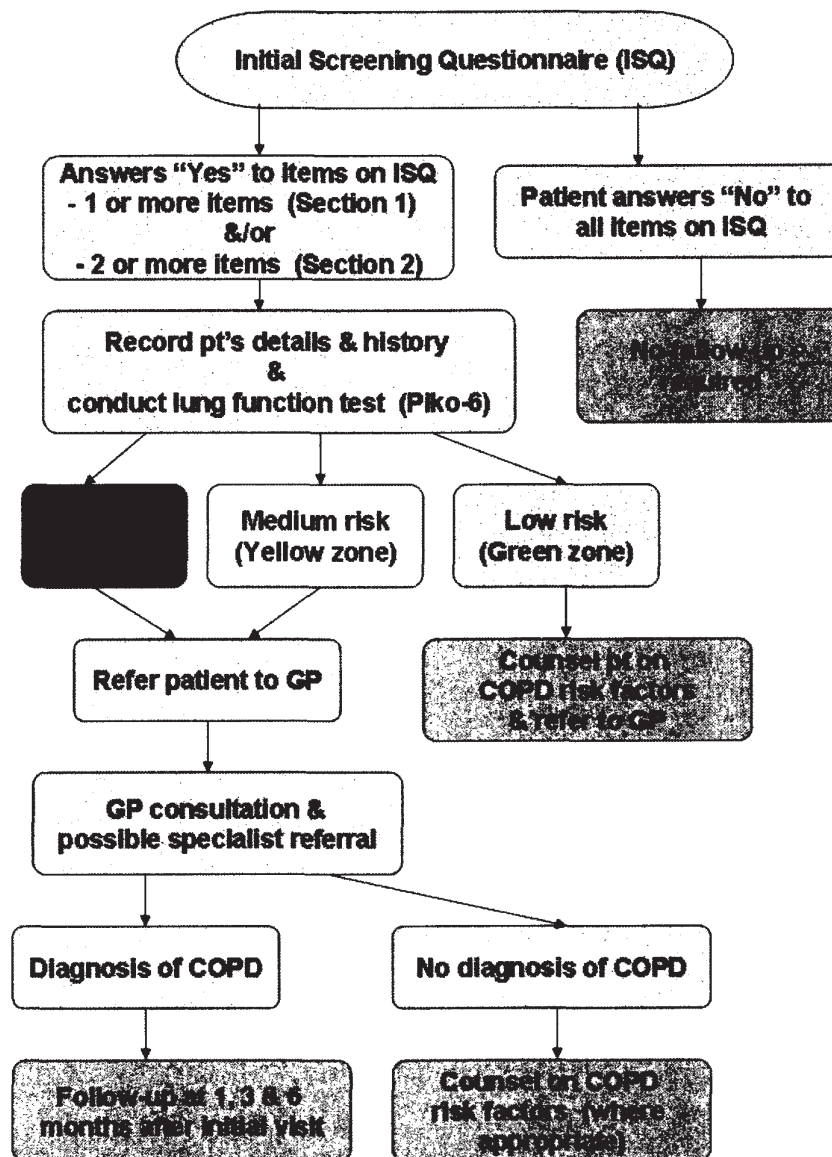
16. Which of the following statements is true?
- a. Standard doses of eformoterol are superior to standard doses of salmeterol in improving lung function
  - b. LABAs are currently listed on the PBS for COPD
  - c. **ICS + LABA combination products are more effective than ICS or LABAs alone in improving lung function**
  - d. ICS + LABA combination products are indicated for the initiation of bronchodilator therapy in COPD
  - e. ICS + LABA combination products have no effect on reducing exacerbations
17. The most common side effect associated with anticholinergic use is:
- a. Glaucoma
  - b. **Dry mouth**
  - c. Hypokalaemia
  - d. Tremor
  - e. Cataracts
18. High dose inhaled corticosteroids increase the risk of:
- a. Glaucoma
  - b. Pneumonia
  - c. Oral candidiasis
  - d. B & C only
  - e. **All of the above**
19. ICS + LABA combination products are indicated in COPD patients with:
- a. An  $FEV_1 < 80\%$  predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.
  - b. An  $FEV_1 < 70\%$  predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.
  - c. An  $FEV_1 < 60\%$  predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.
  - d. **An  $FEV_1 < 50\%$  predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.**
  - e. None of the above
20. The aims of treatment in stable COPD are to:
- a. Prevent disease progression
  - b. Improve quality of life
  - c. Prevent exacerbations
  - d. A & B only
  - e. **All of the above**

# COPD Pharmacy Screening Project

## SCREENING PROTOCOL

A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD)

### COPD SCREENING REFERRAL AND MANAGEMENT PROCESS



## **A: PATIENT RECRUITMENT**

### **Number of patients**

Number of patients required = up to **40 patients** / pharmacy.

### **Recruitment methods**

There are four scenarios for recruiting patients to the study. You should be able to recruit most patients through the following two methods:

1. Patients who complete a **screening questionnaire** (available on the pharmacy counter). You are encouraged to display the poster provided to encourage patients to enquire about a lung function test if they have the outlined symptoms.
2. Patients who present to the pharmacy requesting **smoking cessation products**.

If you are having trouble recruiting patients through the counter tick test (initial screening questionnaire) and those that approach you about smoking cessation products, you may like to use the following recruitment methods:

3. Pharmacy-initiated letter to patients (**asthma**) that:
  - a. Have been diagnosed with asthma AND
  - b. Are poorly controlled despite being on current preventer &/or reliever medication AND
  - c. Have had their medication dispensed within the last 3 months.
4. Pharmacy-initiated letter to patients (**antibiotics**) that :
  - a. Have a history of recurrent respiratory tract infections
  - b. Have had more than 2 courses of antibiotics in the last 12 months.

### **Exclusion criteria (for all scenarios):**

- a. Patient is aged younger than 35 years.
- b. Patient has already been diagnosed with a serious lung condition, such as emphysema, chronic bronchitis or COPD.

### **Recruitment materials**

Prior to screening, all patients need to read the participant information statement and sign a consent form.

<b>Item</b>	<b>Recruitment method</b>	<b>Form</b>	<b>Availability</b>
Patient Information Statement	Scenario 1: Screening questionnaire	Form A1	Provided in resource folder
	Scenario 2: Smoking cessation	Form A2	Provided in resource folder
	Scenario 3: Asthma	Form A3	Available upon request
	Scenario 4: Antibiotics	Form A4	Available upon request
Patient Consent Form	Scenario 1: Screening questionnaire	Form B1	Provided in resource folder
	Scenario 2: Smoking cessation	Form B2	Provided in resource folder
	Scenario 3: Asthma	Form B3	Available upon request
	Scenario 4: Antibiotics	Form B4	Available upon request
Recruitment letter	Pharmacy-initiated letter to patients ( <b>asthma</b> )		Proforma available upon request
	Pharmacy-initiated letter to patients ( <b>antibiotics</b> )		Proforma available upon request

## **B: SCREENING**

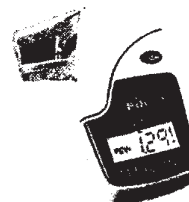
### **Initial visit**

All patients who agree to participate in the study should be asked to complete the Initial Screening Questionnaire. Patients who receive a score of 1 or more in Section 1 or 2 or more in Section 2 should then be invited to complete a lung function assessment using the Piko-6. Before conducting the Piko-6 test, record details of the patient's smoking history, medical history and medication history in the **Pharmacist Record Form (Form D)**.

### **Lung function screening using PIKO-6**

The Piko-6 device gives a measure of risk assessment for airway disease without having to do a full spirometry.

It measures FEV<sub>1</sub>/FEV<sub>6</sub>. FEV<sub>6</sub> is accurate, reliable and surrogate for FVC (more reproducible, less physically demanding). PIKO-6 screening is NOT diagnostic and does not replace spirometry that a patient's GP may perform.



COLOUR ZONE	Lung function value	Risk of having COPD	Action
RED	<65%	high	Recommend follow up management – refer to GP.
YELLOW	65-75%	medium	Recommend follow-up management – refer to GP.
GREEN	>75%	low	COPD is unlikely. Counsel patient re: risk factors, such as smoking. Suggest patient seeks further advice from their GP about their risk factors and presenting symptoms/problems (where appropriate).

Record results of the lung function testing and any action taken by the pharmacist at that visit as per the table above under Sections E & F of the **Pharmacist Record Form (Form D)**.

### **Follow-up visits**

Follow-up visits should be conducted at approximately 1, 3 and 6 months after the initial screening. At each of these visits, the pharmacist should record a general update on the patient's health, whether the patient has visited their GP and any outcomes from that visit, and any action taken by pharmacist at that visit in the **Pharmacist Record Form (Form D)**.

Item	Form	Availability
Initial screening questionnaire	Form C (Green)	Provided in resource folder
Patient Record Forms	Form D (Blue)	Provided in resource folder
Visit 1 - Initial Screening	Sections A-F	
Visit 2	Sections G-H	
Visit 3	Sections I-J	
Visit 4	Sections K-L	

## **C: REFERRAL**

Refer the patient to their local GP for diagnostic assessment if:

- They received a score of 1 or more in Section 1 or 2 or more in Section 2, and
- Their Piko-6 score is in either the Red or Yellow zone.

**Please note:** Patients with a PIKO score in the green zone should also be referred to their GP for follow up of presenting problems/symptoms.

Complete **GP Referral Form (Form E)**. Complete the contact details for your pharmacy on the **GP Report Form (Form F)**, so that the GP knows where to return the completed report. Give the patient both forms to take with them to their appointment with their GP.

If the patient received a Piko-6 score in the Green zone (low risk) you should still conduct counselling re: the risk factors for COPD that have been shown through their exposure history. For example, if they are a current smoker, you should counsel them on smoking cessation.

Item	Form	Availability
GP Referral Form (from Pharmacist to GP)	Form E (Pink)	Provided in resource folder
GP Report Form (from GP to Pharmacist)	Form F (Yellow)	Provided in resource folder
Screening information sheet	Form G (Cream)	Provided in resource folder

#### **D: FOLLOW-UP AND MANAGEMENT**

The GP should refer any patients back to you that are found to have a diagnosis of COPD for follow-up management.

Follow-up visits with the patient should occur at approximately 1, 3 and 6 months after initial screening. If you have not heard back from patients (or their GPs) within 2 weeks of these times, please follow up with them to enquire whether they went to the GP, if they had a diagnosis made, etc. A couple of suggested ways to do this are:

- If the patient is a regular customer at your pharmacy and you see them in the pharmacy around the time they are due for a follow-up visit, ask the patient when they come to the pharmacy if they have had an opportunity to visit their GP.
- Call the patient at home and check with them if they have had an opportunity to visit their GP.

#### **GP-Pharmacist relationship**

Local media coverage will be sought to raise awareness of the screening trial, so that patients are aware that the screening service is available at participating pharmacies and also to raise awareness of the project with local general practitioners. However, as the success of this project relies on collaboration amongst pharmacists and their local GPs, we strongly suggest that you contact GPs in your area who you are likely to refer patients to and advise them that they may have visits from patients that you have screened and found to be at risk of having COPD.

#### **E: REMUNERATION**

Pharmacists participating in the program will be remunerated in the following way:

- \$ 20 for the initial visit and screening
- \$20 for each follow up visit (at approximately 1, 3 and 6 months)\*

\* To a maximum of \$80 per patient and maximum 40 patients per pharmacy.

All PIKO-6 devices and related consumables will be provided to the pharmacies participating in the screening at no charge. One PIKO-6 device will be allocated to each pharmacy.

Pharmacists may continue to screen beyond 40 patients without remuneration should they choose to do so.



"When you can't breathe...  
nothing else matters"



The University of Sydney

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Email: [enquiries@pharm.usyd.edu.au](mailto:enquiries@pharm.usyd.edu.au)

## FORM A1: PARTICIPANT INFORMATION SHEET - GENERAL

### COPD PHARMACY SCREENING PROJECT

**Re: A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD).**

This project is being conducted by Ms Heather Allan from the Australian Lung Foundation, Dr Bandana Saini from the University of Sydney and Ms Simone Diamandis, Dr Geraldine Peterson-Clark, Dr Guy Gavagna and Mr David Marshall from Boehringer Ingelheim Pty Ltd.

COPD is a long-term lung disease that reduces airflow in and out of the lungs making it difficult to breathe. The most common symptoms are shortness of breath, persistent cough and/or regular sputum (phlegm) production. COPD is largely unrecognised and under-diagnosed. The Australian Lung Foundation estimates that there are approximately 1 million people aged over 35 in Australia with COPD. However, approximately three out of four people with COPD do not know that they have it. Often the symptoms of COPD creep up slowly and can be mistaken for asthma or simply ageing. As a result, people may not see a physician about their symptoms or receive a diagnosis until the disease has progressed in severity. People more likely to have COPD include those who are /have:

- ☐ Older than >35 years
- ☐ Smoking History - Exposure to tobacco smoke
- ☐ Exposure to occupational dusts and chemicals
- ☐ Other chronic lung conditions such as asthma
- ☐ Symptoms such as breathlessness, cough, sputum.

Typically, patients in the early stages of COPD do not recognise the onset of symptoms. Many people may also ignore their breathlessness and attribute this and other symptoms to smoking, reduced fitness or age, and often don't seek treatment until their condition is much worse. COPD can be diagnosed with a quick breathing test called spirometry, which your general practitioner may be able to perform. Pharmacists can check your lung function using a simple hand held device and refer you to your general practitioner for further assessment and diagnosis if needed.

The aim of this research project is for community pharmacists to:

- Raise COPD awareness
- Identify people at risk of COPD early and refer them to their GP
- Participate in the management of COPD.

In order to do this, however, it is important for us to collect data on approximately two hundred (200) people who will be screened and referred to their GP, and treated for COPD with appropriate medications if the condition is diagnosed.

Therefore, if you choose to participate in this study, the pharmacist will complete an initial screening questionnaire (called the COPD tick test) and lung function assessment using a simple hand held device. If you are referred to your GP and diagnosed with COPD, then you will be asked to return to your pharmacy for follow-up visits at 1, 3 and 6 months after the first consultation. During each visit (~10-15min each), the pharmacist will complete your record and perform lung function assessments, as well as discuss certain aspects relating to management of your condition. You will also be asked to complete an evaluation of your experience of the project.

By agreeing to participate in this study, you will be providing evidence relating to the impact of the role of the community pharmacist in screening, referring and participating in the management of lung disease. You may also personally benefit from participation in this study through diagnosis of a previously unrecognised lung condition. However people younger than 35 years of age, or those with serious lung conditions already diagnosed such as emphysema, chronic bronchitis or COPD itself will not be included in the study.

Participation in this project is entirely voluntary and you may withdraw at any time without any short or long term consequences. Your decision to participate will not affect the usual care provided by your pharmacy/pharmacist. All data is collected in accordance with Commonwealth and State Privacy legislation.

For more information, please contact Ms Heather Allan at The Australian Lung Foundation on (07) 3622 2366.

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## FORM A3: PARTICIPANT INFORMATION SHEET - ASTHMA

### COPD PHARMACY SCREENING PROJECT

**Re: A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD).**

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- ☐ Smoking History - Exposure to tobacco smoke
- ☐ Exposure to occupational dusts and chemicals
- ☐ Other chronic lung conditions such as asthma
- ☐ Symptoms such as breathlessness, cough, sputum.

Typically, patients in the early stages of COPD do not recognise the onset of symptoms. Many people may also ignore their breathlessness and attribute this and other symptoms to smoking, reduced fitness or age, and often don't seek treatment until their condition is much worse. COPD can be diagnosed with a painless breathing test called spirometry, which your general practitioner may be able to perform. Pharmacists can check your lung function using a simple hand held device and refer you to your general practitioner for further assessment and diagnosis if needed.

The aim of this research project is for community pharmacists to:

- Raise COPD awareness
- Identify people at risk of COPD early and refer them to their GP
- Participate in the management of COPD.

In order to do this, however, it is important for us to collect data on approximately two hundred (200) people who will be screened and referred to their GP, and treated for COPD with appropriate medications if the condition is diagnosed. Pharmacists in your area have been recruited to participate in this study. In participating pharmacies, pharmacists will examine their prescription data base and extend a special invitation to people who appear to have taken asthma medications in the last 3 months. This method of inviting people for screening has been selected by the research team, as it is known that those with a pre-existing condition such as asthma are slightly more likely than others to develop COPD.

Therefore, if you have received a letter from your pharmacist, and choose to participate in this study, the pharmacist will complete an initial screening questionnaire (called the COPD tick test) and lung function assessment using a simple hand held device. If you are referred to your GP and diagnosed with COPD, then you will be asked to return to your pharmacy for follow-up visits at 1, 3 and 6 months after the first consultation. During each visit (~10-15min each), the pharmacist will complete your record and perform lung function assessments, as well as discuss certain aspects relating to management of your condition. You will also be asked to complete an evaluation of your experience of the project.

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## FORM A4: PARTICIPANT INFORMATION SHEET - ANTIBIOTICS

### COPD PHARMACY SCREENING PROJECT

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The aim of this research project is for community pharmacists to:

- Raise COPD awareness
- Identify people at risk of COPD early and refer them to their GP
- Participate in the management of COPD.

In order to do this, however, it is important for us to collect data on approximately two hundred (200) people who will be screened and referred to their GP, and treated for COPD with appropriate medications if the condition is diagnosed. Pharmacists in your area have been recruited to participate in this study. In participating pharmacies, pharmacists will examine their prescription data base, and extend a special invitation to people who appear to have been prescribed two or more courses of antibiotic medications for respiratory tract infections within the last 12 months. This method of inviting people for screening has been selected by the research team, as it is known that those people with conditions such as COPD have a higher rate and frequency of developing respiratory tract infections.

Therefore, if you have received a letter from your pharmacist, have had two or more courses of antibiotics for respiratory tract infections within the last 12 months, and choose to participate in this study, please sign the consent form attached and advise your pharmacist that you would like to participate.

The pharmacist will then complete an initial screening questionnaire (called the COPD tick test) and lung function assessment using a simple hand held device. If you are referred to your GP and diagnosed with COPD, then you will be asked to return to your pharmacy for follow-up visits at 1, 3 and 6 months after the first consultation. During each visit (~10-15min each), the pharmacist will complete your record and perform lung function assessments, as well as discuss certain aspects relating to management of your condition. You will also be asked to complete an evaluation of your experience of the project.

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## FORM B4: PARTICIPANT CONSENT FORM – ANTIBIOTICS

### COPD PHARMACY SCREENING PROJECT

I ..... hereby voluntarily consent

(Print Name of Participant)

to participate in the study entitled ***A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD).***

This project is being conducted by Ms Heather Allan from The Australian Lung Foundation, Dr Bandana Saini from the University of Sydney and Ms Simone Diamandis, Dr Geraldine-Peterson Clark, Dr Guy Gavagna and Mr David Marshall from Boehringer Ingelheim Pty Ltd. For more information, please contact Ms Heather Allan at The Australian Lung Foundation on (07) 3622 2366.

I understand that any data collected for the purposes of this study will remain strictly confidential. I have been informed that information obtained from this research may be used in future research or published.

Details of this study have been clearly explained by the pharmacist. I am aware of the purpose of this project and what my involvement entails. I have read the Subject Information attached. My participation is entirely voluntary. I have been informed of my right to refuse any part of the procedure or withdraw from the project at any time.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Witness' name: \_\_\_\_\_

Witness' signature: \_\_\_\_\_ Date: \_\_\_\_\_

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## FORM B3: PARTICIPANT CONSENT FORM – ASTHMA

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(Print Name of Participant)

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Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Witness' name: \_\_\_\_\_

Witness' signature: \_\_\_\_\_ Date: \_\_\_\_\_

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## FORM B1: PARTICIPANT CONSENT FORM - GENERAL

### COPD PHARMACY SCREENING PROJECT

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(Print Name of Participant)

to participate in the study entitled ***A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD).***

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I understand that any data collected for the purposes of this study will remain strictly confidential. I have been informed that information obtained from this study may be used in future research or published.

Details of this study have been clearly explained to me by the pharmacist. I am aware of the purpose of this project and what my involvement entails. I have read the Participant Information attached. My participation is entirely voluntary. I have been informed of my right to refuse any part of the procedure or withdraw from the project at any time.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Witness'  
name: \_\_\_\_\_

Witness'  
signature: \_\_\_\_\_ Date: \_\_\_\_\_



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## FORM C: INITIAL SCREENING QUESTIONNAIRE

### COPD Pharmacy Screening Project



Please complete the following questionnaire and return it to your pharmacist or, if you prefer, your pharmacist can help you complete the questionnaire.

**Only complete this questionnaire if you are 35 years or older and DO NOT have a diagnosis of emphysema or chronic bronchitis.**

SECTION 1		
a. Are you currently a smoker?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Have you ever smoked in the past?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c. Are you, or have you ever been exposed to dusts, chemicals or indoor or outdoor pollutants?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Total Score (Section 1):</b>		

SECTION 2		
d. Are you bothered by a persistent cough, phlegm, wheezing or mucous?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
e. Do you avoid any activities to prevent or limit breathlessness?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
f. Do you get short of breath more easily than others your age?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
g. Do you have a family history of chronic bronchitis or emphysema?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
h. Do you ever link breathlessness to ageing or poor fitness?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
i. Have you had a history of repeated episodes of bronchitis or respiratory infections?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
<b>Total score (Section 2):</b>		

If you have a score of:

- **one or more in section 1 OR**
- **two or more in Section 2**

....you will be invited to complete a lung function assessment with your pharmacist.

Please provide some details about your background on the other side of this page.

Please provide a few details about yourself. This will help us to provide better care for you.

<b>BACKGROUND:</b>				
1. Have you been diagnosed with asthma?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
2a. Have you been diagnosed with any serious, terminal or debilitating illness?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
2b. If yes, please provide details:				
3. Date of birth:			4. Gender:	<input type="checkbox"/> Male <input type="checkbox"/> Female
5. Cultural background:	<input type="checkbox"/> European <input type="checkbox"/> Caucasian <input type="checkbox"/> Eurasian <input type="checkbox"/> Asian	<input type="checkbox"/> African <input type="checkbox"/> Indigenous & Torres Strait Islander <input type="checkbox"/> Other ( <i>Please specify</i> )		
6. Occupation ( <i>please specify</i> ):				
7. Current employment status:	<input type="checkbox"/> In full-time employment <input type="checkbox"/> In part-time / casual employment <input type="checkbox"/> Self-employed <input type="checkbox"/> Not currently employed	<input type="checkbox"/> Student <input type="checkbox"/> Retired <input type="checkbox"/> Other ( <i>Please specify</i> )		

## FORM D: PATIENT RECORD FORMS

# COPD Pharmacy Screening Project

**A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD)**

*A project funded through the Investigator Initiated Grant Scheme through the 4<sup>th</sup> Community Pharmacy Agreement*



Thank you for participating in the COPD Pharmacy Screening project. Please use the form attached to record patient information and results of COPD screening and referral.

**At the patient's initial visit (VISIT 1)**, please complete Sections A to F if they have been identified as potentially "at-risk" of having COPD through the Initial Screening Questionnaire (ISQ). Record results of lung function screening using Piko-6 for this patient under Section E and details of action taken under Section F.

All patients identified as "at-risk" of having COPD through the ISQ and/or through the Piko-6 should be referred to their local general practitioner for full diagnosis. Patients that are subsequently diagnosed with COPD should return to the pharmacist for further testing, counselling and management at approximately **one month (VISIT 2), three months (VISIT 3) and six months (VISIT 4) after initial screening**. Please conduct lung function screening using the Piko-6 during each of the follow-up visits and record the details in the corresponding sections of this record form.

If you would like further information about the COPD Pharmacy Screening project, please contact the project's chief investigator, Ms Heather Allan, on (07) 3622 2366 or the project manager, Phoebe Kearey, on (02) 9036 7258.

ID Code:

*(To be completed by research staff)*

## VISIT 1

### Patient's details

First Name		Last Name	
Address	Postcode		
Contact Ph #	(h)	(w)	(m)
Date of birth		Sex	<input type="checkbox"/> Male <input type="checkbox"/> Female
Height	(cm)	Weight	(kg)
Date of birth	/ /		

### Patient's general practitioner

GP's name	
Name of surgery / practice	
Address of surgery / practice	
Contact details of GP / Surgery	
Other details	
Email	

### PAST SMOKING BEHAVIOUR

1.	Have you smoked at least 100 cigarettes in your ENTIRE LIFE? (If no, please skip to question 6)	<input type="checkbox"/> No	<input type="checkbox"/> Yes
2.	On the average about how many cigarettes do / did you smoke each day when you were a smoker?		
3.	How long did / have you smoked for? (Prompt: At what age did you start smoking?)	(Years)	
4.	Pack years = $\frac{\text{cigarettes per day}}{20} \times \text{years smoked}$		
5.	When did you last smoke a cigarette?	<input type="checkbox"/> (Days Ago) <input type="checkbox"/> Weeks Ago <input type="checkbox"/> (Months Ago) <input type="checkbox"/> Years Ago <input type="checkbox"/> Don't remember	

### CURRENT SMOKING BEHAVIOUR

6.	a) Do you smoke cigarettes NOW? If no, please skip to the next section - Quitting History.	<input type="checkbox"/> No	<input type="checkbox"/> Yes
	b) If yes, how often do you smoke NOW?	<input type="checkbox"/> Everyday <input type="checkbox"/> Some days Please specify no. of days:	
7.	How soon do you smoke your first cigarette of the day after waking up?	<input type="checkbox"/> More than 60 mins after waking <input type="checkbox"/> Within 31 to 60 mins after waking <input type="checkbox"/> Within 6 to 30 mins after waking <input type="checkbox"/> Within 5 mins after waking	
10.	How many cigarettes per day do you smoke?	<input type="checkbox"/> 10 or less <input type="checkbox"/> 11 to 20	<input type="checkbox"/> 21 to 30 <input type="checkbox"/> 31 or more

QUITTING HISTORY	
14.	<p>Have you EVER TRIED to QUIT smoking COMPLETELY?</p> <p><input type="checkbox"/> No <input type="checkbox"/> Yes</p> <p><i>If no, go to next Section (passive smoking history)</i></p>
15.	<p>When was your last attempt to quit smoking? (Eg. years)</p>
16.	<p>Are you currently using any product / services? (please tick)</p> <p><input type="checkbox"/> None</p> <p><input type="checkbox"/> Nicotine replacement therapy</p> <p><input type="checkbox"/> patches.....describe.....</p> <p><input type="checkbox"/> gum.....describe.....</p> <p><input type="checkbox"/> lozenges.....describe.....</p> <p><input type="checkbox"/> inhaler.....describe.....</p> <p><input type="checkbox"/> Prescription medicine</p> <p><input type="checkbox"/> Counselling services (e.g. Quitline)</p> <p><input type="checkbox"/> Other: _____ (please specify)</p>

**ENVIRONMENTAL EXPOSURE TO OTHER POLLUTANTS**

17. Have you ever been exposed to any of the following?  
Please tick all that apply.

a)	Dusts	<input type="checkbox"/> No	<input type="checkbox"/> Yes
b)	Chemical	<input type="checkbox"/> No	<input type="checkbox"/> Yes
c)	Indoor pollutants	<input type="checkbox"/> No	<input type="checkbox"/> Yes
d)	Outdoor pollutants	<input type="checkbox"/> No	<input type="checkbox"/> Yes

If you answered yes to any of the above items, please provide details below.

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**1. Does the patient have any medical conditions at the moment?**

☐ No

☐ Yes

If yes, please indicate which condition(s) you have below.

**Health problem or condition**

a)	High blood pressure	<input type="checkbox"/> No	<input type="checkbox"/> Yes
b)	High cholesterol	<input type="checkbox"/> No	<input type="checkbox"/> Yes
c)	Any heart condition (eg. Angina, heart failure, etc)	<input type="checkbox"/> No	<input type="checkbox"/> Yes
d)	Diabetes	<input type="checkbox"/> No	<input type="checkbox"/> Yes
e)	Pain (eg. Osteoarthritis, back pain)	<input type="checkbox"/> No	<input type="checkbox"/> Yes
f)	Asthma	<input type="checkbox"/> No	<input type="checkbox"/> Yes
g)	Depression	<input type="checkbox"/> No	<input type="checkbox"/> Yes
h)	Insomnia	<input type="checkbox"/> No	<input type="checkbox"/> Yes
i)	Gastrointestinal (heartburn, stomach ulcer, constipation)	<input type="checkbox"/> No	<input type="checkbox"/> Yes
j)	History of repeated respiratory tract infections (more than 2 episodes over a 6 month period).	<input type="checkbox"/> No	<input type="checkbox"/> Yes
k)	Other ( <i>please specify</i> ):	<input type="checkbox"/> No	<input type="checkbox"/> Yes
		<input type="checkbox"/> No	<input type="checkbox"/> Yes
		<input type="checkbox"/> No	<input type="checkbox"/> Yes
		<input type="checkbox"/> No	<input type="checkbox"/> Yes

**Notes (if any)**



**1. Please provide a complete drug profile by listing details below of any medications that the patient currently takes.**

**Please include:**

- Prescription and over-the-counter medications
- Vitamins, herbal and complementary medicines that may not be on the prescription history
- Antibiotics that have been prescribed to the patient over the past year.

Please attach dispensary records (request from other pharmacies if patient is not a regular) and/or list medications below.

[illegible]

2. Please indicate the patient's current influenza and pneumococcal vaccination statuses by ticking the appropriate boxes below.

<b>Influenza vaccination</b>	<input type="checkbox"/> Current for this season <input type="checkbox"/> Not current <input type="checkbox"/> Don't know
<b>Pneumococcal vaccination</b>	<input type="checkbox"/> Current (within the last 5 years) <input type="checkbox"/> Not current <input type="checkbox"/> Don't know

3. Many people find a way of using their medicines which suits them. This may differ from the instructions on the label or from what their doctor had said. Here are some ways in which people have said they use their medicines. For each statement, please tick the box which best applies to you.

	Never	Rarely	Sometimes	Often	Very often
I forget to use my medicine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I stop taking my medicine for a while	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I decide to miss out a dose	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I take less than instructed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I avoid using my medicine if I can	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Today's date: \_\_\_\_\_

2. Have you done **LUNG FUNCTION** testing before taking part in this service?

☐ Yes

☐ No

3. Have you taken a reliever in the last 4 hours?

☐ Yes

☐ No

4. Some people experience breathlessness, of different levels. Please read the statements below and tick which one(s) apply to you

Statement		Tick if this statement applies to you
0	I am not troubled by breathlessness except on strenuous exercise.	<input type="checkbox"/>
1	I feel short of breath when hurrying or walking up a slight hill.	<input type="checkbox"/>
2	I walk slower than my peers (people of my age) on level ground because of breathlessness, or have to stop for breath when walking at own pace.	<input type="checkbox"/>
3	I stop for breath after walking about 100m or after a few minutes on level ground.	<input type="checkbox"/>
4	I feel too breathless to leave the house, or breathless when dressing or undressing.	<input type="checkbox"/>

#### 4. Results of lung function screening using Piko-6 device

Please record three PIKO readings and circle the best of the three readings (i.e. the highest FEV<sub>1</sub> value obtained). This reading will need to be recorded on the **GP referral form**.

	Reading 1	Reading 2	Reading 3
FEV <sub>1</sub> /FEV <sub>6</sub> (This will be expressed as a ratio)			
Colour Zone	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)

**1. Please provide details about which of the following actions were taken:**

Counselling area	Description of counselling (if needed)
<input type="checkbox"/> Smoking cessation	<input type="checkbox"/> Gave smoking cessation advice <input type="checkbox"/> Referred to Quitline <input type="checkbox"/> Provided NRT <input type="checkbox"/> Referred to prescriber for prescription treatment <input type="checkbox"/> None of the above
If NRT was provided, please specify the type?	<input type="checkbox"/> Patches <input type="checkbox"/> Gum <input type="checkbox"/> Inhaler <input type="checkbox"/> Lozenge <input type="checkbox"/> Other
<input type="checkbox"/> Medication use	<i>Please specify</i>
<input type="checkbox"/> Device use	<i>Please specify</i>
<input type="checkbox"/> Vaccination recommendation	<input type="checkbox"/> Influenza <input type="checkbox"/> Pneumococcal
<input type="checkbox"/> Maintaining fitness	
<input type="checkbox"/> Information provision	<input type="checkbox"/> Information sheet <input type="checkbox"/> Information about local GPs <input type="checkbox"/> Other
<input type="checkbox"/> Referral to doctor	
<input type="checkbox"/> Others / comments	

☐ **PLEASE ATTACH** a copy of the Referral Form to the patient's GP.

☐ **PLEASE REQUEST** the surgery staff / GP to send the patient record back to you for your records.

*(Pharmacist to record)*

Time taken for today's visit	
Date of next visit	

## VISIT 2

1. Today's date \_\_\_\_\_
2. Have you seen your GP/doctor since the last visit?  
☐ Yes      ☐ No
3. Did your GP conduct lung function testing?  
☐ Yes      ☐ No

4. What were the outcomes of that visit?

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4. Have you been prescribed any **NEW MEDICATIONS** since your last VISIT or have you started taking any new medications since then (inc. prescription or over the counter including vitamins and supplements)?  
☐ Yes      ☐ No

Please attach dispensary records (request from other pharmacies if patient is not a regular). Please list vitamins / herbal / complementary medicines as they may not be on the prescription history?

Medication Name	No of units taken each time	No of times / day	Reason

**5. Do you have a further appointment scheduled with your**

*(Please tick which apply)*

☐ GP

Date (if known) \_\_\_\_\_

☐ Respiratory specialist

Date (if known) \_\_\_\_\_

**6. Have you taken a reliever in the last 4 hours?**

☐ Yes

☐ No

**7. Results of lung function screening using Piko-6 device**

Please record three PIKO readings and circle the best of the three readings (i.e. the highest FEV<sub>1</sub> value obtained). This reading will need to be recorded on the **GP referral form**.

	Reading 1	Reading 2	Reading 3
FEV <sub>1</sub> /FEV <sub>6</sub> (This will be expressed as a ratio)			
Colour Zone	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)

**Notes (if any)**

1. Please provide details about which of the following actions were taken:

Counselling area	Description of counselling, if needed
<input type="checkbox"/> Smoking cessation	<input type="checkbox"/> Gave smoking cessation advice <input type="checkbox"/> Referred to Quitline <input type="checkbox"/> Provided NRT <input type="checkbox"/> Referred to prescriber for prescription treatment <input type="checkbox"/> None of the above
If NRT was provided, please specify the type?	<input type="checkbox"/> Patches <input type="checkbox"/> Gum <input type="checkbox"/> Inhaler <input type="checkbox"/> Lozenge <input type="checkbox"/> Other
<input type="checkbox"/> Medication use	<i>Please specify</i>
<input type="checkbox"/> Device use	<i>Please specify</i>
<input type="checkbox"/> Vaccination recommendation	<input type="checkbox"/> Influenza <input type="checkbox"/> Pneumococcal
<input type="checkbox"/> Maintaining fitness	
<input type="checkbox"/> Information provision	<input type="checkbox"/> Information sheet <input type="checkbox"/> Information about local GPs <input type="checkbox"/> Other
<input type="checkbox"/> Referral to doctor	
<input type="checkbox"/> Others / comments	

(Pharmacist to record)

Time taken for today's visit	
Date of next visit	

## VISIT 3

1. Today's date \_\_\_\_\_

2. Have you seen your GP/doctor since the last visit?

☐ Yes ☐ No

3. Did your GP conduct lung function testing?

☐ Yes ☐ No

4. What were the (other) outcomes of that visit?

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5. Have you been prescribed any **NEW MEDICATIONS** since your last VISIT or have you started taking any new medications since then (inc. prescription or over the counter including vitamins and supplements)?

☐ Yes ☐ No

Please attach dispensary records (request from other pharmacies if patient is not a regular). Please list vitamins / herbal / complementary medicines as they may not be on the prescription history?

Medication Name	No of units taken each time	No of times / day	Reason

**6. Do you have a further appointment scheduled with your**

*(Please tick which apply)*

☐ GP

Date (if known) \_\_\_\_\_

☐ Respiratory specialist

Date (if known) \_\_\_\_\_

**7. Have you taken a reliever in the last 4 hours?**

☐ Yes

☐ No

**8. Results of lung function screening using Piko-6 device**

Please record three PIKO readings and circle the best of the three readings (i.e. the highest FEV<sub>1</sub> value obtained). This reading will need to be recorded on the **GP referral form**.

	Reading 1	Reading 2	Reading 3
FEV <sub>1</sub> /FEV <sub>6</sub> (This will be expressed as a ratio)			
Colour Zone	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)

**Notes (if any)**

1. Please provide details about which of the following actions were taken:

Counselling area	Description of counselling, if needed
<input type="checkbox"/> Smoking cessation	<input type="checkbox"/> Gave smoking cessation advice <input type="checkbox"/> Referred to Quitline <input type="checkbox"/> Provided NRT <input type="checkbox"/> Referred to prescriber for prescription treatment <input type="checkbox"/> None of the above
If NRT was provided, please specify the type?	<input type="checkbox"/> Patches <input type="checkbox"/> Gum <input type="checkbox"/> Inhaler <input type="checkbox"/> Lozenge <input type="checkbox"/> Other
<input type="checkbox"/> Medication use	<i>Please specify</i>
<input type="checkbox"/> Device use	<i>Please specify</i>
<input type="checkbox"/> Vaccination recommendation	<input type="checkbox"/> Influenza <input type="checkbox"/> Pneumococcal
<input type="checkbox"/> Maintaining fitness	
<input type="checkbox"/> Information provision	<input type="checkbox"/> Information sheet <input type="checkbox"/> Information about local GPs <input type="checkbox"/> Other
<input type="checkbox"/> Referral to doctor	
<input type="checkbox"/> Others / comments	

(Pharmacist to record)

Time taken for today's visit	
Date of next visit	

## VISIT 4 – FINAL VISIT

1. Today's date \_\_\_\_\_
2. Have you seen your GP/doctor since the last visit?  
☐ Yes      ☐ No
3. Did your GP conduct lung function testing?  
☐ Yes      ☐ No

4. What were the (other) outcomes of that visit?

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5. Have you been prescribed any **NEW MEDICATIONS** since your last VISIT or have you started taking any new medications since then (inc. prescription or over the counter including vitamins and supplements)?  
☐ Yes      ☐ No

Please attach dispensary records (request from other pharmacies if patient is not a regular). Please list vitamins / herbal / complementary medicines as they may not be on the prescription history?

Medication Name	No of units taken each time	No of times / day	Reason

**6. Do you have a further appointment scheduled with**

*(Please tick which apply)*

☐ your GP

Date (if known): \_\_\_\_\_

☐ a respiratory specialist

Date (if known): \_\_\_\_\_

**7. Have you taken a reliever in the last 4 hours?**

☐ Yes

☐ No

**8. Results of lung function screening using Piko-6 device**

Please record three PIKO readings and circle the best of the three readings (i.e. the highest FEV<sub>1</sub> value obtained). This reading will need to be recorded on the **GP referral form**.

	Reading 1	Reading 2	Reading 3
FEV <sub>1</sub> /FEV <sub>6</sub> (This will be expressed as a ratio)			
Colour Zone	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)	<input type="checkbox"/> Green (low risk) <input type="checkbox"/> Yellow (med risk) <input type="checkbox"/> Red (high risk)

**Notes, if any**

1. Please provide details about which of the following actions were taken:

Counselling area	Description of counselling, if needed
<input type="checkbox"/> Smoking cessation	<input type="checkbox"/> Gave smoking cessation advice <input type="checkbox"/> Referred to Quitline <input type="checkbox"/> Provided NRT <input type="checkbox"/> Referred to prescriber for prescription treatment <input type="checkbox"/> None of the above
If NRT was provided, please specify the type?	<input type="checkbox"/> Patches <input type="checkbox"/> Gum <input type="checkbox"/> Inhaler <input type="checkbox"/> Lozenge <input type="checkbox"/> Other
<input type="checkbox"/> Medication use	<i>Please specify</i>
<input type="checkbox"/> Device use	<i>Please specify</i>
<input type="checkbox"/> Vaccination recommendation	<input type="checkbox"/> Influenza <input type="checkbox"/> Pneumococcal
<input type="checkbox"/> Maintaining fitness	
<input type="checkbox"/> Information provision	<input type="checkbox"/> Information sheet <input type="checkbox"/> Information about local GPs <input type="checkbox"/> Other
<input type="checkbox"/> Referral to doctor	
<input type="checkbox"/> Others / comments	

(Pharmacist to record)

Time taken for today's visit	
Date of next visit	

## FORM E: GP REFERRAL FORM

# COPD Pharmacy Screening Project

**A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD)**

*A project funded through the Investigator Initiated Grant Scheme through the 4<sup>th</sup> Community Pharmacy Agreement*



The COPD Pharmacy Screening Project is currently being trialled in Newcastle and the Hunter Valley to assess the feasibility and impact of pharmacist collaboration with general practitioners in the early detection, referral and ongoing management of COPD. This is the first project to test the feasibility of the pharmacists' role in screening for COPD in a community setting in Australia.

This patient has been referred to you because they have been identified by their pharmacist as being 'at risk' of COPD. A report about the patient's lung function screening ( $FEV_1/FEV_6$ ), medication and relevant smoking history and symptoms follows.

**As the patient's primary care physician, we ask that you:**

1. **Read through the following report** of the patient's medical history and lung function status.
2. **Refer the patient and/or make a diagnosis** as appropriate.
3. **Notify the referring pharmacist of whether or not a diagnosis of COPD is made** by completing the **GP Report Form** and returning it to the referring pharmacist.  
(Please note that if the patient is not diagnosed with COPD, we would like to know whether any other diagnoses are made, for example another respiratory condition.)

As the patient's primary care physician, **you will provide usual care**. The pharmacist will complement this care by ensuring the patient is compliant with prescribed medications, has access to smoking cessation products, is able to use their inhaler devices properly, etc.

The pharmacists will also collate data on the results of the screening and referral process, with the patient's consent.



**The University of Sydney**

ID Code:

*(To be completed by research staff)*

### Patient

First Name		Last Name	
Address			
		Postcode:	
Date of screening			
Height		Weight	
Date of birth			

### General Practitioner

GP's name	
Name of surgery / practice	
Address of surgery /practice	
Email	

### Pharmacist

Pharmacist's name			
Pharmacy name			
Address			
Telephone		Fax	
Email			

## 1. Smoking history summary

<b>Smoking Status</b>	<input type="checkbox"/> Current <input type="checkbox"/> Current smoker attempting to quit <input type="checkbox"/> Past Smoker Not smoked for ..... years .....months <input type="checkbox"/> Never smoked	
<b>Number of pack years smoked</b>	(Pack years = No. of cigarettes per day / 20, multiplied by no. of years smoked)	
<b>Number of cigarettes per day</b>	<input type="checkbox"/> 10 or less <input type="checkbox"/> 11 to 20	<input type="checkbox"/> 21 to 30 <input type="checkbox"/> 31 or more
<b>How soon within waking the patient smokes their first cigarette of the day</b>	<input type="checkbox"/> More than 60 mins after waking <input type="checkbox"/> Within 31 to 60 mins after waking <input type="checkbox"/> Within 6 to 30 mins after waking <input type="checkbox"/> Within 5 mins after waking	

## 2. Exposure to other pollutants

The patient recalls being exposed to the following environmental pollutants:

a)	<b>Dusts</b>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
b)	<b>Chemical</b>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
c)	<b>Indoor pollutants</b>	<input type="checkbox"/> No	<input type="checkbox"/> Yes
d)	<b>Outdoor pollutants</b>	<input type="checkbox"/> No	<input type="checkbox"/> Yes

**Details (if applicable)**

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### 3. Medical history

Please note if the patient has reported the following medical conditions (by ticking those that apply):

- ☐ High blood pressure
- ☐ High cholesterol
- ☐ Any heart condition (eg. Angina, heart failure, etc)
- ☐ Diabetes
- ☐ Pain (eg. Osteoarthritis, back pain)
- ☐ Asthma
- ☐ Depression
- ☐ Insomnia
- ☐ Gastrointestinal (heartburn, stomach ulcer, constipation)
- ☐ History of repeated respiratory tract infections (> 2 episodes over 6 months).
- ☐ Other (please specify): \_\_\_\_\_

### 4. Medication history / dispensing record

Please see the attached dispensing history record and/or a list of the medications the patient is using below.

Medication Name	No of units taken each time	No of times a day	Reason


## 5. Vaccination status

<b>Influenza vaccination</b>	<input type="checkbox"/> Current for this season <input type="checkbox"/> Not Current <input type="checkbox"/> Don't know
<b>Pneumococcal vaccination</b>	<input type="checkbox"/> Current (within the last 5 years) <input type="checkbox"/> Not Current <input type="checkbox"/> Don't know



6. **Patient's score on the Modified MRC dyspnoea scale**, which measures levels of breathless on a scale of 0 to 4 (with 0 being the least severe and 4 being the most severe).

MRC dyspnoea scale statement		Ticked by patient
0	I am not troubled by breathlessness except on strenuous exercise	<input type="checkbox"/>
1	I feel short of breath when hurrying or walking up a slight hill	<input type="checkbox"/>

2	I walk slower than my peers(people of my age) on level ground because of breathlessness, or has to stop for breath when walking at own pace	<input type="checkbox"/>
3	I stop for breath after walking about 100m or after a few minutes on level ground	<input type="checkbox"/>
4	I feel too breathless to leave the house, or breathless when dressing or undressing	<input type="checkbox"/>

### 7. Results of lung function screening using Piko-6 device

FEV <sub>1</sub> /		FEV <sub>1</sub> /FEV <sub>6</sub> (Best reading of 3)	
Colour Zone/ COPD Risk Level	(Please circle):		
	Green	Yellow	Red
	LOW	MEDIUM	HIGH

### 8. I have conducted the following services for the patient where applicable:

Counselling area	Description of counselling
<input type="checkbox"/> Smoking cessation	
<input type="checkbox"/> Medication use	
<input type="checkbox"/> Device use	
<input type="checkbox"/> Vaccination recommendation	
<input type="checkbox"/> Maintaining fitness	
<input type="checkbox"/> Information	



"When you can't breathe..  
nothing else matters" ~



The University of Sydney

provision	
<input type="checkbox"/> Referral to doctor	
<input type="checkbox"/> Others	

As noted above, I refer the patient to you for further investigation and/or action.

Please do not hesitate to contact me if you have any queries.

Thanking you

Chief Pharmacist / Pharmacist in Charge

**PHARMACY LABEL**



## FORM F: GP REPORT FORM

# COPD Pharmacy Screening Project

**A collaborative screening, referral and management process to improve health outcomes in Chronic Obstructive Pulmonary Disease (COPD)**

*A project funded through the Investigator Initiated Grant Scheme through the 4<sup>th</sup> Community Pharmacy Agreement*



The COPD Pharmacy Screening Project is currently being trialled in Newcastle and the Hunter Valley to assess the feasibility and impact of pharmacist collaboration with general practitioners in the early detection, referral and ongoing management of COPD. This is the first project to test the feasibility of the pharmacists' role in screening for COPD in a community setting in Australia.

This patient has been referred to you because they have been identified by their pharmacist as being 'at risk' of COPD. A report about the patient's lung function screening (FEV<sub>1</sub>/FEV<sub>6</sub>), medication and relevant smoking history and symptoms follows.

**As the patient's primary care physician, we ask that you:**

1. **Read through the GP Referral Report of this patient's** medical history and lung function status.
2. **Refer the patient and/or make a diagnosis** as appropriate.
3. **Notify the referring pharmacist of whether or not a diagnosis of COPD is made** by completing THIS FORM (**GP Report Form**) and returning it to the referring pharmacist. Their contact details are provided on Page 3 of this form. (Please note that if the patient is not diagnosed with COPD, we would like to know whether any other diagnoses are made, for example another respiratory condition.)

As the patient's primary care physician, **you will provide usual care**. The pharmacist will complement this care by ensuring the patient is compliant with prescribed medications, has access to smoking cessation products, is able to use their inhaler devices properly, etc. The pharmacists will also collate data on the results of the screening and referral process, with the patient's consent.



The University of Sydney

## Section A: Patient Details

### Patient

First Name		Last Name	
Address			
		Postcode	
Date of birth			
Date of GP visit			

### General Practitioner

GP's name			
Surgery name			
Address			
Telephone		Fax	
Email			

### Pharmacist

Pharmacist's name			
Pharmacy name			
Pharmacy address			
Phone:		Fax:	
Email			

## Section B: Diagnosis

1. a) Was a diagnosis made?

☐ No ☐ Yes

b) If yes, was the diagnosis

☐ No ☐ Yes

c) If no, was the diagnosis

☐ No ☐ Yes

COPD?

respiratory related?

2. What diagnostic tests were conducted?

<input type="checkbox"/>	Spirometry	
	- FEV <sub>1</sub> % predicted	
	- FEV <sub>1</sub> /FVC	
<input type="checkbox"/>	Other	
	- Details	

### Section C: Treatment and Management

3. What were the main outcomes from your consultation with this patient?

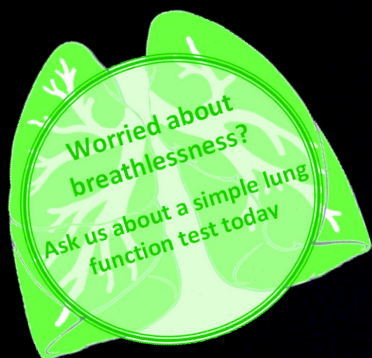
- ☐ Pharmacological treatment initiated
- ☐ Referral to pulmonary rehabilitation
- ☐ Referral to support group
- ☐ COPD Action Plan
- ☐ Smoking cessation
- ☐ Other (please specify): \_\_\_\_\_
- ☐ No action taken

4. Key recommendations for the patient to be followed up by the pharmacist to assist with managing their condition?

	Counselling area	Specific services recommended for this patients
<input type="checkbox"/>	Smoking cessation	
<input type="checkbox"/>	Medication use <ul style="list-style-type: none"> <li>- e.g. adherence support</li> <li>- e.g. medication review</li> <li>- e.g. medicines information</li> <li>- e.g. administration instructions</li> <li>- e.g. side-effects minimisation</li> </ul>	
<input type="checkbox"/>	Device use	
<input type="checkbox"/>	Others <ul style="list-style-type: none"> <li>- e.g. vaccination recommendation</li> <li>- e.g. provision of information</li> </ul>	

**Please fax / email / mail this document to the pharmacist who provided the screening service for the patient at the address provided above.**





# Would this knock the wind out of you?

## Do you:<sup>1</sup>

- Cough several times most days?
- Bring up phlegm or mucus most days?
- Get out of breath more easily than others your age?
- Are you over 45 years old?
- Are you a smoker or ex-smoker?

It isn't normal to be out of breath. If you answered yes to 3 or more of the above questions, speak with your pharmacist here today about a simple lung function test.

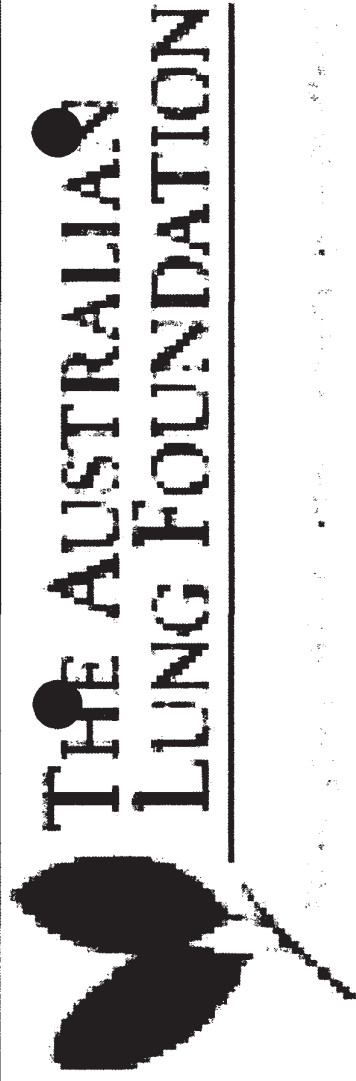
COPD or Chronic Obstructive Pulmonary Disease is a long term disease of the lungs that includes emphysema and chronic bronchitis. It affects up to 1 in 6 Australians aged 45 or over and often causes breathlessness.<sup>2</sup>



A national, not-for-profit organisation that leads the promotion of lung health in Australia.

[www.lungnet.com.au](http://www.lungnet.com.au) | 1800 654 301

1. Global Initiative for Chronic Obstructive Lung Disease. *Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease: Executive Summary* 2005. Found at: <http://goldcopd.com>  
2. Abramson M.J. Respiratory symptoms and lung function in older people with asthma or chronic obstructive pulmonary disease. *MJA* 2005;183(1):S23-S25



# Feeling breathless?

If you are feeling breathless, have a persistent cough and a history of smoking, you could be at risk of Chronic Obstructive Pulmonary Disease (COPD). COPD is a serious lung disease that affects one in five Australians over 40.

## **Free lung function testing will be available:**

Wednesday 15th April from 10:00am

LORN VILLAGE PHARMACY

25 Belmore Road, Lorn

Call Graham Burls on 02 4933 7973 (bookings preferred)

Screening is QUICK and PAINLESS and conducted in the pharmacy.

If your screening results indicate possible COPD, you will be referred on to your GP for full assessment, diagnosis and follow-up.

**For more information about COPD call The Australian Lung Foundation toll free on 1800 654 301**

# Feeling Breathless?

If you are feeling breathless, have a persistent cough and a history of smoking, you could be at risk of Chronic Obstructive Pulmonary Disease (COPD). COPD is a serious lung disease that affects one in five Australians over 40.

**Free Lung Function Testing is Available  
on THURSDAYS during April**

● **At VALENTINE PHARMACY**

**70a Dilkeria Ave, Valentine**

Call Gary Wilcher on 4946 8464

(bookings preferred)

Screening is QUICK and PAINLESS and conducted in the pharmacy.

● If your screening results indicate possible COPD, you will be referred on to your GP for full assessment, diagnosis and follow-up.

For more information about COPD call The Australian Lung Foundation toll free on 1800 654 301.



**THE AUSTRALIAN  
LUNG FOUNDATION**

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*"When you can't breathe...nothing else matters"™*

c8537156-9Apr



# THE AUSTRALIAN LUNG FOUNDATION

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*"Smoking is the leading cause of lung disease"*

## **FEELING BREATHLESS?**

If you are feeling breathless, have a persistent cough and a history of smoking, you could be at risk of Chronic Obstructive Pulmonary Disease (COPD). COPD is a serious lung disease that affects one in five Australians over 40.

**Free lung function testing will be available:**

**Monday 20th April from 1:00pm**

**MEDOWIE PHARMACY**

Medowie Shopping Village, Ferodale Road, Medowie

● **Call Gavin Smith on 4982 8564 (bookings preferred)**

Screening is QUICK and PAINLESS and conducted in the pharmacy.

If your screening results indicate possible COPD, you will be referred on to your GP for full assessment, diagnosis and follow-up.

**For more information about COPD call**

**The Australian Lung Foundation**

**TOLL FREE on 1800 654 301**

## MEDIA RELEASE

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Date: 5 February 2009

### **Feeling breathless? A Free lung function test is available at a pharmacy near you**

In a research program, which is the first of its kind in Australia, free lung function testing is being offered at selected community pharmacies in the Newcastle/Hunter Valley region. The program is designed to facilitate more timely diagnosis of Chronic Obstructive Pulmonary Disease which is estimated to affect one in five people over 40 in Australia<sup>i</sup>.

The Australian Lung Foundation, in collaboration with the University of Sydney, hopes the program will assess the feasibility of lung function screening as a tool for identifying those at risk of Chronic Obstructive Pulmonary Disease (COPD). The program is funded by the Australian Government Department of Health and Ageing as part of the Fourth Community Pharmacy Agreement managed by the Pharmacy Guild of Australia.

Chief Investigator, Heather Allan, of The Australian Lung Foundation, said that community pharmacists were well placed to support General Practitioners to diagnose COPD in patients that might not be speaking to their doctor about concerns about their lung health.

"Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of death and hospitalisation in Australia", said Ms Allan. "Of particular alarm to the Lung Foundation however, is the fact that it also remains largely unrecognised and under-diagnosed. Previous research shows that between 40% and 80%<sup>ii</sup> of people with COPD don't know they have it and may mistake their symptoms for another condition, like asthma.

"Symptoms of COPD, such as shortness of breath and persistent cough, are often passed off by the patients themselves as "normal" signs of ageing or side-effects of smoking. Consequently, patients often do not seek advice from their doctor until their condition has become more advanced."

Ms Allan said that the research program will work with pharmacists to identify patients who may be at risk of COPD and give them a lung function screening test right in the pharmacy – a test which is quick and painless.

Local pharmacist, **pharmacist to fill in details**, said: "Pharmacies can play an important role by speaking to our patients about their lung health, testing them and then making sure that those whose results indicate possible COPD, are referred on to their GP for full assessment and diagnosis.

"We hope that this program will raise awareness about COPD and encourage earlier diagnosis for those patients who might not be speaking to their GPs about their breathlessness", said Ms Allan. "Early detection and management can make a significant difference to the quality of life of people with COPD and to their longer term health."

**Local pharmacist's name** encouraged those with breathlessness, persistent cough and a history of smoking to drop by **name of pharmacy** to find out more.

Ends.

For further information on the program contact Phoebe Kearey at [phoebe@lungnet.com.au](mailto:phoebe@lungnet.com.au) or 0418 886 186.

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<sup>i</sup> Extrapolated from prevalence figures published in Access Economics. *Economic impact of COPD and cost effective solutions*, 2008

<sup>ii</sup> Tinkelman DG, Price DB, Nordyke RJ, Halbert R (2006). Misdiagnosis of COPD and asthma in primary care patients 40 years of age and over. *J Asthma* 43:75-80

## FEEDBACK QUESTIONNAIRE FOR PHARMACISTS

### COPD Pharmacy Screening Project

Thank you for participating in the COPD Pharmacy Screening Project recently. We would like to ask you a few questions about your experience with the program. Your feedback will help us to determine how effective this new service is and whether it would be helpful to continue to offer it in community pharmacies in the future.

Your responses to this interview will remain confidential. Data will be available to the research staff for analysis and reporting to the Pharmacy Guild of Australia that funded the project under the Fourth Community Pharmacy Agreement. Data may also be reported at relevant conferences and in academic journals. You will not be able to be identified from any of your responses. Participation is entirely voluntary and you can choose not to participate in this interview at any time without any consequences.

The interview will take approximately 15 to 20 minutes to complete.

Are you happy to continue?

☐ Yes    ☐ No

#### Section A: Demographics

Age

years

Gender

☐ Male    ☐ Female

Cultural background:

<input type="checkbox"/> European	<input type="checkbox"/> African
<input type="checkbox"/> Caucasian (Australian)	<input type="checkbox"/> Indigenous & Torres Strait Islander
<input type="checkbox"/> Eurasian	<input type="checkbox"/> Other ( <i>Please specify</i> )
<input type="checkbox"/> Asian	

## Section B: COPD Knowledge

1. Which of the following increase the risk of low bone mineral density in patients with COPD?
  - a. Oral corticosteroids
  - b. Smoking
  - c. Low BMI
  - d. All of the above
  - e. A & B only.
2. Acute exacerbations of COPD may be treated with:
  - a. Antibiotics
  - b. LABAs
  - c. ICS
  - d. Mucolytics
  - e. Theophylline.
3. Which of the following is not a risk factor for COPD?
  - a. Environmental tobacco smoke
  - b. Alpha-1 anti-trypsin deficiency
  - c. Airway hyperresponsiveness
  - d. Recurrent respiratory tract infections in childhood
  - e. None of the above.
4. Which of the following medication(s) are indicated for the prevention of exacerbations associated with COPD?
  - a. Ipratropium
  - b. Tiotropium
  - c. Salmeterol + fluticasone
  - d. A & B only
  - e. B & C only.
5. A patient is confirmed as having COPD if postbronchodilator:
  - a. FEV1 <80% and FEV1/FVC > 0.70
  - b. FEV1 >80% and FEV1/FVC < 0.70
  - c. FEV1 <80% and FEV1/FVC < 0.70
  - d. FEV1 >80% and FEV1/FVC > 0.70
  - e. None of the above.
6. Which of the following statements is true?
  - a. Cholinergic constriction is a dominant reversible mechanism of airflow limitation in COPD
  - b. There is a marked increase in neutrophils in patients with asthma compared to patients with COPD
  - c. Chronic cough in COPD is typically dry and occurs mostly at night
  - d. Airflow limitation is fully reversible in COPD
  - e. Asthma and COPD are both obstructive lung disease and are treated the same.
7. Up to how many patients are estimated to have poor inhaler technique?
  - a. 30%
  - b. 50%
  - c. 60%
  - d. 70%
  - e. 80%
8. Which of the following statements with regards to smoking cessation therapy is true?
  - a. Varenicline is a nicotinic acetylcholine receptor partial antagonist and is more than twice as effective as bupropion in smoking cessation
  - b. Bupropion may be combined with patches in smokers with severe nicotine dependence that have made many unsuccessful attempts to quit
  - c. The period between starting a course of bupropion and a course of varenicline must be at least three months
  - d. Varenicline may be combined with nicotine replacement therapies
  - e. Nicotine patches are more effective than nicotine gum in increasing the chances of quitting.

9. According to the classification of severity of COPD recognised in Australia and New Zealand a patient with severe COPD has:
  - a. FEV1<70%
  - b. FEV1<60%
  - c. FEV1<50%
  - d. FEV1<40%
  - e. Both C & D.
10. With regards to the parasympathetic nervous system:
  - a. Stimulation of beta1 receptors results in bronchodilation
  - b. Stimulation of beta2 receptors results in bronchoconstriction
  - c. Stimulation of muscarinic cholinergic receptors results in bronchoconstriction
  - d. Stimulation of muscarinic cholinergic receptors results in bronchodilation
  - e. A & C.
11. The most useful diagnostic investigation for COPD is:
  - a. Spirometry
  - b. Peak expiratory flow
  - c. Chest X-ray
  - d. Arterial blood gases
  - e. Alpha-1 anti-tryptsin deficiency.

*Questions 12 to 13 relate to the following case study (Mrs King).*

*Mrs King is a 45 year old customer of yours with mild/moderate COPD (FEV1 = 60% predicted; FEV1/FVC = 0.63). She quit smoking three years ago, and finds she is getting increasingly breathless with work activities over the last few weeks. Initially Ventolin relieved her shortness of breath, however lately she needs to use it more than three times a day to relieve her symptoms. She is not on any regular maintenance treatment.*

12. Which of the following treatments should be initiated as regular maintenance treatment?
  - a. Terbutaline
  - b. Salmeterol
  - c. Tiotropium
  - d. Fluticasone
  - e. Salmeterol + fluticasone.

13. What other pharmacological/non-pharmacological treatments would Mrs King benefit from at this point in her condition?
  - a. Pulmonary rehabilitation therapy, NRT and weight loss
  - b. Influenza vaccination, pulmonary rehabilitation and antibiotics
  - c. Antibiotics, influenza vaccination and pneumococcal vaccination
  - d. Influenza vaccination, weight loss and NRT
  - e. Pulmonary rehabilitation, influenza vaccination and pneumococcal vaccination.

*Questions 14 to 15 relate to the following case study (Mr Black).*

*Mr Black is a 59 year old customer of yours with moderate to severe COPD (FEV1 = 55% predicted; FEV1/FVC = 0.54). He has been on regular maintenance therapy with tiotropium for more than eight years and the doctor recently mentioned that he will need to add another puffer to his list of medications.*

14. What treatment would his doctor most likely add next?
  - a. Ipratropium
  - b. Salmeterol
  - c. Fluticasone
  - d. Salmeterol + fluticasone
  - e. Theophylline.
15. Ten months later, he is admitted to hospital for an exacerbation of COPD. There are no clinical signs of infection or hypoxia. What would be the most appropriate course of action to treat his exacerbation given his history?
  - a. Cease tiotropium and commence ipratropium as a short acting bronchodilator as well as oral corticosteroids for up to 2 weeks
  - b. Continue with tiotropium and add ipratropium as a short acting bronchodilator and oral corticosteroids for up to 2 weeks

- c. Cease tiotropium and add salbutamol as a short acting bronchodilator as well as oral corticosteroids for up to 2 weeks
  - d. Continue with tiotropium and add salbutamol as a short acting bronchodilator as well as oral corticosteroids for up to 2 weeks
  - e. None of the above.
16. Which of the following statements is true?
- a. Standard doses of eformoterol are superior to standard doses of salmeterol in improving lung function
  - b. LABAs are currently listed on the PBS for COPD
  - c. ICS + LABA combination products are more effective than ICS or LABAs alone in improving lung function
  - d. ICS + LABA combination products are indicated for the initiation of bronchodilator therapy in COPD
  - e. ICS + LABA combination products have no effect on reducing exacerbations.
17. The most common side effect associated with anticholinergic use is:
- a. Glaucoma
  - b. Dry mouth
  - c. Hypokalaemia
  - d. Tremor
  - e. Cataracts.
18. High dose inhaled corticosteroids increase the risk of:
- a. Glaucoma
  - b. Pneumonia
  - c. Oral candidiasis
  - d. All of the above
  - e. B & C only.
19. ICS + LABA combination products are indicated in COPD patients with:
- a. An FEV1<80% predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.
  - b. An FEV1<70% predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.
  - c. An FEV1 <60% predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.
  - d. An FEV1 <50% predicted normal with significant symptoms despite regular beta-2 agonist bronchodilator therapy.
  - e. None of the above.
20. The aims of treatment in stable COPD are to
- a. Prevent disease progression
  - b. Improve quality of life
  - c. Prevent exacerbations
  - d. All of the above
  - e. A & B only.

### Section C: Pharmacist satisfaction

1. Overall, how would you rate your level of satisfaction with the COPD screening program?

Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied
1	2	3	4	5

2. How satisfied were you with the program staff?

Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very Satisfied
1	2	3	4	5

3. How easy did you find it to administer the screening program in your pharmacy?

Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult
1	2	3	4	5

4. Overall, how useful or effective do you feel the screening program was for patients that participated?

Very effective	Effective	Neither effective nor ineffective	Ineffective	Very ineffective
1	2	3	4	5

5. Overall, how useful or effective do you feel the program was for pharmacy?

Very effective	Effective	Neither effective nor ineffective	Ineffective	Very ineffective
1	2	3	4	5

6. Overall, how useful or effective do you think general practice found the program?

Very effective	Effective	Neither effective nor ineffective	Ineffective	Very ineffective
1	2	3	4	5

7. How do you feel the program affected your relationships with patients that participated in the screening?

Very positively	Positively	No effect	Negatively	Very negatively
1	2	3	4	5

8. How do you think that participating in the program affected relationships with patients that did not participate in the program?

Very positively	Positively	No effect	Negatively	Very negatively
1	2	3	4	5

9. How do you feel the program affected your relationships with GPs?

Very positively	Positively	No effect	Negatively	Very negatively
1	2	3	4	5

10. Do you think that patients that you referred to a general practitioner would have spoken to a GP about their lung health if they had not participated in this program?

☐ Yes ☐ No ☐ Unsure

11. How do you feel offering the screening program in your pharmacy impacted on your business?

Very positively	Positively	No effect	Negatively	Very negatively
1	2	3	4	5

12. How effective do you feel your collaboration with GPs was?

Very effective	Effective	Neither effective nor ineffective	Ineffective	Very ineffective
1	2	3	4	5

13. How long did the program take to administer?

a. Initial screening visit	(minutes per patient)
b. Follow-up visits	(minutes per patient)
c. Paperwork	

14. For this screening trial, pharmacists received \$20 per patient per visit.

a. As a pharmacist providing the service, do you think was cost-effective?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. If no, what is the minimum amount you would need to be remunerated to consider the screening program cost-effective?	\$ (per patient per visit)	

15. Do you think that the COPD screening, referral and management process could be sustained in community pharmacies, if pharmacists were remunerated appropriately?

☐ Yes ☐ No

16. If the program was offered again in the future, do you think you would participate?

☐ Yes ☐ No

17. If the program was offered again in the future, would you recommend it to your colleagues?

☐ Yes ☐ No

18. What suggestions would you make for improving the service?

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19. Would you like to make any final comments about the service?

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THANK YOU FOR COMPLETING THIS QUESTIONNAIRE



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## **FILE DETAILS**

*Audio Length:* 84 minutes

*Audio Quality:* Fair

*Number of Facilitators:* Three

*Number of Interviewees:* Focus Group

*Other Comments:* Difficult to distinguish between speakers

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## **START OF TRANSCRIPT**

Facilitator 1: I think, on behalf of the project team, they would like to thank you so, so much for being here tonight but also just for taking part in the project as well.

So what we're going to do is we're just going to run through a few questions but really it's about you guys talking and giving feedback about the good, the bad and the ugly, I guess, about the COPD [funds], your screening project. So if anyone wants to kick off, they want to maybe tell what worked, what didn't work, what you liked about it, what you didn't like. So if anyone wants to kick off.

Male 1: Did anyone get more doctor responses than I did, as I had zero? That's the most striking part of the whole thing.

Male 2: I got one response.

Female 1: I got a few.

Female 2: Yeah, we got a few also but I think that was the most disappointing part of it that there wasn't more positive feedback from the doctors.

- Male 1: I had seven participants, I might have had a lot less than other pharmacies but we got zero.
- Female 2: We had 17 so, I guess, in that range - I didn't actually add up how many we did get that replied but we did get feedback from the doctors and they referred them on but we didn't actually pick up anyone that we thought would have been a problem with anything. What we did find that was beneficial were for a couple who we were trying to encourage to stop smoking once they actually saw their readings. That was a little bit more than encouragement for them seeing how low they were. But when we referred them on to the doctors there was not a lot of reinforcement [unclear] that. Or certainly, no feedback to us in that way.
- Male 1: Did you give them a little pep up?
- Female 2: They weren't supposed to have - the doctors were supposed to have been contacted in the area and knew that it was coming when we sent the feedback forms that had all the information with it for them to read. Some of them just seemed to be - there were some that were very supportive but they were the doctors that we expected to be very supportive because they're the proactive doctors and there were others that it was almost like it was too much to read and they were too busy and just didn't see the relevance in it.
- Facilitator 1: How did you go with the feedback from the doctors?
- Female 3: Didn't get very positive feedback. I gave them the form to the patient to give the doctor and the doctor just didn't do much. I think they don't know what's going on. They don't know what it's about and so didn't do much. They're too busy the doctors.
- Facilitator 1: How do you think that could be improved? So you had some good relationships with the doctors and you got their feedback and you seem to have had positive feedback.
- Female 4: Yes, we had some positive feedback. I sort of explained the type of medications available to the customers before they went to the doctors so that they could go and ask their doctors, do I need

something like [Sereva] and the people that I did, one person ended up on Sereva and got diagnosed with COPD so I thought it was really worthwhile, a good screening project. It was good to encourage people that wouldn't normally go and see the doctor about something like that to go and get followed up appropriately. I would say four of our patients got followed up fairly well and another well didn't have COPD but four were sort of on the borderline and one got definitely diagnosed and the others probably will end up with it later on. That was my feeling, [unclear] of about 10.

Facilitator 1: Did you have the same doctor for most of those?

Female 4: No, I think they were all different [inaudible] more regular patients at the pharmacy.

Male 1: That was my experience ...

Female 4: That was one of the drawbacks actually. If you had your own regular customers you would have been able to follow them up a lot more appropriately. It was just a hassle for them to keep coming back to the pharmacy. They didn't realise the length of time involved in the follow-up visits.

Male 1: That's right. I had only two that were my regular customers and the others had seen the promotion in the paper and had come from a long way away. I had seven people all with seven different doctors, a few of whom I had never contacted before. One fellow came having seen a bit in the paper - and you would probably remember Phoebe - wanting us to tell him if he had lung cancer or not, so that was a tough part too. How do we go about giving them maybe a bit more information so we can weed out the people that turn up saying can you tell me - my mate's got lung cancer, have I got lung cancer?

Female 4: Actually that was one of the things I noticed, it was a good project for allaying people's fears, the ones that did think they had COPD when they didn't sort of show it with their readings. So they were anxious that there might have been something wrong with them

when it didn't really show up. So that was one of the good things about the project as well.

Facilitator 1: So it's okay to screen everyone really or do you think you need to have - I know you had the questions being asked ...

Female 4: That sheet was pretty good at sorting out whether you need to go further or not but it was a bit too complicated. I don't know if everyone else thought that but I thought the questionnaire was too complicated.

Facilitator 1: The first questionnaire where they said to actually pick those that we actually sat and interviewed?

Female 4: Yes.

Female 2: I found the paperwork for when we actually had to sit down with them, I thought that was very time consuming for the first lot. I didn't really realise what would be involved, I guess, in the first interviews. We're a small pharmacy and we did 17 and we followed up but we actually had 18 to start with and that was what I found was quite time consuming because there's only one pharmacist. A couple of times I had to actually get Chris to come in and work as well so that there were two of us there because I just found that the first one did seem to take a lot of time just explaining, filling out all the things, getting all the medication history. There seemed to be a few things where they were double asking for things and having to print off everything and then try and understand, I think, the thoughts of the doctors.

The two follow-ups, I found, were good because she had already done all the bits before but I just found that there just seemed to be a lot of questions and a lot of things that we seem to be asking, the first bit.

Male 1: In terms of getting a meaningful result and having enough data to achieve that you would probably need that sort of data.

Female 2: I just probably didn't realise how much time it would have taken up before, so I think if ...

Male 1: But you would have got faster. You must have gotten faster surely?

Female 2: The ones that we picked were our regular customers and they're older customers so it often took a couple of times even them getting the concept of the breathing, just to take the deep breath in and breathe out. A few of them would have their hands held down on the little button and so a few times you would have to sit them back down, let them get their breath back again and then go through it all with them. You would be showing them yourself but because I think because they were older people it was just getting that concept that seemed to take so much time the first time. Even when I called them back for their second ones - the third one was okay I think because it was closer together, but we had a bit more time between the first and the second and some of them seemed to have forgotten what they were doing. They were breathing in instead of breathing out and it just seemed to try and explain and we would really - ours tended, because I guess we're in an older area, they tended to be more elderly people that we were trying to do it with. Also I think for us too, it was only when we had one person who we realised their results didn't make sense and we called them back again and we had re-thought about it all and, you know, a bit of the bend forward with their breathing and that gave us a false reading the first time

I would have liked to have the training. I thought that was the thing that the education on the breathing was really rushed for us at that first one in November. It seems like we did all the other things and then the breathing thing was really rushed at the end and we all had one go before we were sent off. That was the thing that I don't think it was until afterwards when I was re-reading and I think Phoebe had come around and we had done the instruction again in the pharmacy that then I sort of thought, yeah, that's why I can see that person that we thought didn't make sense we called her back in again. Of course, she had [unclear] and she really wasn't. So if you were going to do something like this again or there are

other groups, I think more time should be spent on the actual techniques for what we're doing. I don't know how the others felt.

Male 1: Would you like to identify any differences in that course and the one we did at John Hunter? Were you at both?

Female 1: I was at both.

Male 1: What we did at John Hunter, I felt was fine.

Facilitator 1: I think the first one was a bit more rushed because it was the first time we had run it.

Female 1: We also had a large group.

Female 2: Yeah, and we had a large group because you had to divide into different groups and I just felt like we got up and we said do it and I'll mark you off. I think it was at the end of so much more information that we had received as well that even when we first got the machines I was a bit apprehensive as to what I was actually doing with them. I got a few of the girls in the pharmacy to do it so that I could even get into my own mind what I was doing.

Male 1: The big difference there was when you returned to my pharmacy on that first day that made a huge difference because having done the training at John Hunter, quite happy with that and I felt I was quite capable. But, however many days or weeks go by before you actually do in store, different environment, time has passed, I was all at sea. It's like I hadn't even done it but with you in attendance on the first day it only took a patient or two and that was it. Every one after that, great, but just that little kick-start out in the pharmacy was a huge help.

Facilitator 1: So sending someone to support after the training you found it quite important?

Male 1: Thai's right the first time, yes.

Facilitator 1: What about you?

Male 3: I was pretty happy personally. Were you guys at the Crown? I was happy with the training there because I guess there were just a couple of things - I'm a bit of a drill sergeant when it came to the

technique so I was quite comfortable with my patients to really make sure that they were doing the technique properly. So I made sure that they stood upright and I explained to them that the most important thing is to blow as hard as you can and I did a good couple of demonstrations for them as well and did as best I could and showed them the readings that I got as well. I think that giving those demonstrations and taking the time. In my shop, maybe doing demonstrations in front of other people because we just have to do that on a day by day basis anyway because it's such a small shop so the technique wasn't an issue for me.

The doctor was very supportive, however, I was one of the ones who didn't get to do any follow-up or any referrals but they were very supportive. I think that's because the doctor had seen a [PICO 6] device before. He actually had one. I don't know if any of the other doctors have the PICO 6 devices but I often talk to him about the device and that really helps because we have the awareness then. I think general support from people in the town. They actually told their friends and it just got around that way.

I think time was an issue, definitely. I was like these guys, I didn't quite realise the time it would take. I thought you could probably knock it down in say 15 or 20 minutes but when you really want to be the best to the customers and give them the best presentation, it probably takes at least the 15, 20 and especially by the time you might want to talk to them about it and explain about it but then getting them to come back for the appointment and you discuss it and if there are other medical problems which they sure want to talk about, not just COPD.

So time is an issue but I think in the future if you're going to run it, I think it would be ideal for a trainee pharmacist to do it because although, sure they haven't been in the job for a long period of time, I see no reason why a registration pharmacist couldn't do it and it would be perfect and then you learn a bit more, get more customer experience and it's not the pharmacists' time being taken up but the pharmacist can always overlook what they're doing and

answer any queries for them.

I think it was a great initiative and I'm just disappointed I couldn't devote more to it so that's why I'm continuing to do it in the shop anyway.

Facilitator 1: So you're doing them on a continuing basis now?

Male 3: I just do the odd person. I tested this guy the other day and he turned out to be fine but he just had a cough for a long time and he didn't seem to be getting anywhere. He had already been to the doctor and so I said do a little test anyway. It wouldn't hurt to do it. This weekend, on the long weekend, I'm going to be doing the testing as well just to passers-by as well as locals. I don't mind doing that out of my own time because, sure there's something in it for me, because it's in your store but I think it's a great initiative and I'm learning a lot from it.

Facilitator 1: Is that at [Mathea]?

Male 3: Yeah, [Mathea].

Female: It's a great skill for using [inaudible] ...

Female 2: And that works really well if you've got people, particularly younger ones. We did it on a young guy the other day who was only 27 and was a bit half and half, you know, I must give up smoking. When I did his reading - and he would have been [inaudible] in the yellow section. When I explained to him - because his brother was there and I got his brother to breathe into it and he was in the green and there was like 25 per cent difference and the brother was a couple of years older. So that was enough of an encouragement for him to be pretty determined that ...

Facilitator 1: It's pretty powerful really.

Female 2: So in that case I think that's good. Plus I guess we can all still continue to use it for those that we feel could be at risk of COPD as well.

Facilitator 1: So there are some positive patient experiences. I heard that there may have been some patients who perhaps weren't so happy that

you may have identified yourselves.

Female 4: I had one lady who thought that she got an infection in the chest all winter from the test, from using someone's unclean mouthpiece. I assured her that there was a clean one used every time but she got an infection the next day so she blamed the test for giving her an infection and she had it all winter so she wouldn't agree to any further tests.

Female 1: Back to the infection control, I thought it was quite interesting when they did actually blow so hard and you were standing near them but it was probably worth wearing a heavy duty mask at the time. Probably if it was post the swine flu rather than pre swine flu I probably would have thought to have worn a mask but at times you really feel like you had to just move away. I was actually at that stage in a little booth, like a consult booth so it was confined, not a nice feeling.

Male 2: I had to stand right beside because I thought they were going to pass out. I didn't trust them standing and blowing at the same time and I was just holding their side.

Male 3: For some of the patients it really was an effort for them. Six seconds was a very long time for some of them.

Female 4: I don't think some of them were aware that they had to engage in that difficult sort of concept of breathing out so hard. They weren't aware of how difficult it was going to be.

Female 3: My understanding was that there was supposedly an awareness within the GP community about the trial. I think that more specifically it would have been really good to make contact with the doctors in the areas where we participate. Not so much for us to do it but maybe the Lung Foundation to do it so that there was an awareness that this was happening. I think they're so overwhelmed by what pharmacies are involved with now.

Male 1: I thought it would be better when I rang and spoke sometimes to the doctor but sometimes just to their receptionist or employee rather than a contact from you. Because the ones that I phoned I

did actually know, to some degree, but it didn't make any difference.

Facilitator 1: It still didn't help in your case.

Female: The same with us. The people next door they just weren't interested at all. I would have expected them to be the most interested and he just said, no, that doesn't apply to you, to one customer and I was just really disheartened by that. I expected a lot better response from that GP but he must have been having a bad day.

Facilitator 1: So the relationship between the pharmacist and the doctor appeared to be quite important sort of ...

Male: Yeah, and I agree with ...

Male 1: No. I got a response from people I didn't know and I didn't contact and I got zero response from doctors that I've known for 20 years and I did contact.

Female: The doctors we have a fantastic relationship with weren't interested.

Facilitator 1: Okay, so the doctors and the pharmacists both have to have an interest in this area for it to work really, okay. So maybe just a heightened awareness even like start to give some interest.

Male 1: Yes, and it's difficult for doctors. They're in a practice where they don't have a day like I had a day. Sure, it cost me a locum but I had the day I could go to the training and I had another pharmacist so I could do the in-store thing. But you look at the GPs and you think they can't spend that time. It's a difficult thing so how do we get them aware and informed? It's probably more difficult for doctors.

Female: They were all sent letters but obviously did not read them.

Facilitator 1: It's just like you're sent a fax however many minutes. They turn up on the fax machine, how many do you read?

Male: You try and read the most important paragraph and junk the rest.

- Facilitator 1: You look at the logo that's on the top first before you decide to read that or not.
- Male: If it was in their position I would probably ignore it as well.
- Female: You need a one page box, little thing that you ticked off or something to say this patient is at risk please follow up or something much more simple.
- Female: That was quite time consuming transferring all of that medical information from our copy to their copy as well and they should have that anyway. We're not doing the [HMR]. We're doing a screening for COPD so if the people are taking medications that the doctors are not aware of or whatever that's actually not what we're trying to tackle.
- Male: Say check the COPD please.
- Female: Yeah, exactly. I think that's great.
- Male: He could do the screening.
- Female: Our [inaudible] patient is at risk of COPD please follow up or something like that.
- Male: It's hard to know. If I were the GP I would probably give a little more weight to something that the pharmacist has sent along that you can see the pharmacist has spent some time doing and actually has some readings on rather than a little piece of paper that says the pharmacist thinks that I should - I would put that in the bin.
- Female: If we had some results. If it was more concise. If you had the results ...
- Male: But it would just be negligent nonetheless.
- Female: Then maybe even if for them there was something like having further screen this patient, log on to the Lung Foundation and register that you have done the next stage, so something for them I guess, is what I'm saying.
- Facilitator 1: So some incentive for them to follow it up.

- Female: Basically rule up an HMR so they get paid and the pharmacist gets paid. Something like that probably would have got up.
- Facilitator 1: Okay, they're good ideas. What about the amount of data you had to record for perhaps the research purposes versus if you are rolling it out and it's going to keep going in the pharmacy. How much of that data will you record for your purposes not for a research project? How much would you cut down?
- Male 3: I don't know where I would make a cut really because like we were saying before, I think it is important what he's got there.
- Male 2: [Inaudible] know the patient particularly where you could start looking at those sorts of - your data capture.
- Female: But [inaudible] that information there, would you?
- Male 3: No, I probably won't. I would probably just have a brief little quick list of the reasons why you can't do the test basically. So it's more probably health promotion more than COPD ... if we got someone who was crook, well, it's COPD screen but ...
- Female: Even those questions that were in our initial questionnaires, they might be the good ones to use on posters or whatever ...
- Male 3: Yeah, I'm going to use the initial one, these are the people most at risk. It's not going to be just anyone. You wouldn't do it if you hadn't been exposed to any environmental chemicals so I'll be using the green page and then I think I would probably get them to, you know, if do answer yes to those questions then they can, in their own time, fill out their own medical history and then come back and see me.
- Male 1: I remember one patient that was taking no regular medications. You will back me up, no word of a lie, and we asked her what her medications were and she said only two things, Sudafed and Ibuprofen. She's a smoker currently and didn't get grade readings so having that little bit of history instantly gave us a great opportunity to give her some counselling about things she's taking. She claimed that she had asthma and we're thinking is it asthma,

is it COPD or whatever and there were only two listings on the medication sheet, the Pseudoephedrine and the Ibuprofen.

So from one point of view some history of their medicines is really important but, on the other hand, a lot of times it was a huge page and didn't give any extra info.

Female 2: I wasn't saying that we shouldn't collect it. What I was saying was that I found it time consuming for us to write that there and then and we've got to take all this over to here now and actually get it to one of the ... and say can you just go and sit and transfer and you knew the ad ... not the ad but the article ... put in and we would be inundated. The phone just ran hot, we did 25 people in a few sittings basically.

Facilitator 1: So patient recruitment wasn't an issue for you. Was it an issue for anyone else trying to recruit patients?

Male 4: It was fairly passive to start with. The green form went on the front counter and from that I got zero response. At that point, okay, fine, I need to something about this and became a bit more aggressive about it which is probably the wrong word but too bad. Proactive is probably a better word.

Male 1: It's recorded now buddy.

Male 4: Exactly. So once I became a bit more aggressive/proactive that's when it all started to fall in place but nobody was particularly interested in looking at the green piece of paper. I had to get involved. I had to make it relevant, personable and something that the patients would be interested in. That's when I started getting patients.

Facilitator 1: Who did you target? Were they just elderly people, people on inhalers, people getting smoking cessation ...

Male 4: Any script that went through with a Ventolin was where I started and that's when it all started to come together.

Male 1: In terms of the research objectives, is that satisfactory because ideally research, you imagine, is done without any bias towards the

people that take part, i.e. the promotion in the newspaper is good from one point of view in that you got everybody and they had no idea really about what it was about. So that gives you a great cross section of everyone. Once you or we select people that we're going to approach we've already skewed the results, haven't we, in terms of research? Is that a problem or not really?

Facilitator 1: It would depend, in a small pilot testing of whether this is actually doable, feasible and you actually want to see whether you do want to target particular patients or whether it's actually better to get the general - I mean, that's the sorts of things we're trying to find out. Is it better to just put ads up or not even ads, in the future does everyone just know if you walk into a pharmacy you get PICO 6 and that tells you whether to go and see a doctor or not.

Female: I thought all the promotion was great in the papers.

Male 1: It worked.

Female 2: We got more feedback from the newsletter because I must admit to start with I thought - because Christmas came and everything and then when we knew we had to get so many patients and I was a bit panicky I wouldn't be able to do all the follow-up so we were pretty well - we put signs up in the pharmacy, we did it in our newsletter and then the girls were pretty well asking anyone that even referred to the sign that they saw if they were interested in doing it. So we pretty well had then within a short period of time, we pretty well then got pretty close to all the ones that we wanted to do. Probably the only limiting thing was that a lot of people wanted to do it then straight away and it was just a time constraint so a few times I had to say to the girls once we had a few look back off a bit until I do these ones and then we'll start again because it just seemed to be, from my point of view, as one person there that's what I found the most difficult, just sitting down and having to stop and start, check a prescription. Someone wanted to see you and then you would be back to that person and that's certainly what I found was the most difficult. Once a customer sees you sitting in the pharmacy with someone else then it's like

you're down there so then there's a lot of other people that will just walk up to our area. I just found that that was my only difficulty that I seemed to initially take so long. Some of them were like 30, 40 minutes I was putting it down and that was not a lie, by the time I got it all and then printed off all the information, their history. I guess for a lot of ours there was a lot of medication history and then going through the complementary things that they were on and then we had a couple that weren't ours so, they had to ring me back because they couldn't remember the strengths of their medication or what they were actually taking.

Facilitator 1: It sounds like appointments might work in the future, if you had appointments.

Female 2: That's why the follow-ups were good because you rang them and then you could make an appointment and people were aware of what was happening. To start with, because I wanted to get the patients, we were pretty well getting them and trying to do it straight away rather than sending them away and risking ...

Facilitator 1: It sounds as if the one-man-band, like if you're just working in the pharmacy on your own, it's pretty hard to ...

Male 2: You couldn't do it.

Facilitator 1: You struggled to do that.

Female: I spent after hours or early mornings.

Female 4: We had a couple of patients with follow-up that came in. They had appointments but we were really too busy dispensing to attend to them so they got a bit huffy and probably pulled out of the project because of that.

Facilitator 1: So you have to make appointments and you have to have another person on.

Female 4: We had times but we still didn't have time to see them. We kept them waiting.

Facilitator 1: So I guess there's the working out what's a priority, like your scripts are your bread and butter so you've sort of got to do them,

- haven't you? But it's trying to work out how to juggle that.
- Male: We did ours slightly different. We weren't too good with the study. I was like too busy and I was more like with the blue there, I didn't have that aggressiveness to go and pick people up. I didn't have time. It's quite busy, one person, but I've got a baby nurse who is there four hours a week and she actually came to represent the pharmacy to do it. I did talk to somebody and say I'd like to do a screening for you but I'll have to put you in Tuesday between these hours.
- Facilitator 1: I think she was the lady that did the training - was that at [Blackhill]?
- Male: Yeah.
- Facilitator 1: Yeah, she did the training with us. Did that work well?
- Male: No because the person who was slack was me because I didn't recruit enough people. But the flyers didn't really do anything.
- Facilitator 1: She worked with a few different pharmacies though, didn't she? Did it work better in one of the other pharmacies?
- Male: She didn't have the PICO 6 in the other pharmacies. I needed to recruit them into her time. There's no way I could have spent time with people. It was just inconceivable to spend any amount of time with one person.
- Female: The actual activity, the screening and the getting them to do the test, it doesn't have to be the pharmacist, I don't think, and yet we have two every day so it wasn't an issue for me. But I could certainly think of - like other staff - I could think of one or two people who I could go and say I want you to come and do this training. They just have to know about COPD. She just needs to know how to do this.
- Facilitator 1: So each of the pharmacies needs to fill in the forms though, like when the patients ...
- Female: I think the pharmacist has to ...

- Male: ... couldn't get someone working in the shop to do it because they just don't have the background in COPD. How ... what COPD is/
- Male: Can I just look at this whole problem not from the pharmacist's perspective but from the patient perspective? If you or one of the patients doing this study, who would you expect to do all that work, one of the shop girls or the pharmacist? I've got to tell you, the patient thinks the pharmacist is going to do it. When you're in the doctor's surgery, who does it all?
- Female: The nurses.
- Male: The nurses do all of the administrative work but the doctor still sits down and stills fills in that thing. I've watched the doctors do it when I've been there and it's all part of getting to know the customer or the patient or whatever. If we were participating in this study as a patient, we would be expecting the pharmacist to do this work.
- Female: I don't know, because I think you can have a situation where their trust and their belief in you is that if you say that Heather's actually going to look after you, for the actual process, not for the diagnosis or - but it wasn't a diagnosis anyway - but just for the physical work, then they're saying I will trust her because she's knows this girl and she believes that this girl can do that and she's over there and she's already doing two or three people at once. I definitely think that would work for us.
- Female 2: Yes and ... name, address and do you smoke, how many cigarettes and ...
- Facilitator 1: For some of the routine questions.
- Female 2: Those sorts of things but if we were going to do it as an ongoing thing then it would be a little bit quicker. You would probably be targeting customers that you knew that were coming in to try and give up smoking or that you were worried and so you would have a lot of that information. It wouldn't be for a study so, as an ongoing thing you wouldn't be collecting as much data so it's only as part of the study and you have to set a minimum of what you

want to do and what information you need and how much of that you would actually use as part of your study. We've done other things and in some of them it was actually the patient that filled in all of that preliminary stuff. They filled in their name and address and their occupation and their phone number. The beginning bit and then the pharmacist took over for the more technical things so when we were coming to the point of what medication they were on and then doing the testing with the breathing, like I wouldn't expect one of the other team members to be getting them to breathe or to be asking them about the medication because ...

Facilitator 1: That's the trained person ...

Female 2: That's right, they've got no idea and just the issue of spelling of some of the medications can be hard for another staff member if they're not used to that. I think in that case the pharmacist can take over but some of the preliminary stuff, in a lot of other studies, the patient just sits down with the clipboard and fills that out and then it's part of the study that it's understood that for five minutes they do that and then the pharmacist comes to them once that's done.

Female 4: I would tend to think that a lot of the patients we did were elderly and required reassurance and required the patient-pharmacist relationship. I wouldn't think another person would be suitable at all.

Facilitator 1: So you're certainly looking at an additional staff member, maybe a graduate, maybe a pharmacist or maybe a trained nurse but someone who is a health care professional that's trained. It sounds like that's the sort of vibe I've sort of been getting.

Male 1: It's a real case-by-case thing. I've got two long-term employees. I've got a bit of a captive audience there. All my customers are long, long-term customers. So many of them would have been happy with one or two of my long-term trusted staff members to do some parts of this but it would be up to me in my pharmacy knowing my staff and knowing my customers as to which bits of

this I would be happy having them do and which bits I know those patients would be happy having my employees do.

Facilitator 1: So it's about trust.

Male 1: So I'm pretty sure we could get some of those bits done by the non pharmacist but it would be a case of you and me deciding every time which bits we would be happy with having done.

Female: We're the same, pretty much the same people. We've got long term staff that the customers would be quite comfortable, the ones that we currently have. It's really the ones that we were getting were our customers.

Male 1: To be honest, the training day I really should have had an employee with me right the way through and not that they would be doing most of this but therefore they could do some bits and then I know that a couple of my employees could quite happily, once I had shown them and been through it once, say, do the actual readings with patients no problem and certainly take information in the beginning.

My 20 year dispensary system could take a history adequately and so on but that's for every pharmacist to decide what they should be doing.

Facilitator 1: Maybe there's an important point there that even if they're not going to be involved it's important for them to understand what's involved in the process so that they know what you're doing whilst they're stuck in the dispensary trying to fill in for you while you're with that patient, they at least know what you're doing and not resenting why ... dispensing the scripts.

Male 1: But then we come to your situation, to go to the training day, we're not now just asking you, we're asking an employee as well, so the two of you to be there for the training. That seems initially even harder.

Male 2: I didn't even go to the training. There were things there that I really needed to be - I don't know what training is like but I feel as though I didn't need to be there for me to conduct this study. It just

makes sense if you go by this appropriately but the idea behind it makes sense if they had questions.

Male 1: The training day is good.

Female 3: I found the training day good from the point of view of all the information you have to trawl through.

Facilitator 1: I guess we should get to some of the business case of this because you've touched on it. You have to take a whole day off to do the training and pay for a locum whilst that was happening or whatever. So the training - put that aside - that's a once off. Once you trained you're accredited, you tick your credentials now to provide service. Is there any business case for it? Do you need to be paid to do it? What if you're not paid to do it, does it pay for itself because the customers will come back? What do you think about that?

Female: What's dawned on me is that I am just amazed that one of these [unclear] companies, whether it's a prescription only product or an [OTC] haven't actually got onto it as a tool.

Female: But I thought [Terry White] did. I think Terry White has done it.

Female: To sell it to pharmacies as part of encouraging smoking cessation. So whether it's a referral for Champix or whether it's patches or whatever, I'm amazed. It seems to be an amazing opportunity there for some companies to push it into pharmacy. As far as that for us, I mean, it's there now. I've just made a note to, certainly, get my graduate to get involved with the smoking cessation side of the staff to go, run with it and using it as a tool to encourage smoking cessation. For us, at the moment, in most cases - I don't know if everyone would agree, but that would be for referral for Champix because of the success of it.

Facilitator 1: So the business case then is the mark up on the Champix or whatever and goodwill or whatever.

Female 3: I think you need to be paid for it because of the time involved with it.

Male 1: It's really simple. The difference between the patients that came that I had never seen before that came due to the response from the newspaper who never came back as long-term customers anyway, well that's cut and dry, and the best responses I had were with my already regular patients and it didn't make any difference because they're still all coming all the time. So I don't know that it made a huge difference either way. It really is just a case of how much time are we spending and you've got to be remunerated for something.

We're all sitting here having done it so it's not that we're the hard [heads] and so on that are paid for every second. We've given our time and we've done it but across the board I think it would have to be properly remunerated for them to be looking at it.

Female: [Inaudible] drug companies, that's what I ...

Female: ... something like Nicorette or Champix, that sort of thing.

Female: Might just give you it.

Female 3: ... different so there's something that's a very easily measurable tool, like to measure people's blood pressure, their sugar levels, we can measure ... and at least be able to screen those that we then can refer to the doctors by showing them something. When you can show them something that's so easily measured and it's not time consuming once you actually do the test. It's just the explaining and everything but, from our point of view, if a drug company would support it then in a smaller pharmacy it does then make it easier for us to then be able to devote the time.

If a company supporting it can even look at having a graduate in for a day or informing a nurse for a day to be able to assist you in doing something like that then it does make it difficult if you're trying to do it on an organised scale. We can do it but it's just one of those things that when you've got the time and you've got the person there it's very easy. If you've got someone that's a little bit undecided as to whether they really want to give up smoking ...

Male 1: Just, like, same question, as a GP who's experienced in using the

PICO meter knows what you're talking about [unclear]. If they took the readings of the patient what difference would it initially make in terms of their diagnosis, their PD, having had all that other information or not having had it? If they took readings, are most of those are going to be clear as to whether they need to follow up on that or aren't they? Even if they had no look at the patient's medical history, smoking history, exposure to pollutants, whatever else. You know what I'm getting at, how much would you lose by having just a straight out ...

Facilitator 1: Just the PICO reading and no ...

Male 2: Question mark readings?

Male 1: Yeah, getting back to that point, we cut 80, 90 per cent of the time out and if you could still get a GP to seriously look at that, that you've sampled, would we lose 90 per cent of the benefit to patients in the community or not? Do you know what I'm getting at?

Facilitator 1: Yeah.

Male 1: Do you still get nearly all the way there?

Female: I don't know. Simone, are you listening to that?

Facilitator 2: Yes, I just try not to [inaudible]. Yes, you're right ... also in order for us to meet our extra requirements for the project ... the process you have to go through so the paperwork was quite excessive and the information was quite excessive because that - not because of what we initially put in the design of what the project was. At the ... the doctor would pretty much only need the green questionnaire and the PICO reading and that would be adequate information.

Male 1: Yeah, we gathered that. That's fair enough but I'm thinking if we do it ongoing for patients indefinitely we're not really remiss in getting the bare bones of a few readings having something prepared to send them with to the doctor or communicate with the doctor. We're still going to get 90 per cent of the results.

Facilitator 1: Probably.

- Male 1: Just from our point of view now.
- Facilitator 1: Yeah, and then the doctor will follow it up probably ... more screening and spirometries.
- Female: What do you think would happen in that instant if you went in with that result, spirometry, in those circumstances?
- Facilitator 2: It really depends. Spirometry is the only measurement that would give an accurate diagnosis. However, a lot of GPs don't offer spirometries, (a) because it's time consuming and it takes at least 20 to 30 minutes, (b) they don't have a spirometer and a lot of GPs will actually use the PICO device even though it's not technically diagnostic, to come up with the diagnosis, so it varies.
- There are a lot of GPs that do spirometry in Newcastle and the Hunter, you do have two respiratory [labs] ... I would say, look, if you do get GPs whether or not they use spirometry or not, are being sent through that information.
- Facilitator 1: If you took someone's blood sugar level - I'm trying to relate it to something that perhaps we've got better, you know, so if you took a random glucose level and you sent that result off to the doctor, the doctor is going to do another one and then they're going to do an HBO1C, so it might be the same. They'll do another PICO and then if they're still not sure they'll refer for spirometry. That would be my - or then they could diagnose it before they do that.
- Female: Not all of them do that.
- Female: Back to the remuneration thing, when we were talking before about if we improved someone's compliance we get \$25 at the end of three months. Maybe there could be something like that where if we screen so many people and X people end up being followed up for COPD then maybe you get remunerated on that or something, because then that's relying on the doctor again. Or do we just get remunerated with everyone we screen but then there could be a lot of wastage there.
- Facilitator 1: Yeah, what about you? I mean, you're going to continue it, Brian.

- Male 2: About remuneration?
- Facilitator 1: Yeah, business case-wise, is it going to actually cost you money? You're saying it's a new pharmacy so you're obviously thinking there are benefits to this.
- Male 2: I think there's benefits but I'm still enjoying doing it. That is really part of it.
- Facilitator 1: That's your motivation.
- Male 2: The guy who I tested the other day, he was a chicken farmer and I just cut to the chase. I just said, if you've got time and just give us a reading. He'd already spent ages in the chemist because - I can't remember, there was some other problem ... name on his prescription, he had to go back to the doctor and get another one. So anyway he's already spent a lot of time so I said let's just cut to the chase and do you want to do a reading now? Didn't bother doing any of the questionnaires or anything. I knew he'd been exposed to pollutants and we just did a reading, three of them, straight up. It was done within a few minutes. For this weekend, the quick list, I was thinking of writing to people was just all the contraindications why you can't do the test. If you've had coffee this morning, if you just had a [unclear] or whatever, took [Butylene] this morning and also they eye surgery thing and just go, if you had all these things then you can't do the test. If you haven't, well, let's do it.
- That does make it pretty quick and I would take it further if they had problems, so I don't see how that wouldn't work. I can't think of a reason why.
- Facilitator 1: Other than the time that it takes even if it only takes a few seconds, that's still something ...
- Male 2: I think people value the time that you spend with them when you do talk about the medications. I'm not trying to take away the value of that but I think we want to just do a test and people want to see a result then I'm happy to do that. I wouldn't say it forever.

Female 4: It doesn't really take that long, when you're just doing it and just to get that quick reading and that quick screening. The ones that I've done, it hasn't taken any time at all really. I think the only time it was put into the first lot was really recruiting and getting the people that were interested in doing it and then getting them back for the follow up but just to do ones in the pharmacy even if it's a single pharmacist you're not spending 20 minutes with them doing all the other things before you actually do their readings. You're really doing the readings straight away and then you can sit down, if you need to, and discuss why they're getting the red or the yellow and if they're green they're fine. But before we were doing a lot of preliminary things and then we were doing the testing and then there would be green in the locator so there was no need to do any follow up. But if we were doing it as an ongoing thing you would be doing the test first.

Facilitator 1: You would do it the other way around.

Female 4: You're sitting down and discussing the result of the testing those that you needed to then further discuss things with and so that would make it much faster in my mind because I would only be sitting and talking to those who would benefit from ...

Facilitator 1: Yes, so you're doing something and then maybe you get paid for those ones?

Female 4: There are lots that we just screen that were green and there really wasn't a lot more other than the fact that they were interested because they did have coughs and we sent them off even though they were green because of the reason that they did have a cough. I guess it was that opportunity for them to talk to me about something that was wrong with them and it wasn't to do with the lung reading but to do with something else. So a few cases we picked up people who the medication was causing the cough and so that was valuable to them from that point of view. If I was only screening the others you would be doing their readings first.

Facilitator 1: Following up on that, the value for patients, what do you think, just up at this end of the table? I don't want to leave you out. How do

you think that the program helped your relationship with patients or what value do you think the actual patients got out of it?

Female 1: Most of the patients that participated were my regular patients. I didn't get a lot of new patients normally and so I think a lot of them just appreciate the time that I put in and give them a general feedback so they're quite happy about that. One patient actually did take up with the doctor and the doctor put him on [unclear].

Facilitator 1: Excellent.

Female 1: So for him he had this problem - it was a problem for a long time and ...

Facilitator 1: If you hadn't done anything about it ...

Female 1: ... and I've been telling him that he should quit smoking but he just keeps going ... and he finally stopped after the test ... go to a doctor.

Facilitator 1: Wow, that couldn't be better.

Female 1: That was one good thing that come out of it. For something that he knows how ...

Facilitator 1: This was the trigger, that's right, so it was the motivating ...

Female 1: Because I've been begging him for the last six, eight months, you really need to do something because he kept taking the chesty [mucus]. He kept coming and buying bottles every week. It was good business but ...

Facilitator 1: So now you've lost that sale and now you're getting the [Foresa] script which is better.

Female 1: And the Champix as well.

Facilitator 1: Okay, there you go, so you had a win-win situation. We haven't really followed any of the questions in order but I think so many of the questions have sort of been answered by having this discussion which is good. In general, just to sort of finish off, what do you think the outcomes really are. If this was sustained in the future in a perfect world, you were paid for every patient that had

yellow or red so you sat down with them but the greens could walk out the door and you had a locum pharmacist to help you out on times where appointments were made. Obviously you would catch some people with COPD but, overall, what do you think the benefits are?

Female 4: To stop people smoking and to get them on effective medication.

Facilitator 1: So patient benefits, absolutely.

Female: It just ... the most accessible health professional, it's good for us whether it be through business or through non-financial reasons. It's good for us as professionals and it's good for the general public because we are so accessible. So it's ... for us to increase the offer.

Facilitator 1: It's good for pharmacists, it's good for patients.

Female: It's good for the community because it is so accessible. It's good for people who need Champix and those sorts of things.

Facilitator 1: Good for the drug companies.

Male 2: Awareness is the thing. A lot of people really don't have a clue what it is, I find, so a bit of awareness is a good thing.

Female 3: I didn't realise either that it was such a simple thing to do because I think if I had the concept before I would have thought that it involved more. But it is a very simple test to do just to be able to at least filter out those that need then further referral. I guess the only thing that I didn't understand, there was one that we had constantly red and the yellow and the lab reading still seemed to say that her lung function wasn't at the optimal but it just said normal lung physiology or something. So she didn't really get any answer as to what's the problem, like she wasn't a smoker but she had had this persistent cough. The doctor just said to her, everything was normal and he did all the follow ups, she was still reading the yellow.

She said to me, why is it happening, and that's when I didn't really have an answer to say to her. They were saying everything's

normal, I guess the only reinforcement was that that's good, there isn't any lung disease there yet the values that the lab sent back - because the doctor filled in the lab results - were consistent with ours that showed that it was sub-optimal and yet they just put normal lung physiology, I think they wrote at the side of it.

Facilitator 1: I guess that's one that you want to just keep following up.

Female 3: She brought her lung [unclear] for me to have a look at. I'm not much for reading x-rays except I knew that the first lot she brought in were actually of her head. She brought in the sinus x-rays the first time and then the lung ones, I looked at them but I'm not an expert at reading x-rays but she seemed to be happy that I looked at them. I didn't have an answer for her and yet neither did the doctor and I think that was the only thing that was a bit confusing.

Facilitator 1: I guess you're always going to get those patients that never fit the textbook definition so we need to keep monitoring.

Female 3: It would have been nice to have some sort of answer, you know, you've got [unclear] lungs or something like that. I guess I didn't understand enough and the doctor certainly hadn't said any more so the doctor ...

Facilitator 1: Didn't understand it either.

Male 2: There's no point in we providing diagnostic services. We're a screening service not a diagnostic service.

Female 3: Yes, exactly, but then the doctor didn't give an answer so, I guess, that she came back to me and I could only say to her, I guess, the reinforcing bit and the positive thing is there was no lung disease.

Male 2: You always get funny cases.

Facilitator 1: What about the doctors, do they get any benefit out of it, do you think? Just to finish up on because we've talked about the community, the customer or the patient, the pharmacy.

Female 4: Well, probably the patients that they hadn't thought to test were then brought to their attention so they think, gee I didn't realise that, I better do something about it sort of thing.

Female 3: Sometimes they're things that patients have not thought was important enough to mention to the doctor, the fact that they were a little bit more breathless. The ones that were just putting it down to I'm just getting older and that's what you expect and so in that case I think being able to talk to their doctor as to why they were a little bit more breathless and to be looking at other things. In some cases with one of ours it was her cardiac medication, she just stopped taking it because she didn't understand what the value of it was and that was the reason her breathlessness was because of her blood pressure. It was only when we were actually doing all the things and checking and she hadn't been taking it and we had not realised and the doctor had still been scripting it but she decided not to take it because she didn't really understand what it was doing anyway.

I guess in that case, it gives the doctors a chance when they're getting these readings to get ...

Facilitator 1: To get an update.

Female 3: Yeah, that's right ... things for patients. So the doctors that we got the feedback from were quite okay about it. It's just that we found it was better to actually give it to the patient. A few times we thought perhaps if we send it to the doctor first and then got something to read before the patient actually comes in, but that wasn't really working because I think they file too much stuff away.

Male 1: I was going to ask that before because I mailed all of mine so maybe that wasn't the best approach.

Female 4: All the ones we got back were ones where people talked to the doctors themselves.

Facilitator 1: That's a very important point, I think, make the patient the messenger.

Female 1: ... where the pharmacist sent off the information regarding the DMAS and she sent it to the doctor and I think she might have faxed it and the doctor just sent it back and just said, give it to the patient. You cannot imagine the paperwork that comes across my

desk every day, I won't even look at it unless it comes with the patient. Of course, in that way they're getting a consultation fee. I think it goes back to that whole thing where like we're screening, you just get situations where there's more than one doctor in a practice. So an individual, for whatever reason, might change from one doctor to another, so the new doctor will know the current history but not the long-term history. So the person may have actually given up smoking 30 years ago and therefore we're actually reminding them, having screened this person, that this is the actually full history. It's just a prompt because if they didn't know that they might not only think to do any lung function test for a non asthmatic person.

Female 2: They mightn't even be aware that they were smoking 30 years ago.

Female 1: Yeah, that's what I'm saying.

Female 3: We had one that didn't want to do it because her doctor didn't know that she did smoke and yet we could smell it on her. We had known that she was a smoker and we thought how this doctor could not possibly know also but that was one that declined because she was going to the doctor and she didn't want the doctor to know she smoked.

Female 1: Does the husband know?

Female 3: Yeah, honestly there is no one that could have been in the same room with her, but the doctor had obviously never brought it up which she should have done.

Male 1: Didn't want to upset her.

Facilitator 1: I see it's quarter to nine, I'm not sure if people are flagging or not but I think we've certainly got some fantastic feedback about the program and the good, the bad, the ugly, I hope. Just before, I mean, if anyone's got something else burning that they want to say, say it now, put it on that tape. We can use your quotes if there's something else someone wants to say and I also want to just double check with Phoebe or Simone if there's anything else

that was not covered.

Facilitator 3: No, just to check was there any other barriers or things that were difficult that we haven't brought up or if there was anything you thought worked well ...

Female 2: It was interesting for me, and you might remember is when the study first launched and you did the article in the paper and I was inundated, the people that were given the initial in-service was far insufficient ... I think I might have had six sets of copies maybe at the most.

Facilitator 1: So you didn't have enough?

Female 2: There wasn't enough papers.

Female 1: I had about 20 ...

Female 2: Did you? I wonder what happened and then I was always chasing ...

Female 3: Do we get something back? Do you collate all the information and send us some results, the number we screened between all of us? So, has it actually had some positive outcome?

Facilitator 3: Yeah. From the preliminary analysis there were four cases of COPD diagnosed but that was just the ones we know about from the 20-ish reports we got back from the GPs. So they're the ones we definitely know.

Female 3: How many people were screened all up?

Facilitator 3: One hundred and twenty. It doesn't mean that none of those other people were at risk or even that they didn't get diagnosed but we didn't find out ... the four definite cases.

Facilitator 1: So from the feedback from the doctor and four ...

Female: Had COPD.

Facilitator 1: ... COPD from the feedback that you've got, that's fantastic.

Female 3: So did it achieve what you were hoping for? Did you find along the way that there was things that you were happy with or that you

would have done differently?

Facilitator 3: Yes. I've kept quiet because I don't want to bias what you're saying but what you've said doesn't surprise me, but we need to hear it from you. Most of you have said these things informally to me over the last six months and some of these things you couldn't avoid anyway because there is a lot of extra data that we have to quote because it's a research project or there's stuff you need to do to keep ethics happy and all those sorts of things. When you do the pilot projects for the first time it takes longer. All the feedback you've given us is really important for us having something that we can actually have some quotes and things that we can put in for recommendations and to make it a lot more streamlined in the future.

Facilitator 2: ... to I guess that we have to put together a report that we submit to the Pharmacy Guild and then we can make recommendations as to whether or not we think this is a project that pharmacists feel that they are capable of doing, like to do and is worthwhile, if it benefits the community.

Facilitator 1: So the Pharmacy Guild are the owners, if you like, of the report but all of this project was funded by the government and ...

Facilitator 2: The Department of Health and Ageing.

Facilitator 1: Yeah, the Department of Health and Ageing so the Guild, I guess, will argue then, you know, this has absolutely stunning results where you diagnosed every patient with COPD and it only cost \$2 and you know, if you have that then, of course, the Pharmacy Guild would say to the Government, oh my God, you have to fund this service, and they still might. So the results that come through may be, if this is a promising pilot project and they've opened this up for a massive big trial with thousands of people enrolled and it showed that it increased the diagnosis of COPD and the treatment and the hospitalisations and whatever outcomes then the Government would say this is such a cheap way for us to actually get people screened within the community pharmacy. For every screening there's a fee or whatever, so that's where it sits, this is

the pilot project, there's potential that the Guild could say we definitely need to have a big tender project now that DMAS is being rolled out or PAMs or any of those big projects.

Facilitator 2: Can I just make a comment about the point that Phoebe mentioned there were four case findings ... and the 20 forms that were sent back, so if we look at that effectively that's closer to 20 per cent and in the general population COPD ... whilst it may look as though there's been a lot of cases ... it's actually quite significant in terms of COPD prevalence.

Facilitator 3: Yeah, and I think the results are roughly the same as the study in Spain that looked at COPD. It was a very similar sort of study except the pharmacists were using full spirometry in the pharmacy and we got some audit results in the PICO ...

Facilitator 2: That takes nearly 30 minutes to do the test.

Facilitator 1: The cost, you can imagine of spirometry machines versus the PICO ...

Facilitator 2: Could I just ask one question? Can I just ask to get a general feel as to whether or not the people involved in it, they get [unclear] into something within their capabilities as pharmacists because it is a screening role and I guess they're really [unclear]. So there's two parts to this question, and whether or not they keep doing it, you know, delivering this type of service?

Male 1: I went from abject fear before I did the first one, in all the time that had passed since the training day, to Phoebe having got me started and had done one or two and it was fantastic. It was, as you say, really actually enjoyable doing it believe it or not. So yes it was worthwhile and yes I really actually enjoyed it when I was doing it.

Male: Yeah, I agree, pretty much similar sentiments. I actually had to read over the notes between the training and the thing and I was even practising on my family who came to visit but I can't use the results unfortunately. My sister smoked for 20 years so I've had a bit of fun with the device at home as well.

- Female: I thought it was a bit of fun.
- Female 3: I enjoyed doing it as well, that's why we took part in it. I guess from the positive things from the pharmacy point of view, but I learned a lot myself from it. I could see where it would have a big application to pharmacists to use.
- Male: I [unclear] parts of the questions being presented. My reasons are many and varied but the thing I got most out of this is that this is a glimpse of the future. I'm a bit tired of the cost cutting model that we seem to be employing at the moment in the industry. If you ask me, the industry is going to have to come to terms with it and try and give value for money and this is one way it can do that, is development of professional services and this is what we've got to do in the future if we're going to survive. This cost cutting model that we seem to be employing at the moment is going absolutely nowhere except to destruction.
- So, as soon as we can get away from that and head further down this pathway, I think the better for the industry.
- Male 1: Don't forget that the expression you use, value for money, 50 per cent of it's money, so it's still a serious factor to consider (a) the remuneration or (b) the costs to you by providing it. So it's all very altruistic that half of value for money is, the other half's money, so don't forget that.
- Female: My answer is yes and yes to both parts of your question, Simone.
- Facilitator 1: I don't want to talk for much longer but if you marked up more of your smoking cessation products, so if you added a fee to that, would it pay for the service? If you just added ...
- Male 1: No because the [unclear] is in the professional ...
- Facilitator 1: Yeah, will bloody undercut it down the road, yeah.
- Female 3: I just think if you've done something more, like even taking people's blood pressure and getting them coming back and monitoring that, it's just an added service that we can offer. I just found as a tool I was surprised how quickly you could do a reading

and show people a result that then you could then explain to them, if they did this or that then they could be breathing in the green section and for people to be motivated by that. So I just think that for an ongoing tool it was ...

Male: It's more professionally rewarding. I'm sick of checking scripts.

Female: People love it when the pharmacist comes down and does something ...

Male: In 25 years I've heard a lot of projects or whatever saying this will add to goodwill. Seriously this one did. This is probably the only one in 25 years that I've seen actually add to the goodwill.

Female: Because it was different.

Male: Rather than just say it does. Customers, patients love it.

Facilitator 1: Because it's something new but they're doing something and they can see a colour.

Male: And it's amazing how much you learn about patients as well.

Male 1: As soon as they get their breath back and they stop seeing stars they look like they've really enjoyed it.

Facilitator 2: Thank you, that's the end of the focus group pilot.

Facilitator 1: Yes, unless people have got anything else they want to say?

Male 1: Something really important. In the movie that Steve Martin was in called The Man With Two Brains, you know when he kept his ex-wife's brain, it's just like this. He used to sit it on the table and it had a voice, it sounded just like that.

Male: What was the name of it?

Male 1: The Man With Two Brains.

Facilitator 2: I just wanted to thank so very much all the pharmacists that have participated in the project and for taking the time for coming in and giving their feedback and I just can't thank you enough. All the pharmacists out there I don't think ... you know, that pharmacies evolve in the future and I'd really like to thank you all so very much

... so thank you so much.

Male: No worries, thank you.

Female: Thanks Simone.

Female: Can I just thank Phoebe for your very passive but continual encouragement and just your understanding of our situation because you could have got very frustrated with us, especially me I know ... so thanks you were perfect for the role and thank you all as well, very much.

Facilitator 2: I would like to thank Phoebe too because without her we wouldn't have got this project off the ground and we do owe a lot to her and also I'd like to thank Rebecca ... so thank you Bec.

Female: I didn't do anything. They all talked.

Facilitator 2: Okay, so I'm going to leave you, I think, on that note.

Female: Thanks Simone.

Facilitator 2: I hope to see you all again in the near future and Phoebe will, I guess, be in contact or I'll be in contact and send you a copy of the report ...

Female: Either the report or a summary.

Facilitator 2: I'm going to present this project at [PAC] so if anyone's going to PAC I'll see you there.

Female: Thanks Simone.

### **END OF TRANSCRIPT**

## COPD Consumer Awareness Questionnaire (Consumers)

### COPD Pharmacy Screening Project

We would like to ask you a few questions about something called COPD, which stands for Chronic Obstructive Pulmonary Disease. This will only take a couple of minutes and your feedback will help us to determine the feasibility of running a COPD screening service within pharmacies in the future.

This project is being run by the Australian Lung Foundation in collaboration with The University of Sydney. The project is funded by the Pharmacy Guild of Australia under the Fourth Community Pharmacy Agreement.

Your responses will remain anonymous. Participation is entirely voluntary and you can choose not to participate at any time without any consequences.

#### Section 1: Demographics

What is your age? \_\_\_\_\_ years

Gender ☐ Male ☐ Female

Cultural background:

<input type="checkbox"/> European	<input type="checkbox"/> African
<input type="checkbox"/> Caucasian (Australian)	<input type="checkbox"/> Indigenous & Torres Strait Islander
<input type="checkbox"/> Eurasian	<input type="checkbox"/> Other (Please specify)
<input type="checkbox"/> Asian	

Occupation (please specify): \_\_\_\_\_

Current employment status:

<input type="checkbox"/> In full-time employment	<input type="checkbox"/> Student
<input type="checkbox"/> In part-time / casual employment	<input type="checkbox"/> Retired
<input type="checkbox"/> Self-employed	<input type="checkbox"/> Other (Please specify)
<input type="checkbox"/> Not currently employed	

**Section 2: Post-awareness of COPD**

- Which of the following symptoms, if any, do you personally experience on a regular basis?  
(Record answers in box below.)
- And, have you personally **seen** or **not** seen a doctor in the last 12 months, in relation to each of the following? (Record answers in box below.)

		Experience	Seen doctor
a.	Coughing several times on <b>most</b> days	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Don't know
b.	Bringing up phlegm or mucus on <b>most</b> days	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Don't know
c.	In general, getting out of breath <b>more easily</b> than <b>other</b> people your age	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Don't know
	None / don't know	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Don't know

- There is a disease called Chronic Obstructive Pulmonary Disease, also known as C.O.P.D. This is a disease affecting the lungs. Have you **heard** or **not** heard of Chronic Obstructive Pulmonary Disease before today?

☐ Yes / I had heard of  
COPD

☐ No / I had not heard of  
COPD

☐ Don't know / Not sure

- And now thinking about smoking cigarettes. Which **one** of the following **best** describes you personally? **READ OUT A-C**

<b>A</b>	<b>YOU CURRENTLY SMOKE <u>REGULARLY</u> OR USED TO SMOKE REGULARLY</b>	
	Smoked 20 or more cigarettes a day for at least 15 years	<b>1</b>
	Smoked 10 or more cigarettes a day for at least 30 years	<b>2</b>
	None / don't know	<b>3</b>
<b>B</b>	<b>YOU'VE <u>NEVER</u> SMOKED REGULARLY, BUT <u>CURRENTLY</u> SMOKE <u>OCCASIONALLY</u></b>	<b>4</b>
<b>C</b>	<b>YOU HAVE <u>NEVER</u> SMOKED REGULARLY <u>OR</u> OCCASIONALLY</b>	<b>5</b>
	<b>DON'T KNOW</b>	<b>5</b>

**IF ANSWERED "A" (YOU CURRENTLY OR USED TO SMOKE REGULARLY)**

Which **one** of the following **best** describes you personally? **READ OUT 1-5**

YOU SMOKE DAILY	1
YOU SMOKE OCCASIONALLY	2
YOU DON'T SMOKE NOW BUT YOU USED TO	3
YOU'VE TRIED IT A FEW TIMES BUT NEVER SMOKED REGULARLY	4
YOU HAVE NEVER SMOKED AT ALL	5
NONE / DON'T KNOW / REFUSED	6

THANK YOU FOR PARTICIPATING.



## INTERVIEW PROTOCOL: GENERAL PRACTITIONERS

### COPD Pharmacy Screening Project

Thank you for participating in the COPD Pharmacy Screening Project recently. We would like to ask you a few questions about your experience with the program. Your feedback will help us to determine how effective this new service is and whether it would be helpful to continue to offer the service through community pharmacy in the future, in collaboration with GPs.

Your response to this interview will remain confidential. Data will be available to the research staff for analysis and reporting to the Pharmacy Guild of Australia that funded the project under the Fourth Community Pharmacy Agreement. Data may also be reported at relevant conferences and in academic journals. You will not be able to be identified from any of your responses. Participation is entirely voluntary and you can choose not to participate in this interview at any time without any consequences.

The interview will take approximately 5 to 10 minutes to complete.

#### Section 1: Demographics

What is your age?

years

Gender

☐ Male

☐ Female

Cultural background:

☐ European

☐ African

☐ Caucasian (Australian)

☐ Indigenous & Torres Strait  
Islander

☐ Eurasian

☐ Other (*Please specify*)

☐ Asian

## Section 2: GP satisfaction

1. How would you rate your overall level of satisfaction with the program?

<i>Very dissatisfied</i>	<i>Dissatisfied</i>	<i>Neither satisfied nor dissatisfied</i>	<i>Satisfied</i>	<i>Very Satisfied</i>
1	2	3	4	5

2. Did you find the service was valuable to you and your patients, with respect to?

A	In terms of identifying patients at risk	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
B	Providing patients with information (related to their condition/medication(s))	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure
C	Supporting patients	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unsure

3. Do you feel that your collaboration with the referring pharmacist(s) was effective?

☐ Yes    ☐ No    ☐ Unsure

A	Positive aspects	
B	Negative aspects	

4. Do you think that participating in the study influenced your relationship(s) with your patient(s) in any way?

☐ Yes    ☐ No    ☐ Unsure

A	Positive aspects	
B	Negative aspects	

5. How strongly would you agree with the following statement: "The program was relatively easy to administer/participate in?"

<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
1	2	3	4	5

A	Facilitators	
B	Barriers	

[Prompts: Resourcing – time, staff, other resources]

6. Would you recommend this program to your patients?

☐ Yes ☐ No ☐ Unsure

Why / why not?

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7. Would you recommend this program to your colleagues?

☐ Yes ☐ No ☐ Unsure

Why / why not?

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8. Do you think that this service can be sustained in the future?

☐ Yes ☐ No ☐ Unsure

Why / why not?

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9. What suggestions would you make for improving the service?

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10. Would you like to make any final comments about the service?

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**SECTION X -** ASK RESPONDENTS AGED 45+ YEARS ONLY IE CODE 07-11 IN Q1 ON FRONT PAGE. OTHERS GO TO NEXT SECTION

X1 Thinking now about your health. Which of the following symptoms, if any, do you personally experience on a regular basis? **READ OUT 1-3. RECORD BELOW UNDER "EXPERIENCE"**

**ASK IF EXPERIENCE A-C IN X1 IE CODE 1-3 IN X1. CODE 4 GO TO X3**

X2 And, have you personally **seen** or **not seen** a doctor in the last 12 months, in relation to each of the following? Firstly, in relation to... **READ OUT AND ROTATE A-C EXPERIENCE IN X1. RECORD BELOW UNDER "DOCTOR"**

	<u>--X1--</u> <u>EXPERIENCE</u>	<u>-----X2-----</u>		
		<u>YES /</u> <u>HAVE</u> <u>SEEN</u> <u>DOCTOR</u>	<u>NO /</u> <u>HAVE</u> <u>NOT SEEN</u> <u>DOCTOR</u>	<u>DON'T</u> <u>KNOW</u>
	<u>MR</u>			
A) COUGHING SEVERAL TIMES ON <b>MOST DAYS</b> .....	1	1	2	3
B) BRINGING UP PHLEGM ( <b>PRON: FLEM</b> ) OR MUCUS ON <b>MOST DAYS</b> .....	2	1	2	3
C) IN GENERAL, GETTING OUT OF BREATH <b>MORE EASILY THAN</b> <b>OTHER PEOPLE YOUR AGE</b> .....	3	1	2	3
NONE / DON'T KNOW.....	4	# X3	-	-

**ASK ALL AGED 45+ ONLY IE CODE 07-11 IN Q1 ON FRONT PAGE**

X3 Thinking now about something different. There is a disease called Chronic Obstructive Pulmonary (**PRON: PUHL-MON-AIRY**) Disease, also known as C.O.P.D. This is a disease affecting the lungs. Have you **heard** or **not heard** of Chronic Obstructive Pulmonary Disease before today?

YES / HEARD.....1  
NO / NOT HEARD.....2  
DON'T KNOW .....3

X4 And now thinking about smoking cigarettes. Which **one** of the following **best** describes you personally? **READ OUT A-C**

IF YOU CURRENTLY OR USED TO SMOKE REGULARLY  
And have you...? **READ OUT 1-2**

SR  
A) **YOU CURRENTLY SMOKE REGULARLY**  
**OR USED TO SMOKE REGULARLY**

MR  
SMOKED **20** OR MORE CIGARETTES  
A DAY FOR AT LEAST **15** YEARS.....1  
SMOKED **10** OR MORE CIGARETTES  
A DAY FOR AT LEAST **30** YEARS.....2  
NONE / DON'T KNOW .....3

B) **YOU'VE NEVER**  
**SMOKED REGULARLY, BUT**  
**CURRENTLY SMOKE OCCASIONALLY**.....4

C) **YOU HAVE NEVER SMOKED**  
**REGULARLY OR OCCASIONALLY**.....5  
DON'T KNOW.....5

**or**

X4 And now thinking about smoking cigarettes. Which **one** of the following **best** describes you personally? **READ OUT 1-5**

SR  
YOU SMOKE DAILY.....1  
YOU SMOKE OCCASIONALLY .....2  
YOU DON'T SMOKE NOW BUT YOU USED TO...3  
YOU'VE TRIED IT A FEW TIMES,  
BUT NEVER SMOKED REGULARLY .....4  
OR, YOU HAVE NEVER SMOKED AT ALL .....5  
NONE / DON'T KNOW / REFUSED .....6

## Appendix 25

**Table A1. Pharmacist characteristics\***

Pharmacist characteristics	N	%
Gender		
- Male	9	60.0
- Female	6	40.0
Proprietor		
- Proprietor	9	60.0
- Employee	6	40.0
Employment status (at participating pharmacy)		
Full-time	9	60.0
Part-time / casual	6	40.0

\*Demographic characteristics of the pharmacists (and pharmacy nurse) who conducted screening.

**Table A2. Pharmacy Characteristics**

Pharmacy characteristics	N	%
Type of pharmacy		
- Independent	9	75
- Banner	3	25
Position		
- Community strip	6	50
- Shopping centre	6	50
Private /semi- private area for conducting patient interviews		
- No	2	16.7
- Yes	10	83.3

**Table A3 –patient characteristics by baseline Piko result**

Patient characteristics	Low risk N=66	Medium risk N=29	High risk N=17	Total N=112
Employment status				
- Full-time	6 (5.35)	3 (2.68)		9 (8.04)
- Part-time / casual	7 (6.25)	2 (1.79)		9 (8.04)
- Self-employed	1 (0.89)	1 (0.89)		2 (1.79)
- Not currently employed	5 (4.46)	2 (1.79)	1 (0.89)	8 (7.14)
Student				
- retired	28 (25)	14 (12.5)	11(9.82)	53(47.32)
- Other		1 (0.89)		1 (0.89)
Cultural background				
- Caucasian (White Australian)	29 (25.89)	15 (13.39)	6 (5.35)	50 (44.64)
- ATSI				28 (25)
- European	15 (13.39)	6 (5.35)	7 (6.25)	
- Asian				
- African				

- Other				
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**Table A4 – Breathlessness/dyspnoea by initial lung function result**

<b>Dyspnoea scale</b>	<b>Low risk N=66</b>	<b>Medium risk N=29</b>	<b>High risk N=17</b>	<b>TOTAL N=112</b>
0 – I am not troubled by breathlessness except on strenuous exercise	23 (20.54)	15 (13.39)	7 (6.25)	45 (40.18)
1 – I feel short of breath when hurrying or walking up a slight hill	26 (23.2)	9 (8.04)	6 (5.36)	41 (36.61)
2 – I walk slower than my peers (people of my age) on level ground because of breathlessness, or have to stop for breath when walking at own pace	7 (6.25)	3 (2.68)	-	10 (8.93)
3 – I stop for breath after walking about 100m or after a few minutes on level ground	5 (4.46)	2 (1.79)	3 (2.68)	10 (8.93)
4 – I feel too breathless to leave the house, or breathless when dressing or undressing	2 (1.79)	-	1 (0.89)	3 (2.68)

**Table A5 – Patient’s medical history by baseline Piko result**

<b>Condition</b>	<b>Low risk N=66</b>	<b>Medium risk N=29</b>	<b>High risk N=17</b>	<b>TOTAL N=112</b>
Heart (inc. blood pressure, high cholesterol, angina)	43 (38.39)	21(18.75)	12 (10.71)	76 (67.86)
Diabetes	7 (6.25)	4 (3.57)	-	11 (9.82)
Central Nervous System (inc. depression, insomnia)	25 (22.32)	7 (6.25)	8 (7.14)	40 (35.71)
Gastrointestinal	21 (18.75)	16 (14.29)	6 (5.36)	43 (38.39)
Respiratory Tract Infections	12 10.71)	5 (4.46)	4 (3.57)	21 (18.75)
Asthma	15 13.40)	11 (9.82)	2 (1.79)	28 (25)
Pain	34 (30.36)	15 (13.39)	8 (7.14)	57 (50.89)
Other	19 (16.96)	9 (8.04)	3 (2.68)	31 (27.68)

**Table A6 – Medication by medical condition / drug class**

	# drugs		
	Visit 1 Existing meds N=112	Visit 2 New meds N=52	Visit 3 New meds N=32
Medication (by health condition)	N (%)	N (%)	N (%)
Heart (inc. blood pressure, high cholesterol, angina)	79(70.54)	1(1.92)	1(3.12)
Diabetes	9(8.04)		
Central Nervous System (inc. depression, insomnia)	29 (25.89)		2(6.25)
Gastrointestinal	30(26.79)	1 (1.92)	
Respiratory Tract Infections (antibiotics)		1(1.92)	
1 antibiotic	4 (3.57)		
2 antibiotic	5 (4.46)		
3 antibiotic	3 (2.68)		
4 antibiotic	2 (1.79)		
Asthma			
Antitussive	1 (0.89)		
Combination	17 (15.18)	5(9.62)	
B2 agonist	20 (17.85)		
Corticosteroids	6 (5.36)	1(1.92)	
Pain	27 (24.11)	1 (1.92)	1(3.12)
Other	31 (27.68)		1(3.12)
Herbal etc.	47 (41.96)	6(11.5)	2(6.25)

**Table A7– Demographics of Consumer Awareness Survey respondents**

N=50	N	%
Gender		
- Male	26	52.0
- Female	24	48.0
Total	50	100.0
Nationality		
- European	5	10.2
- Caucasian	43	87.8
- Asian	1	2.0
Total	49	100.0

Employment Status		
- Full-time	7	14.0
- Part-time casual	6	12.0
- Self-employed	2	4.0
- Not currently employed	5	10.0
- Retired	30	60.0
Total	50	100.0
Smoking Status		
- never smoker	24	48.0
- ex-smoker	10	20.0
- current smoker	15	30.0
- occasional smoker	1	2.0
Total	50	100.0

**Table A8 – Proportion of patients that have experienced potential symptoms of COPD.**

<b>Symptom</b>	<b>N</b>	<b>%</b>
Coughing several times on most days		
- Experienced	33	29.46
- Not experienced	17	15.19
Total	50	44.65
Bringing up phlegm or mucus on most days		
- Experienced	38	33.93
- Not experienced	12	10.71
Total	50	44.64
Getting out of breath more easily than other people your age		
- Experienced	36	32.14
- Not experienced	13	11.61
Total	49	43.75