Where's the value: motivating clinicians to practise individual and population medicine

Siân Williams

Cleanmed 2013

International Primary Care Respiratory Group IPCRG

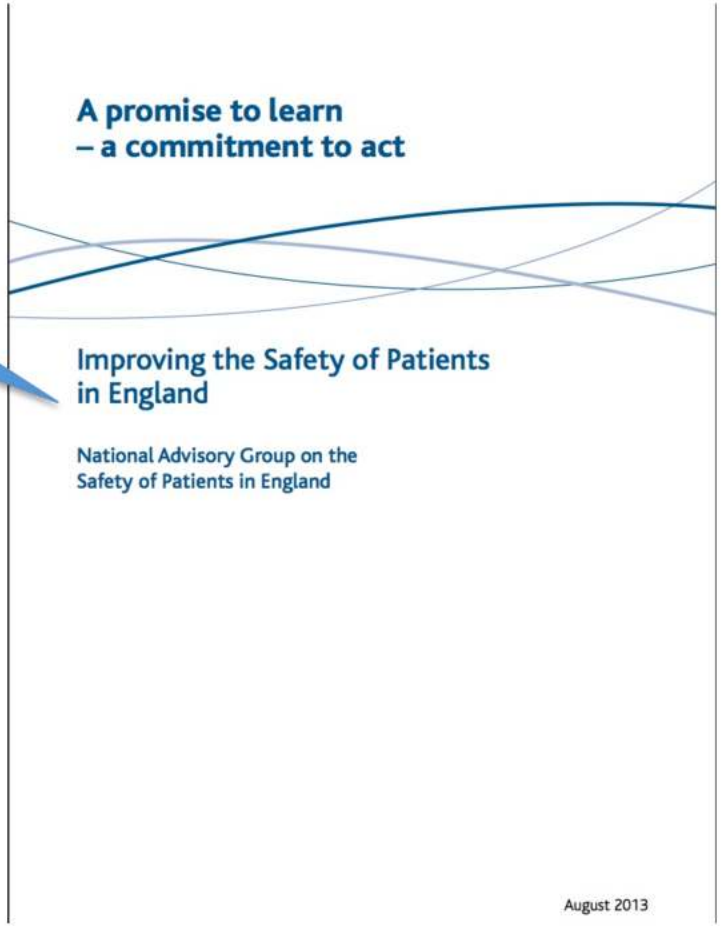
NHS London

Improving the experience of all Londoners with COPD and minimising the impact of the disease

We need hope (Berwick)

Fear is toxic to both safety and improvement:
Fear impedes improvement in complex human systems…

Make sure pride and joy in work, not fear, infuse the NHS



Cast your mind back…90s, Brazil, AIDS

- World Bank Report predicted
  - 30 million people with HIV
  - 90% developing countries
  - 1.2m in Brazil by 2000
  - “intractable problem”
    - $ retrovirals
    - Complicated self-management but poor literacy & education
    - Massive behaviour change re safe sex
    - Food in short supply
    - Needs prevention and treatment at same time
    - No time: 2-3 generations will die

Simple problems
eg cataract op

Traditional Victoria sponge

★★★★★ Review it | Read (17) Easy

Recipe by: apple.strudel

This is the traditional recipe for a Victoria sponge cake, a much loved English favourite. See footnote about weighing the eggs for best results. Serve ... See more

Ready in **1 hour 5 mins**

Saved by 293 cook(s)

Add a picture 1 of 8

Picture by: apple.strudel

Ingredients

Makes: **1 (7 in) Victoria sponge cake**

3 eggs
150g (6 oz) self raising flour
150g (6 oz) caster sugar
150g (6 oz) butter or margarine
1/2 teaspoon vanilla extract
jam to sandwich the cake
For the buttercream:
100g (4 oz) icing sugar
50g (2 oz) butter
1/2 teaspoon of vanilla extract

Print friendly
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Preparation method

Prep: **30 mins** | Cook: **35 mins**

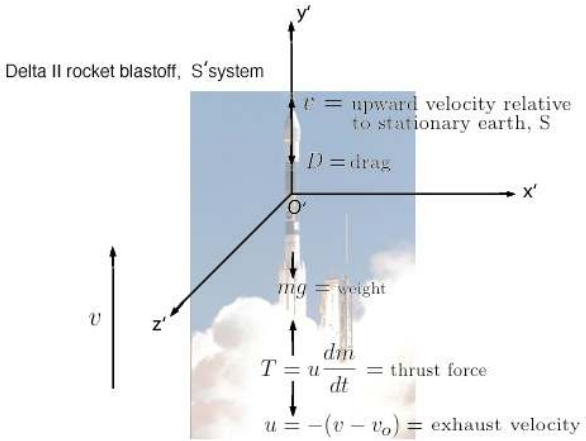
1. Preheat the oven to 170 C / Gas 3. Place the shelf in the centre of the oven. Grease and line two 18cm (7 in) sandwich tins with baking parchment.
2. Weigh the three eggs. Note the weight and measure the same amount of sugar, flour and butter. (See footnote.)
3. Sieve the flour into a bowl and add the sugar, butter or margarine and vanilla. Crack in the eggs and beat well with a wooden spoon or mixer, until the mixture is light coloured and fluffy. Divide the cake mixture between the tins and smooth the tops.
4. Bake for 30 to 40 minutes or until golden brown. Cool for 5 minutes in the tins, then turn out onto a wire rack to cool completely.
5. To make the buttercream, sieve the sugar into a bowl, add the butter and vanilla and beat well.
6. To sandwich the cakes together: Add a layer of jam to the top of one of the sponges, followed by a layer of cream on top of the jam, finish by placing the last of the sponges on top. Dust with a layer of icing sugar if desired.

Tips

I always use margarine, butter is too heavy. Eggs can vary a lot in size, for perfect results weigh the 3 eggs. This will more than likely weigh over or under 150g (6 oz). For example, if the eggs weigh 175g you would use 175g each of the flour, sugar and margarine.

Glouberman & Zimmerman 2002. Commission on the Future of Health Care in Canada

Complicated problems



General Thrust Equation

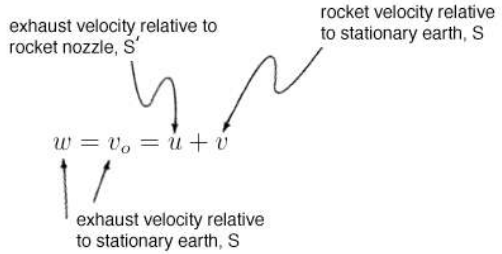
1). thrust is a force

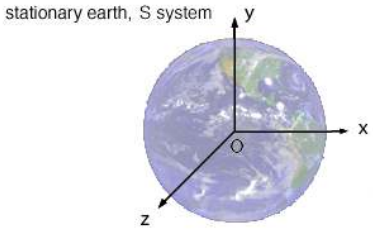
2). force = change in momentum over a period of time

$$= \frac{mv_2 - mv_1}{t_2 - t_1}$$

$$= \frac{m(v_2 - v_1)}{\Delta t}$$

$$\Longrightarrow \therefore \text{ force} = m\frac{\Delta v}{\Delta t} = ma$$





v = upward vertical rocket velocity relative to stationary earth, S

v_o = initial rocket upward vertical velocity of propellant fuel relative to stationary earth; also initial exhaust velocity relative to stationary earth, S

D = downward atmospheric drag; this is neglected at this time for simplicity

T = thrust force, applying Newton's 3rd law

u = exhaust velocity relative to rocket nozzle, S′, applying Newton's 3rd law

F_{ext} = net external force expended in accelerating rocket and variable (diminishing) mass of propellant fuel

Acute disease

Abrupt onset; causes can be identified and measured; specific therapy may be available; intervention usually effective; profession knowledgeable, laity inexperienced

Glouberman & Zimmerman 2002. Commission on the Future of Health Care in Canada

Complex problems

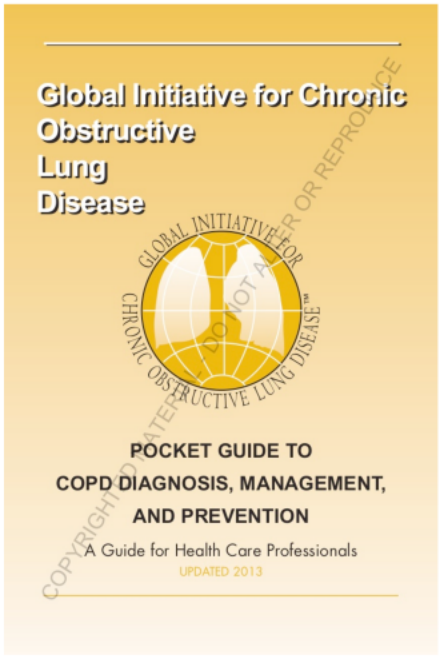
Chronic disease
Gradual onset, multivariate cause, diagnosis uncertain, prognosis obscure, indecisive technology and therapy has adversity; no cure; uncertainty; management, coaching and self- care needed; profession and laity must be reciprocally knowledgeable

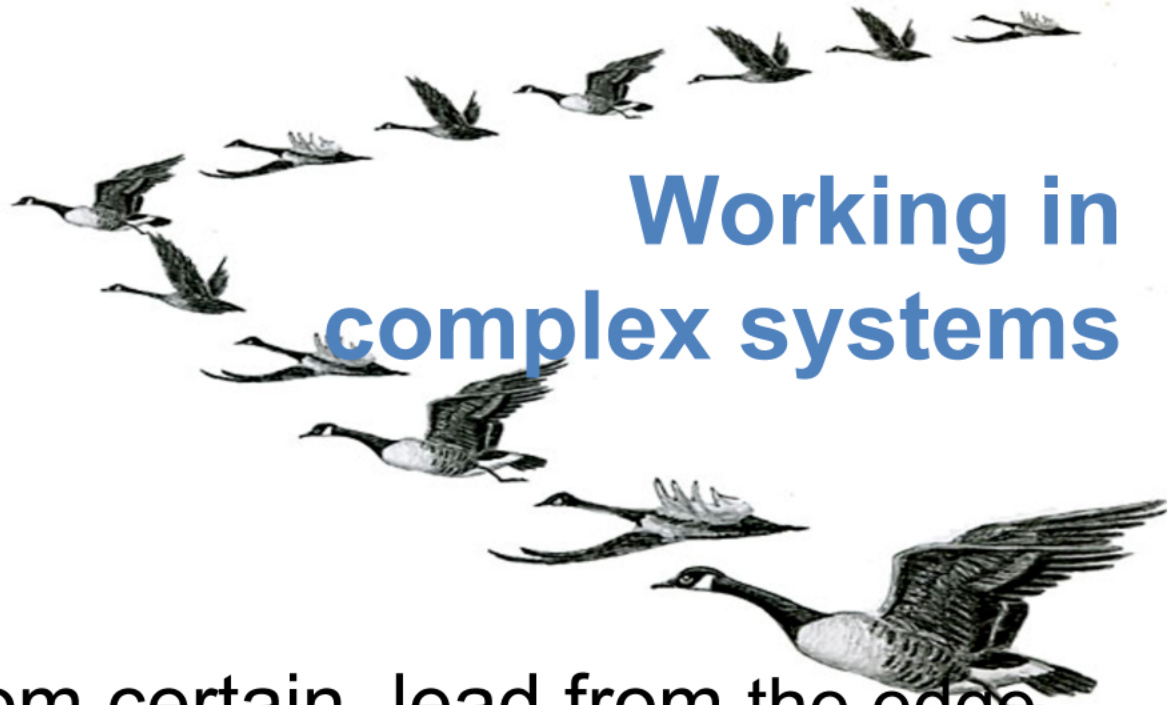
Glouberman & Zimmerman 2002. Commission on the Future of Health Care in Canada

Brazil and AIDS

- $ retrovirals
- Complicated self-management but poor literacy & education
- Massive behaviour change re safe sex
- Food in short supply
- Needs prevention and treatment at same time
- No time: 2-3 generations will die

- Brazil: complex problem with solutions
  - Hope: “we have the resources we need”
  - Cut costs: World Trade Organisation – “emergency”
  - Trained people to self care using informal system
  - “Civil society”, churches
  - Reached those at risk: prostitutes as peer educators
  - Prevention as part of treatment and treatment allowed access to population for prevention
  - Condom use from 4% (1986)-48%(1999)





Working in complex systems

"When life is far from certain, lead from the edge, with clockware and swarmware in tandem giving due honor to each."

- Data and intuition
- Planning and acting
- Safety and risk

Paul Plesk, http://www.directedcreativity.com/pages/ComplexityWP.html

Birds in Flight – “Boiding”

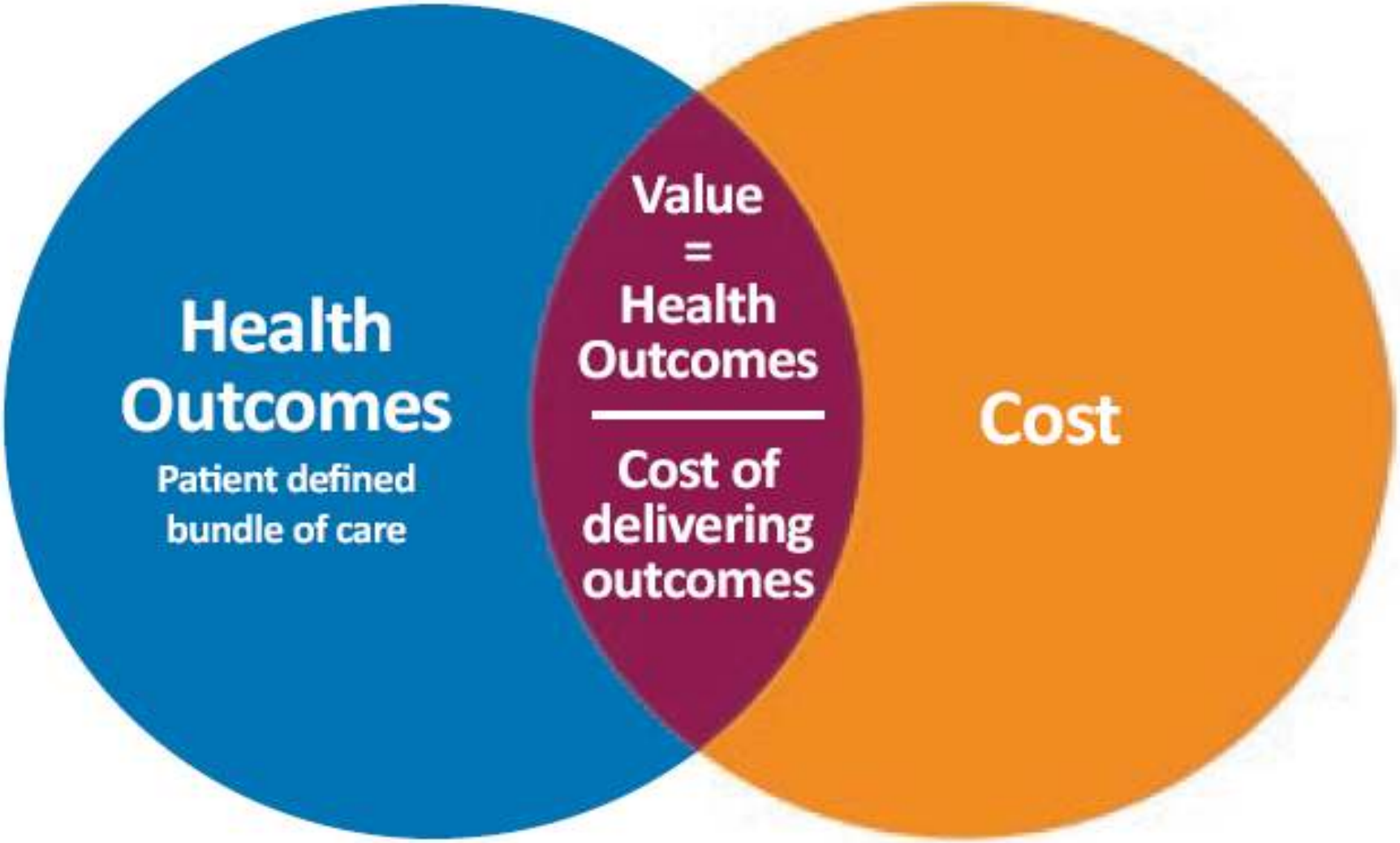
So each bird ends up saying to herself, "Check the other birds around me, make sure I'm not too close or too far from each one, don't run into anything like a telephone pole, and every now and then if I make a slight random change of direction, as long as the other birds follow the rules, we'll all hang together."

Myra Stern, Whittington, after Reynolds C. http://www.red3d.com/cwr/boids

Our simple rules for boiding

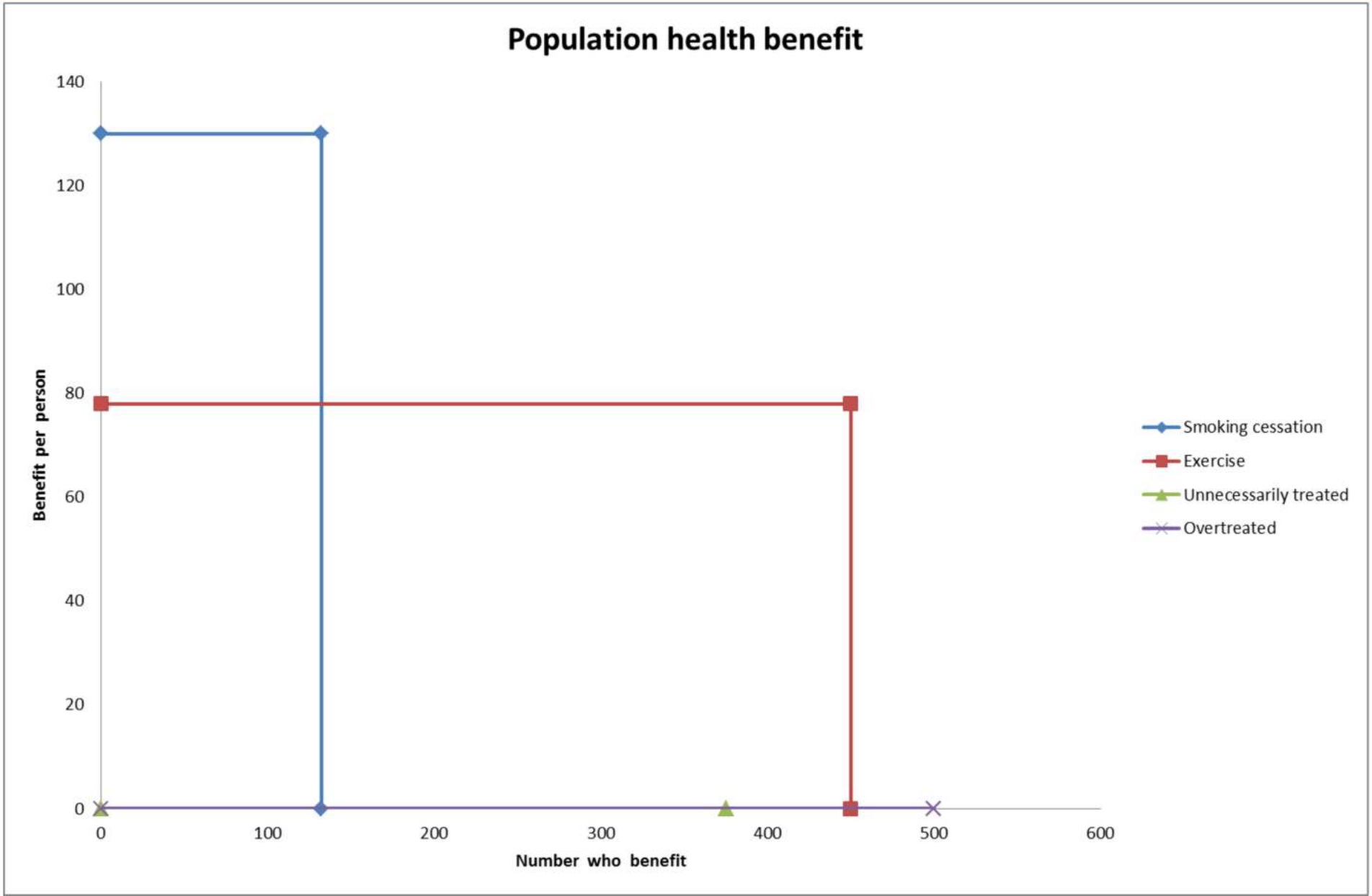
- Care about value
- Right care
  - Doing things right (technical skill)
  - Doing the right things (decision-making)
  - Knowing the cost, cost-effectiveness and population that would benefit
- Compassion

Value Framework



Porter ME; Lee TH
NEJM 2010;363:2477-2481; 2481-2483

IMPRESS: Mild-moderate COPD



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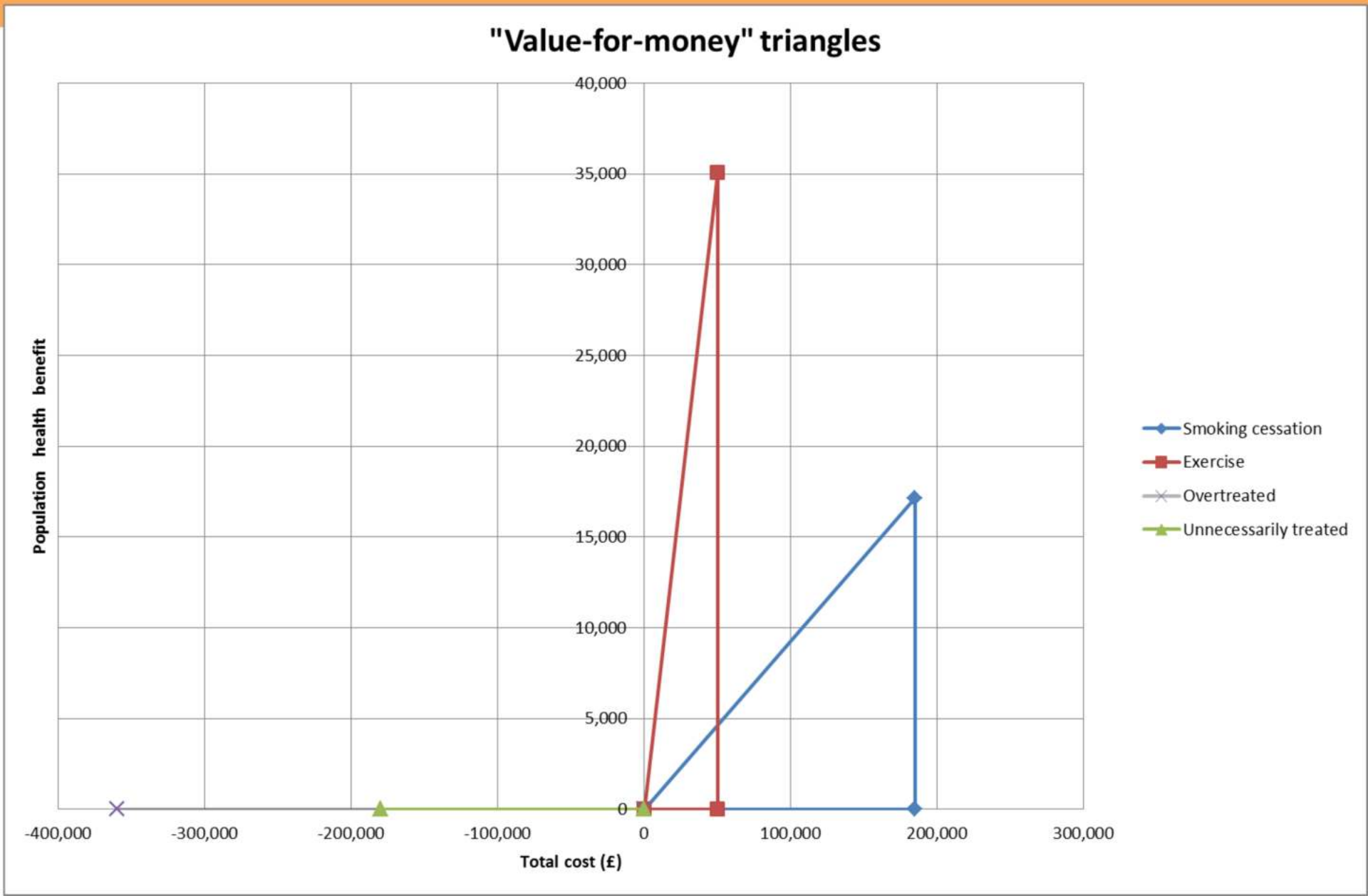
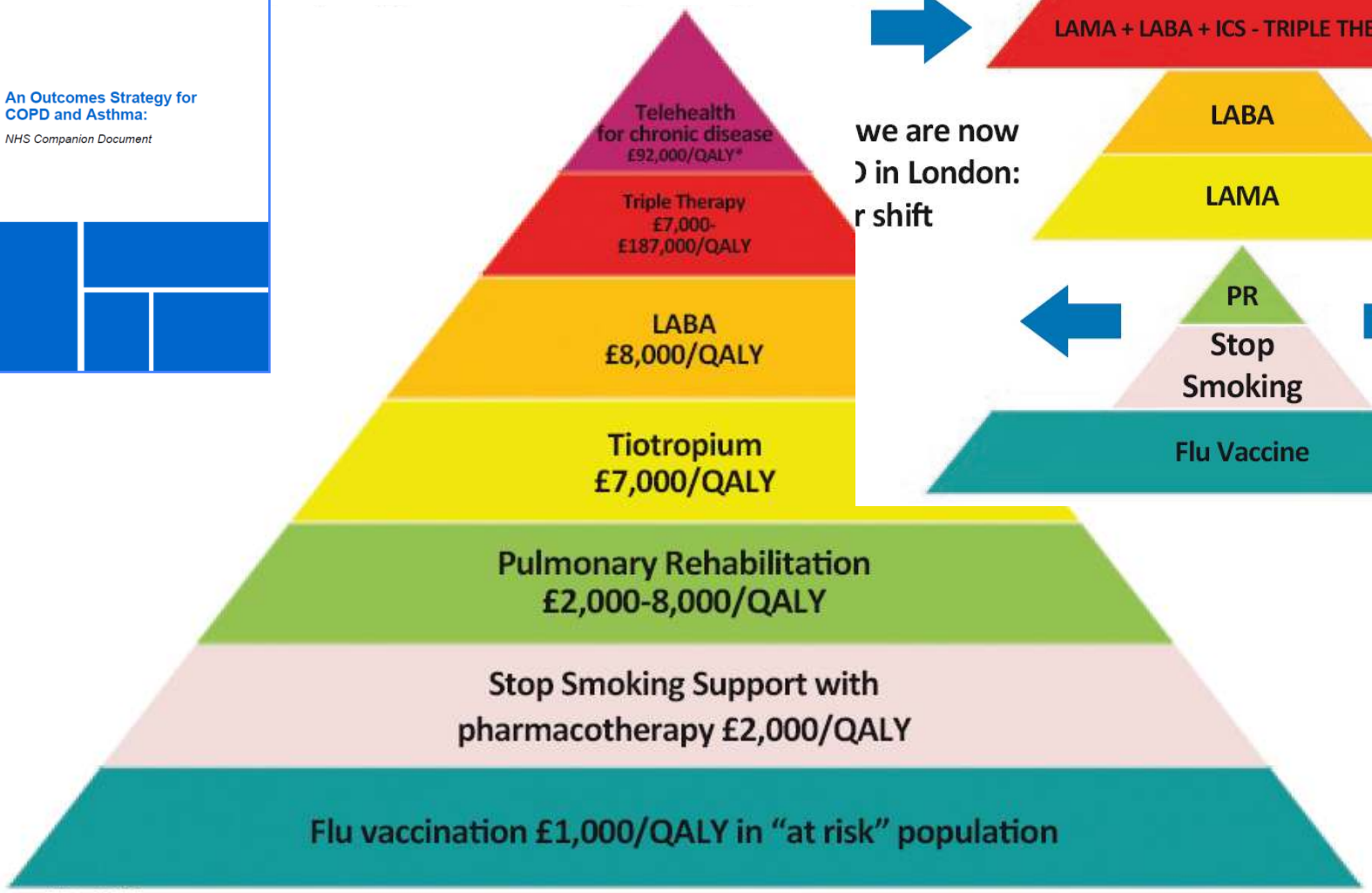


COPD 'Value' Pyramid

NHS

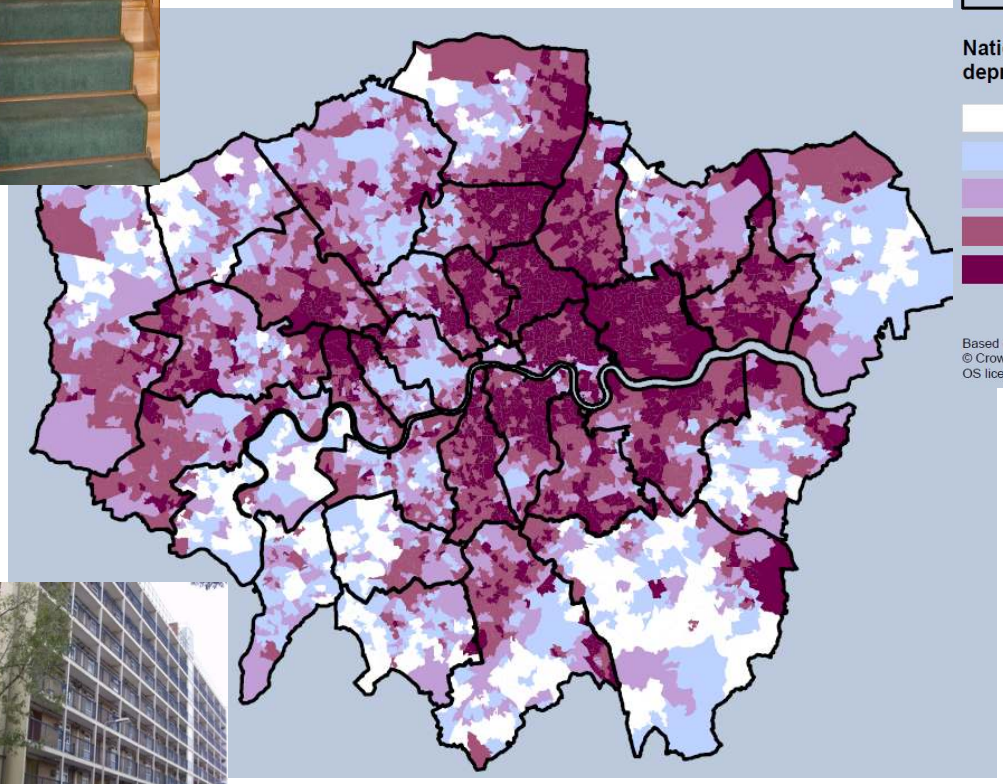
An Outcomes Strategy for COPD and Asthma:

NHS Companion Document

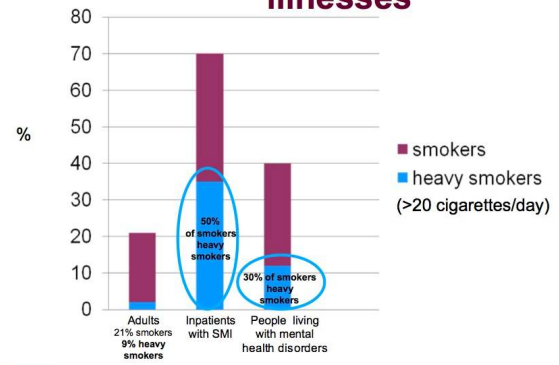


*(not specific to COPD)

Where are the people?



Smoking risk in people with mental illnesses



O'Brien *et al* 2002, Farrell et al 2001

NHS London

London Respiratory Team

Improving the experience of all Londoners with COPD and minimising the impact of the disease

COPD in people with serious mental illness (SMI)

200 out-patients with SMI

- **60% current smokers** (mean age 44)
- 23% COPD prevalence (**self-reported**)
- Only **36% reported having COPD treatment**

Himelhoch S, Lehman A, Kreyenbuhl J et al. ***Am J Psychiatry*** *2004;161:2317-2319 0*

147 Medicaid patients with SMI

- **31% COPD prevalence**; 50% as co-morbidity
- Annual costs for SMI **and** COPD were 4 x higher
- **45%** (5/11) deaths due to respiratory disease

Jones DR, Macias C, Barreira PJ et al ***Psychiatric Services*** *2004;55:1250-1257*

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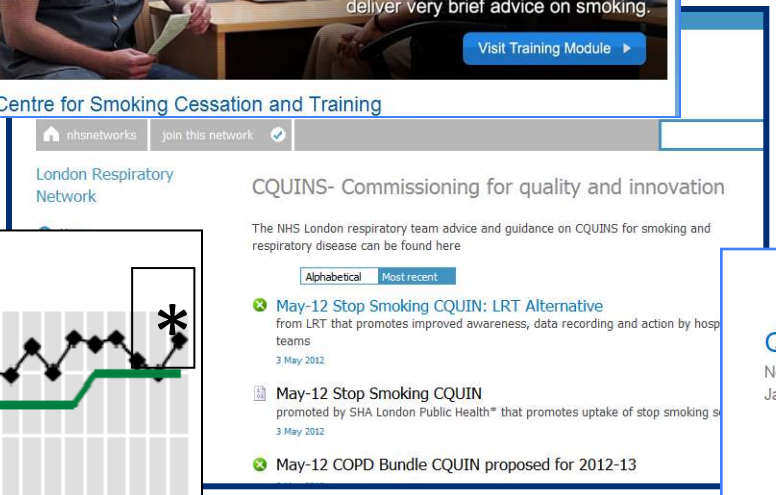
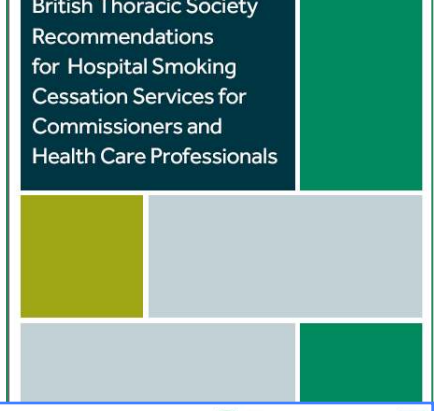
Improving the experience of all Londoners with COPD and minimising the impact of the disease

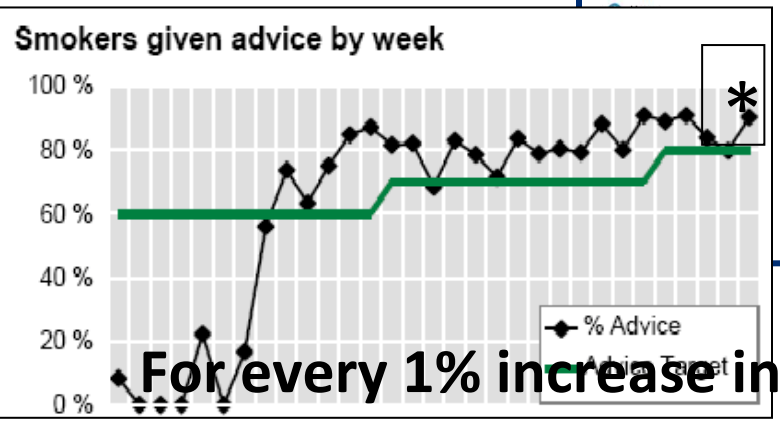
People with COPD live in difficult social circumstances, *30% live alone & 60% have no personal care support……* People with mental health problems **die on average 16-25 years sooner** than the general population

Quit smoking as **treatment** for sick smokers

	1 year abstinence	QALY
Usual care	1.4%	
Minimal counselling	2.6%	£14,735
Intensive counselling	6%	£7,149
Intensive counselling + **pharmacotherapy**	12.3%	**£2,092**







For every 1% increase in prevalence of smoking in the COPD population there is a 1% increase in COPD admission rates.*

Confronting the prescribing data

Inhaled Corticosteroid Safety Information for Adults

Inhaled corticosteroid agents are very important in the treatment of respiratory conditions such as asthma and sometimes, chronic obstructive pulmonary disease (COPD). They act by reducing inflammation and preventing symptoms from developing. Corticosteroid sprays are used for nasal conditions such as sinusitis and hayfever. Gene… are very safe and free from serious side effects when used in sta…

Inhaled corticosteroids can cause local side effects such as sore throat, hoa… oral thrush (sore white patches in the mouth). The risk of these side effects … reduced by using a spacer device with aerosol inhalers (MDI's) that contain … and rinsing your mouth out with water (and spitting out) after using any corti… inhaler. Prolonged use of inhaled corticosteroids may lead to easy bruising … the skin, especially in older people. Very rarely, higher doses of inhaled cort… may temporarily reduce your body's ability to produce its own corticosteroid… stress, such as in severe illness or undergoing surgery, or to fight off some i… (e.g. chickenpox).

You have been given this information and the attached safety card because you have been prescribed a higher dose of inhaled corticosteroid.

It is important that you do NOT stop using your inhaled corticosteroid medications suddenly if you have been taking this medication for more than 3 weeks.

Be sure to get your repeat prescription of your inhaler before it runs out.

To be completed by medical practitioner

High Dose Inhaled Corticosteroid Safety Card

Name: _____ DOB: _____

I am currently taking: 1. _____ Since: _____
2. _____ Since: _____

My normal dose is: 1. ____ puffs ____ times a day
2. ____ puffs ____ times a day

If MDI – using Spacer? Yes ☐ No ☐

I may be at risk of corticosteroid insufficiency when I am ill and supplementation should be considered.

If you become ill for… be sure to alert the medica… after you that you are using … inhaled corticosteroid as… additional corticosteroid… by the safety card attached to … sheet with you at all times and… your medical team. Recorde… card opposite are any inhalec… corticosteroids that you … ly be taking.

If you start to experi… these symptoms: worsening … weakness, loss of appe… weight loss, dizziness, u… nausea, vomiting and d… see your general practitioner … they might be related to the … corticosteroid you are ta… top taking your inhaled corti… erly. If you have never had c… should avoid close cont… who have chickenpox or shin… come into contact with someo… conditions, see your doc…

Inhaled Corticosteroids in Adults: Prescribing Guidance for Healthcare Professionals

1. Inhaled corticosteroids (ICS) are generally considered safe when used in low doses. However, when higher doses are used over long periods, there is a risk of systemic side effects. All clinical guidelines stress the importance of ensuring that the lowest effective dose of inhaled corticosteroids is used.

2. The systemic side effects of corticosteroids are well known. High doses of inhaled corticosteroids are associated with clinically detectable adrenal suppression (*Arch Intern Med* 1999;**159**:941-55), increased risk of non fatal pneumonia in patients with COPD (*Arch Intern Med* 2009;**169**:219-29), increased risk of type II diabetes (*Am J Med* 2010;**123**:1001-6), and may increase the risk of fractures (*Thorax* 2011;**66**:699-708). It is strongly recommended that all patients on higher doses of ICS (>1000 micrograms Beclometasone dipropionate (BDP) equivalent per day, or Step 4 or above of BTS/SIGN Asthma guidelines) should be made aware of the potential risks and given an inhaled corticosteroid safety warning card about adrenal suppression.

3. Patients taking nasal corticosteroids in addition to inhaled corticosteroids should be assessed for their potential total daily dose of corticosteroid. For those patients on doses of inhaled corticosteroids between 800-1000 micrograms of BDP equivalent per day, a corticosteroid safety card is recommended, especially if additional corticosteroids are taken.

4. Clinical trials of combination therapy in COPD show that both **Symbicort 400 1 inhalation twice a day** (*Eur Respir J* 2003;**22**:912-19, *Eur Respir J* 2003;**21**:74-81) and **Seretide 500 Accuhaler 1 inhalation twice a day** (*N Engl J Med* 2007;**356**:775-89, *Am J Respir Crit Care Med* 2008;**177**:19-26) (Seretide 250 evohaler is not licensed for use in COPD) are equally effective in reducing the frequency of exacerbations and statistical improvements in quality of life in those with severe or very severe COPD and who have 2 or more exacerbations a year. However, the recommended BDP equivalent dose of Seretide is more than twice that of Symbicort. This may have an effect on the long term risk of corticosteroid side effects. The choice of which to use should be discussed with your patient.

5. At equipotent doses, there is no difference in the safety profile of different inhaled corticosteroids. Budesonide and ciclesonide are roughly equipotent to BDP. Fluticasone, mometasone and the newer ultrafine particle BDP HFA inhalers (QVAR and Fostair) are roughly twice as potent as standard BDP inhalers – see the BDP dose equivalence chart.

Before increasing the dose of inhaled corticosteroid:

6. Check inhaler technique. Poor inhaler technique, especially with aerosol inhalers is very common, and will contribute to treatment failure. Improving delivery of ICS to the lungs may be more effective than increasing the dose. Thus it is imperative that inhaler technique is checked at all times and appropriate changes made. All ICS MDIs (other than the newer ultrafine Beclometasone-HFA) should be used, and use taught, with a spacer (Volumatic or Aerochamber). The use of a large volume spacer may double drug delivery to the lungs (*Br J Clin Pharmacol* 1998;**46**:45-8, *Clin Pharmacokinet* 2004;**43**:349-60). It is important to prescribe a spacer that is compatible with the MDI device.

7. Although it is recommended in clinical asthma guidelines, there is limited evidence that increasing the dose of inhaled corticosteroid over 800 micrograms BDP equivalent/day is effective in improving asthma control. Even in acute …

LRT Responsible Respiratory Prescribing (RRP) messages

LRT RRP message 1. Five out of the top 5 drugs in terms of total spend to the NHS are respiratory inhalers

LRT RRP message 2. When prescribing any new respiratory inhaler, ensure that the patient has been offered NICE-recommended support to stop smoking

LRT RRP message 3. Pulmonary rehabilitation is a cost-effective alternative to stepping up to "triple therapy" and should be the preferred option if available and the patient is suitable

LRT RRP message 4. When prescribing any inhaled medication, ensure that the patient has undergone patient-centred education about the disease and inhaler technique training by a competent trainer

LRT RRP message 5. When prescribing an MDI (except salbutamol), ensure that a spacer is also prescribed and will be used

LRT RRP message 6. When prescribing high dose inhaled corticosteroids (>1000ug BDP equivalent?), ensure that the patient is issued with an inhaled steroid safety card

LRT RRP message 7. No prednisolone EC prescribing without specific clinical reason. Red-coated steroid tablets are no more effective or protective than white steroid tablets but are much more expensive.

When should you give an inhaled corticosteroid card?

Inhaled corticosteroids ≤ 800 micrograms (BDP Equivalent)/day

CORTICOSTEROID SAFETY CARD NOT REQUIRED

Steroid	Proprietary	Dose/inhalation	Daily dose used	Cost/month
Beclometasone (BDP)	Asmabec, Clenil	50	2 twice a day	£ £
Beclometasone (BDP)	Asmabec, Pulvinal EasyHaler-BDP, Becodisk, Clenil	100	2 twice a day	£ £ £ ££ (refill) £
Beclometasone HFA	Qvar	50	2 twice a day	£
Budesonide	Pulmicort 100, Easyhaler-BD	100	2 twice a day	£ £
Fluticasone	Flixotide 50 Accuhaler, Flixotide 50 Evohaler	50	1-2 twice a day 1-2 twice a day	£–££ £
Fluticasone	Flixotide 100 Accuhaler	100	1 twice a day	£
Fluticasone	Flixotide 125 Evohaler	125	1 twice a day	££
Ciclesonide	Alvesco	80	1-4 a day	£-£££
Mometasone	Asmanex	200	1 once a day	££
Beclometasone HFA/Formoterol	Fostair	100/6	1 twice a day	££
Budesonide/Formoterol	Symbicort 100	100/6	2 twice a day	£££
Budesonide/Formoterol	Symbicort 200	200/6	1 twice a day*	££
Fluticasone/Salmeterol	Seretide 50 Evohaler	50/25	2 twice a day	££
Fluticasone/Salmeterol	Seretide 100 Accuhaler	100/50	1-2 twice a day	££

Inhaled corticosteroids 800-1000 micrograms (BDP equivalent)/day

CORTICOSTEROID SAFETY CARD RECOMMENDED (Especially if additional corticosteroids taken)

Steroid	Proprietary	Dose/inhalation	Daily dose used	Cost/month
Beclometasone (BDP)	Clenil	200	2 twice a day	£
Beclometasone (BDP)	Pulvinal, EasyHaler-BDP, Becodisk	200	1 twice a day	££ ££ £££ (refill)
Beclometasone HFA	Qvar	100	2 twice a day	££
Budesonide	Pulmicort 200, Easyhaler-BD, Budelin	200	2 twice a day	££ ££ ££ (refill)
Budesonide	Pulmicort 400, EasyHaler-BD	400	1 twice a day	££ ££
Fluticasone	Flixotide 100 Accuhaler	100	2 twice a day	££
Fluticasone	Flixotide 125 Evohaler	125	2 twice daily	£££
Fluticasone	Flixotide 250 Accuhaler Flixotide 250 Evohaler	250	1 twice daily	£££
Ciclesonide	Alvesco	160	2-3 once a day	££-£££
Mometasone	Asmanex	200	2 once a day	£££
Mometasone	Asmanex	400	1 once a day	££-£££
Beclometasone HFA/Formoterol	Fostair	100/6	2 twice a day	£££
Budesonide/Formoterol	Symbicort 200	200/6	2 twice a day*	££££
Budesonide/Formoterol	Symbicort 400	400/12	1 twice a day**	££££
Fluticasone/Salmeterol	Seretide 125 Evohaler	125/25	2 twice a day	££££
Fluticasone/Salmeterol	Seretide 250 Accuhaler	250/50	1 twice a day	££££

Inhaled corticosteroids >1000 micrograms (BDP equivalent)/day

CORTICOSTEROID SAFETY CARD REQUIRED

Steroid	Proprietary	Dose/inhalation	Daily dose used	Cost/month
Beclometasone	Asmabec, Clenil	250	2-4 twice a day	££-£££ £-££
Beclometasone	Pulvinal, EasyHaler-BDP, Becodisk	400	2 twice a day	£££ £££ ££££ (refill)
Beclometasone HFA	Qvar	100	3-4 twice a day	££
Budesonide	Pulmicort 200, Easyhaler-BD, Budelin	200	3-4 twice a day	£££ ££ ££-£££ (refill)
Budesonide	Pulmicort 400, EasyHaler-BD	400	2 twice a day	££££ £££
Fluticasone	Flixotide 250 Evohaler	250	2 twice a day	££££
Fluticasone	Flixotide 500 Accuhaler	500	1 twice a day	££££
Ciclesonide	Alvesco	160	2 twice a day	££££
Mometasone	Asmanex	200	2 twice a day	£££££
Mometasone	Asmanex	400	1 twice a day	££££
Budesonide/Formoterol	Symbicort 200***	200/6	3-4 twice a day*	£££££
Budesonide/Formoterol	Symbicort 400***	400/12	2 twice a day**	£££££
Fluticasone/Salmeterol	Seretide 250 Evohaler	250/25	2 twice a day	£££££
Fluticasone/Salmeterol	Seretide 500 Accuhaler***	500/50	1twice a day	££££

Approximate costs (April 2012): £ – <£10 ££ – £10-20 £££ – £20-30 ££££ – £30-40 £££££ – £40+

* Symbicort 200 is licensed for use as maintenance and relief therapy (SMART), and as adjustable maintenance dosing. The daily dose may vary between 1 inhalation twice a day, up to a maximum of 8 a day, but in studies, the average daily dose was 3 inhalations a day.

** Maximum recommended dose of Symbicort 400 2 twice a day is for asthma only, for COPD, dose is 1 twice a day.

*** Only Symbicort 200/400 and Seretide 500 Accuhaler are licensed for use in COPD. Any other combination inhaler does not currently have licence for COPD.

London Respiratory Team

NHS London

Compassion to peers and patients

A respiratory provider manifesto

I am a long term conditions clinician

I care about value

I know how to assess and support patients and drive improvements

I work in a team

I personally deliver high value care

NHS London

London Respiratory Team

Improving the experience of all Londoners with COPD and minimising the impact of the disease

KREDIT*

Respiratory Teams' Shared Values …

Kindness

Respect

Empathy

Dignity

Interest

TRUST

*Whittington Health, London Respiratory Team and …

London Respiratory Team

Improving the experience of all Londoners with COPD and minimising the impact of the disease

To practise at population & individual level we need

- Leaders who understand complexity
- Who can “boid” and follow protocols
- Who care about value
- And show compassion to their colleagues and patients