

## Chronic Obstructive Pulmonary Disease (COPD) – protocol AIM-11

### Purpose

- To help the patient understand how to manage their COPD, noting changes in SATS, temperature and sputum colour, and initiating rescue medication as appropriate.
- To support the shared management plan patient agreed with the GP practice team, empowering the patient to self-titrate medication, self care, and be less dependent on face to face clinical contacts.
- To prevent deterioration of COPD and thus reduce unnecessary admission to hospital or attendance at A&E.
- To improve compliance with use of inhalers.
- To help the patient adopt a healthier lifestyle – encouraging exercise, eating sensibly, maintaining a happy mood, taking care in adverse weather, etc.
- To discover whether the patient feels depressed, and offer simple approaches to self-management.

### Setting

General practice setting; but could be community services setting if a clinician takes responsibility

### Selection of patients

Patient is on the practice COPD disease register, diagnosed according to best practice guidelines with spirometry, and on regular medication; and clinician feels that their clinical management might be improved and the patient given more autonomy. They will have one or more of the following symptoms or behaviours:

- excessive use of inhalers
- breathlessness on exertion
- productive sputum
- one or more exacerbations of COPD in last 12 months
- attended practice frequently in previous year for respiratory reasons, having been prescribed two or more courses of antibiotics
- been admitted to hospital with exacerbation of COPD in previous year
- attended A&E, walk in centre, out of hours service (OOHs) with exacerbation of COPD/chest infection – in previous 12 months

### Expected outcomes

1 Changes in healthcare usage:

- Fewer unnecessary admissions to hospital or attendances at A&E, or walk-in centres
- Frequency and timing of rescue medication – initiated earlier when early signs of deterioration

2 Patient empowerment:

- Ability to self-titrate rescue medication

3 Improved clinical outcomes:

- Less breathless on exertion

4 Popularity of Flo:

- Patients find Flo messages helpful and reassuring

- Clinicians find Flo reinforces clinical management without excessive clinical time

#### 5 Cost effectiveness:

- Reduction in costs of secondary care usage (avoidable admissions / outpatient referral)

#### Success criteria

- 50% of patients start rescue medication appropriately, in line with shared management plan
- 50% of patients who committed at baseline do at least 20 days of texting in SATS readings over a 3 month period

#### Protocol

##### In summary:

- Patient is issued with a pulse oximeter, thermometer, weighing scales, and rescue medication
- The patient agrees a shared management plan with practice nurse (see page 106), and is given a leaflet incorporating this information.
- Daily, the patient receives text messages asking about their sputum colour and SATS and temperature (as appropriate).
- Fortnightly, the patient is asked to send in a reading of their weight
- Monthly, the patient is asked if they are physically active.
- Monthly, the patient is asked two questions to determine if they are depressed,
- Daily, the patient receives an automated information message giving general health and lifestyle advice.
- Monthly text enquiry of patient experience

##### Patient:

- signs contract, agreeing to respond to messages from Flo, to care for the equipment, and return it when asked to do so.
- signs a consent form accepting that they remain responsible for their health, and understanding that readings are sent to a computer. They specifically agree that if they are very short of breath or have chest pain or feel very ill they will phone for help from a doctor (eg general practice, out of hours service or 999 service) immediately and not use the telehealth system.
- measures their SATS and sputum colour daily, and sends the readings in to Flo when asked. If their sputum is code 4 or 5 (see Flo text codes), they are asked if they feel unwell, and if so, are asked to take their temperature. If their temperature is >37.5C, and they are more breathless than usual, they are told to take their rescue medication in line with their agreed joint management plan.
- responds to monthly question about exercise.
- measures their weight fortnightly, and sends this in to Flo when asked.
- responds to monthly questions about mood.
- receives daily information messages, and tries to adopt the advice contained in them.

##### Clinician:

- agrees a shared management plan with the patient, which includes the use of Flo. Completes self management form and prints out (see page 106).
- Advises patient about appropriate information leaflets, eg [www.improvement.nhs.uk/documents/BLF/Assessment\\_BK24\\_2012\\_v1.pdf](http://www.improvement.nhs.uk/documents/BLF/Assessment_BK24_2012_v1.pdf) [www.improvement.nhs.uk/documents/BLF/Flare-ups\\_BK23\\_2012\\_v1.pdf](http://www.improvement.nhs.uk/documents/BLF/Flare-ups_BK23_2012_v1.pdf)
- issues pulse oximeter, thermometer, and if the patient does not have suitable scales of their own, a set of scales as well/recommends they buy their own scales. Trains the patient to use the equipment.

- explains to the patient that readings are sent to an inanimate computer which is not monitored continuously, and obtains their signed consent form which states that the patient remains responsible for their own health.
- obtains patient's signed agreement to respond to Flo, and to look after the equipment, and return it when asked.
- enrolls patient on Flo by using the patient's current mobile phone number and NHS number, then selecting the appropriate service for them.
- issues standby rescue medication (e.g. doxycycline 100mg (8) + prednisolone 30mg od for 5 days (5mg x 30))
- monitors the patient's readings twice a week, and if unable to do so, ensures another member of the practice team does so.
- understands what to do if the readings are not within anticipated limits/outside agreed parameters (eg ask patient to come to surgery same day).
- after three months, asks patient to return equipment, unless doctor wants them to continue using it.

Practice administrator:

- keeps a note of patients enrolled on telehealth project and who completes three months of interactive messaging.

### Message Content

- Daily at 11.00am and a reminder at 1.00 pm for 1 year – sputum question
- Daily at 12:00 and 14:00pm SATS question
- Two-weekly weight measurement
- Monthly exercise question
- Monthly depression/mood questions
- Daily information messages for 28 days, then repeated
- Monthly patient experience questions

### Sputum reading

**Daily reminder at 11:00am** (service message)

11am: *"What colour is your sputum today? Reply: SPUTUM and the number of the colour. Thanks, Flo."*

2 hours later if the patient has not replied to the first message: *"Hi, You haven't told us what colour your sputum is today. Please reply SPUTUM and the number of the colour. Thanks, Flo."*

**Within range 1 - 2:**

*"That's good, remember to keep warm and drink plenty."*

**Colour 3 :**

- *"Increase your inhaler to the maximum dose for 2 days."*

**Colour 4 - 5:**

- *"Carry on using your inhalers as prescribed and if you are feeling unwell please reply with your temperature. TP and temperature eg: TP 37.2."*

**If they respond with a temperature reading:**

**Temperature <36.0** *"Your body temperature is very low. Wrap up warm with layers of clothes, and call the surgery to discuss this temperature reading with the nurse"*

**Temperature 36.1- 37.4** *"That's good, increase your blue inhaler to the maximum dose for 2 days."*

**Temperature  $\geq 37.5$**  *"Are you more short of breath than usual? Please reply BR1 if you are more short of breath, or BR2 if you are not."*

**Response BR1:** *"If this is typical of how your COPD gets worse, take your rescue medication today & increase inhaler to max dose for 2 days. Ask nurse within 2 days for advice."*

**Response BR2:** *"If you're tired or more short of breath later today take your rescue medication & increase inhaler to max dose for 2 days. Ask nurse within 2 days for advice."*

#### Blood oxygen reading

**Daily at 12:00:** *"What is your oxygen level today? Please reply: OX and then the number on the reading. eg "OX 95" Thanks, Flo."*

**Reminder at 14:00:** *"You haven't yet told us what your oxygen level is today. Please reply: OX and then the number on the reading. eg "OX 95" Thanks, Flo."*

**Reading  $\geq 93$**  *"Your oxygen level is normal, have a good day. Flo"*

**Reading  $<93$**  *"That's a lower level today, make sure you take plenty of rest. Take care, Flo"*

#### Weight reading every two weeks

**Reading 12:15:** *"What is your weight in Kilogrammes today? Please reply: WT followed by the number of kilogrammes. eg "WT 90.3", Thanks, Flo"*

**Reminder 16:15:** *"You haven't told us your weight. Please reply : WT followed by the number of kilogrammes eg "WT 90.3", thanks Flo."*

*"Thanks for sending in your weight. Flo."*

#### Exercise question every 4 weeks

**Reading 15:00 :** *"Are you managing to do something active most days? Please reply EXE 1 for 'yes', EXE 2 for 'no' Thanks, Flo."*

**Reminder 19:00:** *"Please let us know if you are managing to do something active most days. Reply EXE 1 for 'yes', or EXE 2 for 'no'. Thanks, Flo."*

**Response YES:** *"That's great, well done. Take care, Flo."*

**Response NO:** *"People with COPD who keep active have a much better quality of life. Take care, Flo."*

**Mood / depression question  
every 4 weeks**

**“During the past month, for how many days have you had little interest or pleasure in doing things? Please reply INT, followed by the number of days. Thanks, Flo”**

**A: 0-3** That’s good, it’s important to enjoy life.

**A: 4-10** Don’t let your problems get on top of you. It’s OK to spoil yourself sometimes: find a new hobby, or phone a friend for a chat, or meet up for a cup of tea.

**A: 11-31** Spend some time doing what you’ve liked in the past – listen to music, have a relaxing bath, read a book, or meet a friend. Relaxation techniques can help.

**“During the past month, for how many days have you felt down, depressed, or hopeless? Please reply FEEL, followed by the number of days. Thanks, Flo.”**

**A: 0-3** You seem to be managing pretty well. It’s important to see things in a positive way, and manage your medical condition so you feel in control.

**A: 4-10** It’s not unusual to feel down sometimes. Try to think what positive successes you’ve had, and try to do something you’re pleased with each day.

**A: 11- 31** You seem to be having difficulties. Instead of thinking about what you can’t manage now, look at what you can achieve, against the odds, and be proud of that.

**If 2 consecutive months of high scores, monitoring clinician should contact patient and suggest appointment with GP.**

**Information messages (daily  
for 28 days, then repeated)**

1. Try to avoid smoky places; ask people around you not to smoke. Take care, Flo
2. Relax and avoid caffeine before bedtime to help you sleep better.
3. Doing easy swinging exercises with your shoulders improves your flexibility and helps your breathing too. Take care, Flo
4. Eat more fruit and vegetables to maintain your health. Take care, Flo
5. Plan the activity you can manage each day. Increase that each week. If too much, cut back.
6. Drink plenty of fluids - at least 8 glasses of fluid a day. Take care, Flo
7. Stop and rest when you need to, don’t get over-tired.
8. Take 30 minutes rest after meals throughout the day. Take care, Flo
9. Practise deep breathing- rest your elbows on the arms of your chair to prevent your shoulders lifting. Take care, Flo
10. If it’s too far to walk to the shops and back, take a bus or taxi one way. Take care, Flo
11. Only do one thing at a time to keep your breathing steady.
12. Breathing uses energy, so good nutrition is very important.
13. Eating healthy foods will help you fight off infections.
14. To keep fit stand up from sitting without using your hands; do it ten times.
15. Have regular quiet periods every day as relaxation helps your breathing.
16. If you feel a bit stuck at home it’d be good to find a new interest.
17. Daily short walks are really good for your lungs.
18. Keep the air in your house at a constant temperature to help your lungs.
19. Cover your nose and mouth with a scarf to help your breathing on a cold or windy day.
20. Why not try a different hobby – one that gives you some more exercise?
21. Plan ahead to space out tasks so you don’t get over-tired.
22. Stay away from people who have colds, so you don’t catch it too.

- 23. Clear the bottom of your lungs every morning by lying on each side, and taking deep breaths to help you cough.
- 24. If it's too cold to go outside for a walk, walk around inside your house for 15-20 minutes regularly.
- 25. Phone a friend – it's easy to get isolated when you're less mobile.
- 26. Walking improves your circulation. If you're short of breath - set a target distance and walk a bit further each day.
- 27. If you can swim, try to do that twice a week.
- 28. It's good to cough and clear your lungs so don't take cough medicines to stop you coughing.

**Patient experience questions**

**End of first month:**

*"Hi, Shortly I'll ask three questions to see how you liked the Flo system. Your answer will be either #1 if you agree with what's said, or #2 if not. Thanks, Flo"*

*ANS1 "Please text #1 if you agree with the statement "I would recommend this service to my family and friends", or #2 if you disagree."*

*ANS2 "Please text # 1 if you agree with the statement "I have no difficulty in taking my oxygen readings" , or # 2 if you don't."*

*ANS3 "Please text # 1 if you prefer to send your readings to the practice via Flo, rather than go to the surgery, or # 2 if you don't."*

*"Thank you for giving us your views. This will help us to improve the service for patients in the future".*

**End of months 2 and 3 :**

*ANS1 "Please text #1 if you agree with the statement "I would recommend this service to my family and friends", or #2 if you disagree."*

*ANS 2 "Please text #1 if you agree with the statement "I find the messages helpful and interesting", or text # 2 if you don't. Thanks, Flo."*

*ANS 3 "Please text #1 if you agree with the statement "I know what to do if I feel unwell", or text # 2 if you don't. Thanks, Flo."*

*"Thank you for giving us your views. It will help us to improve the service for the future."*

**Evaluation (optional)**

**Practice team completes:**

Patient's name .....

Date when started using Flo.....

Most recent SATS prior to using Flo(if available)..... Date.....

Attach Flo readings sheet(s) - SATS

**Medication taken for COPD in 12 months before starting Flo (steroids, antibiotics, inhalers)**

Medication	Dose	Date started / prescribed	Date stopped


**Medication taken for COPD since commencing with Flo (steroids, antibiotics, inhalers)**

Medication	Dose	Date started / prescribed	Date stopped

Healthcare usage - previous history	Number
Number of attendances at A&E, Out of Hours, walk-in-centres, etc. in 12 months before starting Flo, for any cause	

Healthcare usage - during project	Number
Number of attendances at A&E, Out of Hours, walk-in-centres, etc. in 3 months since starting Flo, for any cause	

Depression questions indicated need for consultation with GP	yes / no
If YES: was anti-depressant medication started?	yes / no If yes, what medication?
was a mental health referral made?	yes / no

**Telephone or face to face questionnaire after 3 months (if practice is interested in doing this)**

NHS number..... Date of birth..... Date..... Do you agree with the following statements? (please tick box)	Agree Disagree
1 I understand what each of my inhalers is for	<input type="checkbox"/> <input type="checkbox"/>
2 Using Flo has helped me to understand the importance of taking my inhalers regularly and on time	<input type="checkbox"/> <input type="checkbox"/>
3) I have no difficulty in taking my oxygen readings	<input type="checkbox"/> <input type="checkbox"/>
4) I find the messages helpful and interesting	<input type="checkbox"/> <input type="checkbox"/>
5) Flo has helped me to understand my condition better	<input type="checkbox"/> <input type="checkbox"/>
6) I prefer to send my readings to the practice via Flo, rather than go to the surgery	<input type="checkbox"/> <input type="checkbox"/>
7) I would recommend Flo to my family and friends	<input type="checkbox"/> <input type="checkbox"/>

Any other comments?