The Practitioner

CPD study pack

March 2019;263(1824)
The study pack contains this month's CPD exercise plus all relevant articles:

- Investigating the cause of heavy menstrual bleeding
- Diagnosis and management of premenstrual syndrome
- Optimising the management of patients with COPD

Fillable PDF templates*
- CPD exercise is a fillable PDF

CPD prompt and framework templates
- Journal article
- Case review
- Audit

*Adobe reader app needed for ipad etc
Rich text formatting enabled. Right click with mouse for text style on desk top

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Practitioner CPD exercise

This Adobe fillable PDF form captures your answers and reflections to save in your digital personal development plan

Show impact
- Collection of data
- Practice audit to show improved care
- Case studies
- Implement a protocol
- Prescribing review
- Educational meetings
- Significant event audit
- Practice meeting
- Implement a new service
- Take on new role
- Significant event audits
- Change with feedback from patients and/or colleagues

Further options for sessional GPs
- Self audit of own practice:
  - Record-keeping
  - Referrals for investigations
  - Prospective condition based reviews
  - Random case analysis with colleagues
  - Review of telephone triage outcomes
- Update drugs in emergency bag

CPD Framework
Online all articles are associated with CPD prompts/frameworks to written reflection:

Adobe fillable PDFs
- Article review framework
- Case review framework
- Audit framework

Word documents
- Reflection on a journal article
- Stages of reflection on a situation
- Team reflection

HEAVY MENSTRUAL BLEEDING

1 Which of the statements are true?

A Obesity is a risk factor for endometrial neoplasia in women in their 20s
True ☐ **False** ☐

B Tricyclic antidepressants may be a cause of iatrogenic abnormal uterine bleeding
True ☐ **False** ☐

C Pressure symptoms in women with heavy menstrual bleeding may indicate significant fibroids
True ☐ **False** ☐

D Heavy menstrual bleeding affects 20% of women of reproductive age
True ☐ **False** ☐

2 Give two reasons for referring women with heavy menstrual bleeding for transvaginal ultrasound.

3 List four symptoms of adenomyosis.

4 List any changes to your clinical practice that you may make having read this article.

PREMENSTRUAL SYNDROME

5 Which of the statements are true?

A There are no diagnostic tests for premenstrual syndrome (PMS)
True ☐ **False** ☐

B PMS symptoms should be recorded in a symptom diary for a minimum of 3 months
True ☐ **False** ☐

C Mindfulness-based cognitive therapy and cognitive behaviour therapy are effective first-line treatments
True ☐ **False** ☐

D Women with confirmed PMS who fail to respond to first-line treatments should be referred to secondary care
True ☐ **False** ☐

6 Complete the statement.

If PMS symptoms affect

and/or

and/or

quality of life this should be regarded as being

PMS.

7 What are the two potential uses of gonadotropin-releasing hormone agonists in women with severe PMS symptoms?

»

CME

Time credits=

Impact credits=

8 List any changes to your clinical practice that you may make having read this article.

COPD

9 Which of the statements are true?

A Antibiotics should be given for all COPD exacerbations
True ☐ **False** ☐

B Incorporating a cognitive behavioural component in the self-management plan may help patients cope with breathlessness
True ☐ **False** ☐

C COPD is far more common in heroin and crack cocaine smokers and occurs at a younger age
True ☐ **False** ☐

D Following diagnosis of COPD a chest X-ray and full blood count should be performed
True ☐ **False** ☐

10 Give two advantages of using the lower limit of normal to report airflow obstruction.

11 Complete the statement.
Incorrect use of inhalers, in particular critical errors, are associated with more

, poorer

more

and more

12 List any changes to your clinical practice that you may make having read this article.

Answers

HEAVY MENSTRUAL BLEEDING
1 **A** True **B** True **C** True **D** False (25%)
2 If the uterus is palpable abdominally or there are associated symptoms of pressure or pelvic pain
3 Heavy, painful or irregular periods; premenstrual pelvic pain and feelings of heaviness/discomfort in the pelvis; pain during sexual intercourse; pain related to bowel movements

PREMENSTRUAL SYNDROME (PMS)
5 **A** True **B** False (2 months) **C** True **D** True
6 Personal; social; professional; clinically significant
7 As a diagnostic tool (e.g. when diagnosis remains unclear after 2 months of recording symptoms using a symptom diary) and/or to treat symptoms when other approaches have failed

COPD
9 **A** False (only where there is clear clinical evidence of an infection) **B** True **C** True **C** True
10 Reduces overdiagnosis of COPD in older patients; reduces underdiagnosis in younger patients
11 Symptoms; disease control; exacerbations; hospitalisations

The Practitioner

Investigating the cause of heavy menstrual bleeding

Overton C. Investigating the cause of heavy menstrual bleeding.
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Investigating the cause of heavy menstrual bleeding

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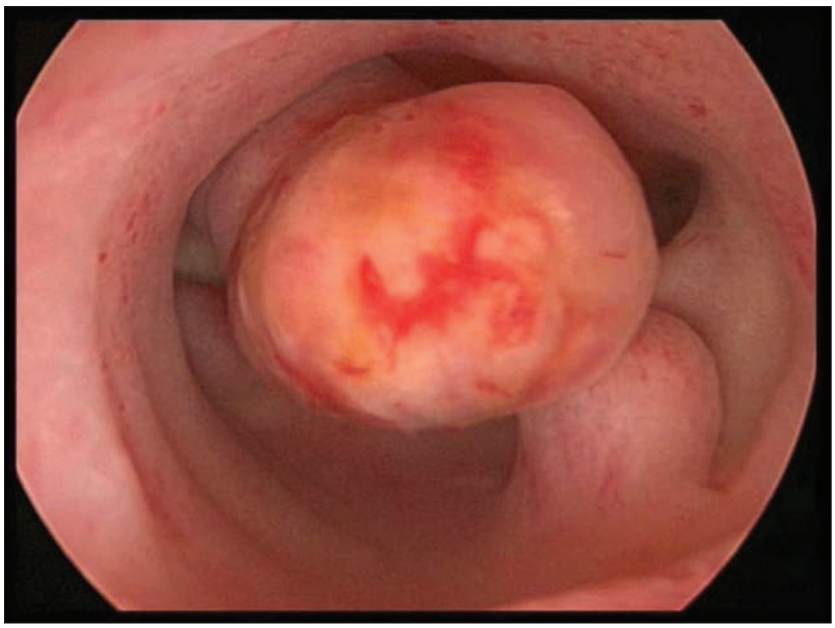

FIGURE 1
Hysteroscopy showing a pedunculated submucosal fibroid

What are the common causes?

How should patients be assessed?

What are the management options?

HEAVY MENSTRUAL BLEEDING HAS BEEN DEFINED AS 'EXCESSIVE MENSTRUAL BLOOD LOSS which interferes with a woman's physical, social, emotional, and/or material quality of life'.[1]

Heavy menstrual bleeding affects 25% of women of reproductive age and is estimated to be the fourth most common reason for referral to gynaecological services.[2] Each year, 30,000 women undergo surgical treatment for heavy menstrual bleeding in England and Wales.[3]

Normal periods last 3-7 days and do not interfere with everyday life or work. Periods are considered excessively heavy if a woman:

- Regularly needs both a tampon and a pad, or two pads at once to manage the bleeding
- Regularly gets blood on her clothes or sheets
- Regularly passes clots bigger than the size of a 50 pence piece
- Has iron deficiency anaemia because of her periods

If a woman is having to change the way she dresses, miss work or school, have a 'bed day', stop exercising and is planning her life around her periods, then she has heavy menstrual bleeding.

CLASSIFICATION OF ABNORMAL UTERINE BLEEDING

Abnormal uterine bleeding (AUB) as proposed by the International Federation of Gynecology and Obstetrics (FIGO)[4,5] replaces the terms menorrhagia, metrorrhagia and dysfunctional uterine bleeding. AUB includes heavy menstrual bleeding as well as irregular or intermenstrual bleeding.

FIGO has classified abnormal uterine bleeding (AUB) according to the acronym PALM-COEIN and updated this classification in October 2018.[6]

The components of the PALM group are structural and defined by imaging or histopathology: Polyp; Adenomyosis; Leiomyoma; Malignancy and hyperplasia.

The COEIN group are not structural and include: Coagulopathy; Ovulatory dysfunction; Endometrial disorders; Iatrogenic; and Not otherwise classified.

A woman presenting with AUB may have one or several contributory factors:

Polyps (AUB-P)

A diagnostic randomised controlled trial (RCT) of 683 women with AUB estimated that the prevalence of endometrial polyps in premenopausal women under the age of 40 was 6% and in premenopausal women over the age of 40 was 11.5%.[1] The evidence suggests that a single 1 cm endometrial polyp would not cause heavy menstrual bleeding.

Adenomyosis (AUB-A)

Adenomyosis is a condition where endometrial cells are found in the myometrium. Around one in ten women will have adenomyosis. It can occur in any woman who still has periods, but is most common in women aged 40-50 and in women who have had children. The most common symptoms are:

- Heavy, painful or irregular periods
- Premenstrual pelvic pain and feelings of heaviness/discomfort in the pelvis

Less common symptoms are:

- Pain during sexual intercourse
- Pain related to bowel movements

Around one third of women will not have any symptoms. Adenomyosis may be found coincidentally on a scan, for example. Symptoms cease at the menopause.

Leiomyoma (AUB-L)

The RCT of 683 women with AUB, mentioned above, estimated that the prevalence of uterine leiomyoma (fibroids) in premenopausal women under the age of 40 was 19% and in premenopausal women over the age of 40 was 36%.[1] »

Table 1

Likely rates of endometrial cancer per 10,000 consultations for heavy menstrual bleeding in primary care*

	Age range (years)			
	30-34	35-39	40-44	45-49
Rate of endometrial cancer per 10,000 consultations	1	1	3	8

*Based on the incidence of heavy menstrual bleeding of 38% in women with endometrial carcinoma, the 1987 incidence of cancer and the frequency of consultation in primary care with heavy menstrual bleeding of 5%. These figures have been updated with 2003 data[10]

Malignancy (AUB-M)

Women with AUB and associated malignant or premalignant lesions of the uterus (e.g. endometrial carcinoma, leiomyosarcoma, and atypical endometrial hyperplasia) are categorised as having AUB-M.

The NICE guideline on heavy menstrual bleeding[1] estimated that in women aged between 35 and 54 years, eight out of every 10,000 women who presented with heavy menstrual bleeding in primary care would have endometrial carcinoma. In women aged under 30 years the respective figure is < 0.01% or less than one per 10,000 consultations. The likely rates of endometrial carcinoma in older age groups are given in table 1, above.

Coagulation disorders (AUB-C)

Coagulation disorders are estimated to be the cause of heavy menstrual bleeding in up to 20% of cases. The most common cause of AUB, in otherwise healthy adolescents, is ovulatory dysfunction, although 5-36% of adolescents who present with heavy menstrual bleeding, have an underlying bleeding disorder. The most common form of bleeding disorder is von Willebrand's disease, affecting 13% of adolescents with abnormal uterine bleeding.[7]

Ovulatory dysfunction (AUB-O)

Regular periods every 24-38 days are usually, but not always, associated with ovulation, whereas bleeding associated with ovulatory disorders, such as polycystic ovary syndrome (PCOS), is typically irregular, both in timing and flow, and often interspersed with episodes of amenorrhoea.

Endometrial disorders (AUB-E)

There is an association between chronic endometritis and AUB. Although cervical testing for chlamydia seems reasonable, the relationship between cervically obtained results and the presence or absence of endometrial infection is unclear.

Iatrogenic (AUB-I)

AUB associated with pharmacological treatment or intrauterine devices such as the copper coil is classified as iatrogenic. It includes drugs that contribute to ovulatory disorders, such as those that affect dopamine metabolism, including phenothiazines and tricyclic antidepressants. Iatrogenic AUB includes the modern direct oral anticoagulants such as rivaroxaban and the traditional vitamin K antagonists, typically warfarin.

Not otherwise categorised (AUB-N)

The not otherwise classified category includes a spectrum of potential entities that may or may not be measured or defined by histopathology. These include, but are not limited to, conditions such as arteriovenous malformations and the lower segment or upper cervical niche or isthmocele frequently found in association with previous caesarean delivery and sometimes attributed as a cause of AUB.

ASSESSMENT AND INVESTIGATION

Assessment should include a history asking about length of the periods, regularity and the presence of intermenstrual or postcoital bleeding. It is important to check that the woman's cervical screening is up to date.

Screening for disorders of coagulation

A positive screening result would be indicated by:[8]

- Heavy menstrual bleeding since menarche

Plus one of the following conditions:

- Postpartum haemorrhage
- Surgery-related bleeding
- Bleeding associated with dental work

And two or more of the following:

- Bruising 1-2 times per month
- Epistaxis 1-2 times per month
- Frequent gum bleeding
- A family history of bleeding symptoms

This structured history is 90% sensitive for the presence of a coagulopathy in women with the symptom of heavy menstrual bleeding.[7] A woman with a positive screening result should be considered for referral to a haematologist and/or testing for von Willebrand factor and ristocetin cofactor.

Associated symptoms

Enquire about pelvic pain which might suggest endometriosis and pressure symptoms which might suggest significant fibroids. Examination should be offered if there are pain or pressure symptoms, if there is intermenstrual or postcoital bleeding and, if the woman was actively bleeding, could identify the source of the bleeding from the cervical canal. Chlamydia testing should be carried out at the time of examination or as a self-taken swab where examination is not indicated.

Initial investigations

The following investigations should be carried out: a urine pregnancy test to exclude pregnancy; full blood count; chlamydia testing as above.

Female hormone levels, thyroid function and ferritin do not need to be tested routinely, unless the patient is symptomatic.

Ultrasound

Transvaginal ultrasonography (TVUS) is an appropriate and important screening tool and, in most instances, should be performed early in the course of the investigation. The patient should be referred for a TVUS if the uterus is palpable abdominally or if there are associated symptoms of pressure or pelvic pain. TVUS is not 100% sensitive, even in ideal circumstances, because polyps and other small lesions may elude detection. However, as a pragmatic approach, if an ultrasound scan fails to show findings suggestive of endometrial polyps or submucosal leiomyomas, the structure of the endometrial cavity may be presumed to be normal and appropriate treatment initiated, see below.

Endometrial biopsy

In the 2018 updated NICE guideline,[9] the guideline committee discussed the fact that currently many women undergo endometrial biopsy unnecessarily and that the risk of

endometrial cancer in premenopausal women with heavy menstrual bleeding as the only symptom is very low.

Endometrial biopsy is painful and 'blind' biopsy may miss treatable pathology. However, if the ultrasound scan is normal and does not suggest features of an endometrial polyp or submucosal fibroid an endometrial biopsy is both highly specific and sensitive for endometrial hyperplasia or malignancy.

An endometrial biopsy is not required for all patients with AUB, so it is necessary to identify women at high risk of endometrial hyperplasia or malignancy.

Selection for endometrial sampling is based on a combination of risk factors for the presence of premalignant or malignant changes. These include persistent intermenstrual bleeding, persistent irregular bleeding, infrequent bleeding in women who are obese or who have PCOS (due to a prolonged unopposed oestrogen effect on the endometrium), women taking tamoxifen, and women in whom treatment has failed or was ineffective, age over 45, obesity, and family history of endometrial and/or colon cancer (possible Lynch syndrome), and endometrial thickness on ultrasound.

Although some studies have indicated that age is not important as an independent variable, most suggest that endometrial sampling be considered for all women over a certain age, usually 45 years.

It is also evident that obesity contributes significantly to the risk of premalignant and malignant change in the endometrium, a feature that increases the risk of endometrial neoplasia even in young women in the third and fourth decades of life.

Women with a family history of hereditary non-polyposis colorectal cancer syndrome (Lynch syndrome), have a lifetime risk of endometrial cancer of up to 60%, with mean age at diagnosis of 48-50 years.

Regardless of the clinical guideline recommendations, when AUB is persistent and either unexplained or inadequately treated, endometrial sampling is necessary, and ideally, in association with hysteroscopic visualisation of the uterine cavity.

There are a number of techniques for endometrial sampling, but it is important that an adequate sample be obtained before the patient can be considered at low risk for a malignant neoplasm.

CONFIRMING DIAGNOSIS

Outpatient hysteroscopy is recommended to confirm diagnosis for women with heavy menstrual bleeding if uterine cavity abnormalities are present.

The following patients should be referred to a specialist:

Urgent referral

- Vaginal examination reveals a pelvic mass of uncertain origin
- Anaemia with Hb < 70 g/dl

Routine referral

- Positive screen for a coagulation disorder
- Ultrasound scan suggests submucosal fibroids, polyps or endometrial pathology. This would be an indication for further assessment by hysteroscopy
- There are risk factors for endometrial pathology
- Women with fibroids that are palpable abdominally or the uterus is measured as > 12 cm on ultrasound scan
- If pharmacological treatment has failed, although it is reasonable to try more than one intervention in women under 40 years of age

PHARMACOLOGICAL TREATMENT

Treatment can be commenced without examination where the history suggests heavy menstrual bleeding without structural or histological abnormality.

If ultrasound scan fails to show findings suggestive of endometrial polyps or submucosal leiomyomas, the clinician may initially presume that the structure of the endometrial cavity is normal and start treatment.

Treatment for women with heavy menstrual bleeding who have fibroids < 3 cm in diameter and not impinging on the endometrial cavity is as detailed below.

The following options should be tried first line and can be started in primary care.

Tranexamic acid or NSAIDs

- Tranexamic acid 1 g by mouth three or four times a day on any day judged to be heavy for up to four days (maximum 4 g per day). It can be taken in combination with ibuprofen or mefenamic acid
- Ibuprofen 400 mg three times a day by mouth on any day judged to be heavy OR
- Mefenamic acid 500 mg up to three times a day by mouth on any day judged to be heavy

A review should be carried out after three cycles of treatment.

Hormonal therapies

A recent Cochrane review,[10] covering eight trials with 805 participants, suggested that, if the chance of successful treatment was 3% in women taking placebo, then the combined oral contraceptive pill (COCP) increased this chance to between 12 and 77% in women with unacceptable heavy menstrual bleeding. Minor adverse events, in particular breast pain, were more common with the COCP.

Limited evidence suggested that the COCP and the contraceptive vaginal ring had similar effects. There was insufficient evidence to determine comparative efficacy of combined hormonal contraceptives with NSAIDs, or long course progestogens.

The levonorgestrel intrauterine system (LNG-IUS) was more effective than the COCP in reducing menstrual blood loss; OR 0.21 (95% CI: 0.09-0.48) in two trials with 151 participants; $I^2 = 0\%$; low quality evidence) but it was not clear whether satisfaction with treatment or adverse effects varied according to which treatment was used. The LNG-IUS is a good option for women planning to use this method for at least 12 months.

Long-acting reversible contraceptives or cyclical progestogens can be used on days 5-26.

Depo-Provera 150 mg intramuscularly every 12 weeks can have a prolonged contraceptive effect, so is less suitable for women planning to start a family in the next 12 months. Nexplanon can be helpful in some women. Medroxyprogesterone acetate 2.5-10 mg once daily for 21 days starting on day 5 (counting the first day of the period as day 1) can be used as can norethisterone acetate 5 mg up to three times a day on days 5-26. (Note norethisterone 5 mg three times a day can be used to delay a period if a woman is going away on holiday but carries a risk of venous thromboembolism equivalent to the use of a combined oral contraceptive pill. If a woman has risk factors for venous thromboembolism (family history, a long flight, etc) the additional risk would have to be considered.[11]

There is no evidence that ethamsylate reduces heavy menstrual bleeding.

Ulipristal acetate was temporarily withdrawn following rare but serious cases of liver injury, including hepatic failure requiring liver transplantation, reported worldwide. On 7 August 2018, the MHRA updated its advice that ulipristal acetate (Esmya) may be used for the intermittent treatment of moderate to severe symptoms of »

key points

SELECTED BY

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Heavy menstrual bleeding has been defined as 'excessive menstrual blood loss which interferes with a woman's physical, social, emotional, and/or material quality of life'. Heavy menstrual bleeding affects 25% of women of reproductive age and is estimated to be the fourth most common reason for gynaecological referrals. Each year, 30,000 women undergo surgical treatment for heavy menstrual bleeding in England and Wales.

The International Federation of Gynecology and Obstetrics (FIGO) has classified abnormal uterine bleeding (AUB) according to the acronym PALM-COEIN. The components of the PALM group are structural and defined by imaging or histopathology: Polyp; Adenomyosis; Leiomyoma; Malignancy and hyperplasia. The COEIN group are not structural and include: Coagulopathy; Ovulatory dysfunction; Endometrial disorders; Iatrogenic; and Not otherwise classified.

Women should be asked about pelvic pain which might suggest endometriosis and pressure symptoms which might suggest significant fibroids. Examination is appropriate if there is intermenstrual or postcoital bleeding and, if the woman is actively bleeding, may identify the source of the bleeding. Chlamydia testing should be carried out at the time of examination or as a self-taken swab where examination is not indicated. A urine pregnancy test and full blood count should be performed.

Women should be referred for transvaginal ultrasonography if the uterus is palpable abdominally or if there are associated symptoms of pressure or pelvic pain. Women should be referred, ideally in combination with hysteroscopy, for gynaecological assessment if there is persistent intermenstrual bleeding, persistent irregular bleeding (or risk factors for endometrial pathology including obesity, PCOS and tamoxifen use). Women in whom treatment has failed should also be referred. In addition, most studies suggest that endometrial sampling should be considered for all women over the age of 45 years.

Treatment can be commenced without investigation where the history and examination suggests there is no structural or histological abnormality. Primary care treatment is also appropriate for those with a normal ultrasound or fibroids < 3 cm in diameter which are not impinging on the endometrial cavity. First-line options are tranexamic acid and/or ibuprofen/mefenamic acid. Hormonal options are the COCP or cyclical progestogens. The levonorgestrel intrauterine system is a good option for women planning to use this method for at least 12 months and is more effective than the COCP in reducing menstrual blood loss. Surgical treatment can be considered if pharmacological treatments have not worked.

uterine fibroids in women of reproductive age who are not eligible for surgery.[12]

Each treatment course should not exceed 3 months and should only be repeated after a break in treatment. Monitoring of liver function is required before starting, during and after treatment. It may also be used as a single course of preoperative treatment for moderate to severe symptoms of uterine fibroids. Treatment should be started by a physician experienced in the diagnosis and treatment of uterine fibroids.

Women should be advised to seek urgent medical attention if they develop any symptoms or signs of liver injury (such as unusual tiredness, yellowing of the skin, darkening of the urine, nausea and vomiting) and suspected adverse drug reactions should be reported using the Yellow Card system without delay.

The emergency contraceptive pill ellaOne also contains ulipristal acetate in a single dose of 30 mg. No cases of serious liver injury have been reported with ellaOne since it was authorised in the EU in 2009 and there are no concerns or changes to its use at this time.

SURGERY

Surgery is considered if pharmacological treatments have not worked. The aim is to reduce the period blood loss to an acceptable level and restore quality of life. The options include hysteroscopic removal of polyps and/or fibroids (see figure 1, p 11) or endometrial ablation in women with a uterus < 10 weeks' size, with hysteroscopy before placement of the device. Women should have completed their family as pregnancy is not advised following endometrial ablation. Contraception is still required and one option is the fitting of a Mirena at the time of the procedure.

Treatment options for heavy menstrual bleeding in combination with fibroids > 3 cm diameter include:

- Uterine artery embolisation
- Myomectomy which can be hysteroscopic, vaginal, or abdominal (open or laparoscopic)
- Hysterectomy which can be vaginal, or abdominal (open or laparoscopic) with the option of keeping the cervix and the ovaries should be discussed with the woman

NICE advises that hysterectomy should not be used as a first-line treatment solely for heavy menstrual bleeding. Hysterectomy should be considered only when:

- Other treatment options have failed, are contraindicated or are declined by the woman
- There is a desire for amenorrhoea
- The woman (who has been fully informed) requests it
- The woman no longer wishes to retain her uterus and fertility

Competing interests
Mrs Caroline Overton is a medical educator for Mylan Pharmaceuticals

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Diagnosis and management of premenstrual syndrome

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Diagnosis and management of premenstrual syndrome

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First line	● Exercise (vitamin B6, Vitex agnus castus) ● Cognitive behaviour therapy/mindfulness-based cognitive therapy ● Continuous or luteal phase (days 15-28) low-dose SSRIs (i.e. fluoxetine, paroxetine, sertraline, fluvoxamine, citalopram, escitalopram) or SNRIs (i.e. duloxetine and venlafaxine) ● Combined new generation pill (cyclically or continuously)
Second line	● Oestradiol patches (100-200 mcg) + micronised progesterone (100 mg or 200 mg days 17-28, orally or vaginally) or LNG-IUS 52 mg ● Continuous or luteal phase (days 15-28) high-dose SSRIs
Third line	GnRH analogues + add-back HRT (continuous combined oestrogen + progesterone (e.g. 50-100 mcg oestradiol patches or 2-4 doses of oestradiol gel combined with micronised progesterone 100 mg/day) or tibolone 2.5 mg/day
Fourth line	Surgical treatment ± HRT

FIGURE 1
Treatment algorithm for premenstrual syndrome

How do women present in primary care?

THE TERM PREMENSTRUAL SYNDROME (PMS) REFERS TO A CONSTELLATION OF MOOD AND PHYSICAL symptoms that occur during the luteal phase of the menstrual cycle. Various approaches have been taken to define the syndrome, arising predominantly from the fields of psychiatry and gynaecology (see box 1 and table 1, p16).

The main factor that separates these definitions is the severity of the symptoms required for a diagnosis. However, the National Association for Premenstrual Syndrome suggests that: 'If PMS symptoms affect personal and/or social and/or professional quality of life then this should be regarded as being clinically significant PMS, warranting prompt diagnosis, appropriate recognition, psychological support and evidence-based medical care. Some cases of PMS will also qualify for a premenstrual dysphoric disorder (PMDD) diagnosis, but in non-PMDD cases of severe PMS, symptoms may have an equally, or even more, serious impact on the sufferer'.

How should diagnosis be confirmed?

PRESENTATION

Women can present to primary care with any of the mood and physical symptoms that occur within the spectrum of PMS. Some women give a clear history of onset during the luteal phase of the menstrual cycle, with improvement taking place within a few days after the onset of menses.

However, other women present with fluctuating symptoms without making a connection with their menstrual cycle, and some make a connection where this does not exist. There are no tests for PMS (e.g. blood tests) and diagnosis is dependent on the history.

DIAGNOSIS

Diagnosis of PMS is complicated by a number of conditions with overlapping symptoms. These include generalised anxiety disorder, mood disorders (e.g. bipolar disorder, major depressive disorder, dysthymia), dysmenorrhoea, iatrogenic use of hormonal treatments (e.g. the contraceptive pill), substance misuse, borderline personality disorder, chronic fatigue syndrome, irritable bowel syndrome, and thyroid disease (e.g. hypothyroidism or hyperthyroidism).

The most common conditions that overlap are anxiety and mood disorders, where the symptoms are present all month long. However, differentiation of these, and other, conditions can be very difficult if the physician relies solely on retrospective symptoms, as recall can be unreliable. Therefore, it is considered best practice for PMS symptoms to be prospectively recorded by patients using a symptom diary, e.g. the Daily Record of Severity of Problems (DRSP),[1] see figure 2, p17, for a period of not less than two months. From a practical perspective, some women may find it easier to use app diaries such as Clue and PreMentricS.

What are the evidence-based treatments?

MANAGEMENT

PMS treatment should be considered within a biopsychosocial model. Adopting healthy lifestyle choices, such as regular exercise, is likely to have a beneficial effect on many core PMS symptoms and should be a first-line treatment, see figure 1, above. »

Box 1

Definitions of premenstrual syndrome

The criteria specified by the American Psychiatric Association focus mainly on psychological symptoms. These are defined within DSM-V under the category of premenstrual dysphoric disorder (PMDD).[2] This definition requires that five out of 11 stipulated symptoms (one of which must be from a list of four specific mood symptoms) are present during the luteal phase of the menstrual cycle. The diagnosis excludes exacerbation of another psychiatric disorder (e.g. depression or panic disorder) and requires symptoms to be severe enough to disrupt daily functioning.

The American College of Obstetricians and Gynecologists has focused more equally on psychological and physical symptoms in its definition of premenstrual syndrome (PMS). This specifies that only one out of six specified mood symptoms, and one of four specified physical symptoms, are present. Further, it does not exclude exacerbation of another psychiatric disorder. However, it requires that there must be associated subjective reports of dysfunction.

The World Health Organization focuses predominantly on psychological symptoms. These are defined, under the term premenstrual tension syndrome (PMTS) within the ICD-10. It requires that only one out of nine stipulated mood, or one out of a list of other physical symptoms are present. Further, it does not exclude symptoms caused by the exacerbation of another psychiatric disorder or require subjective reports of dysfunction.

The International Society for Premenstrual Disorders (ISPMD) has defined a core premenstrual disorder (PMD)[3] that does not specify the nature or number of psychological or somatic symptoms required. Instead it focuses on the timing of symptoms (i.e. presenting during the luteal phase, resolving by the end of menstruation, with a symptom-free interval in the follicular phase) with the primary requisite being that premenstrual symptoms cause significant impairment.

Most treatments for PMS are not licensed for this purpose. However, the Royal College of Obstetricians and Gynaecologists has published evidence-based guidelines for the management of PMS (Green-top Guideline No. 48).[4] The options available are summarised below:

Psychological therapy

There is evidence from randomised controlled trials to support the use of mindfulness-based cognitive therapy[5] and cognitive behaviour therapy (CBT)[6] in the treatment of PMS. Where possible women with severe PMS should be routinely considered for psychological therapy. While resources mean this is often not possible, recent studies have supported delivery of CBT in groups, and remotely using internet-based CBT[7] which may increase availability in the longer term.

Pharmacological therapy

Studies support the use of continuous and luteal phase dosing of selective serotonin reuptake inhibitors (SSRIs)[8] and suggest that they should be considered as one of the first-line pharmacological interventions. There is also evidence to support the use of serotonin-noradrenaline reuptake inhibitors (SNRIs).

As with many medications prescribed to women of reproductive age, it is best to discuss the possible, although

Table 1

Diagnostic criteria for premenstrual syndromes

Organisation	Criteria	Diagnostic term	Number of mood and physical symptoms required	Can include the exacerbation of another psychiatric disorder?	Requires significant functional dysfunction?	Prevalence in women of reproductive age
American Psychiatric Association	DSM-V	Premenstrual dysphoric disorder (PMDD)	5/11 symptoms, (one of which must be from a list of four specific mood symptoms)	No	Yes	5%
American College of Obstetricians and Gynecologists	N/A	Premenstrual syndrome (PMS)	1/6 mood symptoms and 1/4 physical symptoms	Yes	Yes	30%
World Health Organization	ICD-10	Premenstrual tension syndrome (PMTS)	1/9 mood symptoms or one physical symptom	Yes	No	80%
International Society for Premenstrual Disorders	N/A	Prementrual disorders (PMD)	Unspecified (may be physical or mood symptoms)	Unspecified	Yes	Unclear

FIGURE 2
Daily Record of Severity of Problems symptom diary[1]

DAILY RECORD OF SEVERITY OF PROBLEMS

Please print and use as many sheets as you need for at least two FULL months of ratings.

Name or Initials _____

Month/Year _____

Each evening note the degree to which you experienced each of the problems listed below. Put an "x" in the box which corresponds to the severity: 1 - not at all, 2 - minimal, 3 - mild, 4 - moderate, 5 - severe, 6 - extreme.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Enter day (Monday-"M", Thursday-"R", etc) >																																
Note spotting by entering "S" >																																
Note menses by entering "M" >																																
Begin rating on correct calendar day >																																
1 Felt depressed, sad, "down" or "blue", or felt hopeless; or felt worthless or guilty	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
2 Felt anxious, tense, "keyed up" or "on edge"	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
3 Had mood swings (i.e. suddenly feeling sad or tearful) or was sensitive to rejection or feelings were easily hurt	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
4 Felt angry or irritable	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
5 Had less interest in usual activities (work, school, friends, hobbies)	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
6 Had difficulty concentrating	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
7 Felt lethargic, tired or fatigued; or had lack of energy	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
8 Had increased appetite or overate; or had cravings for specific foods	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
9 Slept more, took naps, found it hard to get up when intended; or had trouble getting to sleep or staying asleep	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
10 Felt overwhelmed or unable to cope; or felt out of control	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
11 Had breast tenderness, breast swelling, bloated sensation, weight gain, headache, joint or muscle pain, or other physical symptoms	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
At work, school, home or in daily routine, at least one of the problems noted above caused reduction of productivity or inefficiency	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
At least one of the problems noted above caused avoidance of or less participation in hobbies or social activities	6																															
	5																															
	4																															
	3																															
	2																															
	1																															
At least one of the problems noted above interfered with relationships with others	6																															
	5																															
	4																															
	3																															
	2																															
	1																															

key points

SELECTED BY

Dr Chris Barclay
GP with an interest in obstetrics and gynaecology, Suffolk, UK

The term premenstrual syndrome (PMS) refers to a constellation of mood and physical symptoms that occur during the luteal phase of the menstrual cycle. The National Association for Premenstrual Syndrome suggests that: 'If PMS symptoms affect personal and/or social and/or professional quality of life then this should be regarded as being clinically significant PMS.'

Some women give a clear history of onset during the luteal phase of the menstrual cycle, with improvement taking place within a few days after the onset of menses. However, other women present with fluctuating symptoms without making a connection with their menstrual cycle. There are no diagnostic tests for PMS and diagnosis is dependent on the history.

Diagnosis of PMS is complicated by a number of conditions with overlapping symptoms. These include generalised anxiety disorder, mood disorders (e.g. bipolar disorder, major depressive disorder, dysthymia), dysmenorrhoea, iatrogenic use of hormonal treatments (e.g. the contraceptive pill), substance misuse, borderline personality disorder, chronic fatigue syndrome, irritable bowel syndrome, and thyroid disease. The most common conditions that overlap are anxiety and mood disorders, where the symptoms are present all month long. However, differentiation of these, and other, conditions can be very difficult if the physician relies solely on retrospective symptoms, as recall can be unreliable. Therefore, it is considered best practice to use a symptom diary.

PMS treatment should be considered within a biopsychosocial model. Adopting healthy lifestyle choices, such as regular exercise, is likely to have a beneficial effect on many core PMS symptoms and should be a first-line treatment. There is evidence from RCTs for mindfulness-based cognitive therapy and cognitive behaviour therapy in the treatment of PMS. Where possible women with severe PMS should be routinely considered for psychological therapy.

Studies support the use of continuous and luteal phase dosing of SSRIs and suggest that they should be considered as one of the first-line pharmacological interventions. There is also evidence to support the use of SNRIs. The COCP should be considered as a first-line pharmacological intervention when treating some women with PMS. This can be prescribed cyclically, but some women benefit from continuous (i.e. back-to-back) regimens. Currently, the strongest evidence supports the use of new (third) generation COCP preparations.

Women with confirmed PMS who fail to respond to first-line treatments should be referred to secondary care. The ideal multidisciplinary service includes gynaecologists and psychiatrists with a special interest in PMS, and access to other professionals including clinical psychologists/counsellors, dietitians and neurologists.

unproven, association between SSRI/SNRI use and congenital malformations if taken during pregnancy. However, a recent study suggests that SSRI/SNRI exposure during the first trimester is driven by yet to be determined confounding factors.[9] Further, regardless of causation, the absolute risk for septal heart defects is extremely low.[10] In addition, women with PMS are likely to discontinue treatment soon after the first missed period, rather than later in the first trimester, and therefore any putative risk may be further diminished. However, women on continuous or higher-dose treatment should be advised of the risk of discontinuation symptoms if they abruptly stop their treatment.

Hormonal therapies

Progesterone: Treating PMS with progesterone or progestogens is not supported by current evidenced-based studies.[11,12] However, progesterone pessaries or suppositories (e.g. Cyclogest 200-800 mg days 12–14 until the onset of menstruation) remain a licensed treatment for PMS.

The combined oral contraceptive pill (COCP): Studies suggest that the COCP should be considered as a first-line pharmacological intervention when treating some women with PMS. This can be prescribed cyclically, but some women benefit from continuous (i.e. back-to-back) regimens.

Currently, the strongest evidence supports the use of new (third) generation COCP preparations. While it has been suggested that drospirenone-containing COCPs with a shortened hormone-free interval may be particularly effective, the evidence to support this is limited.[13]

It is also important for clinicians to be aware of the reported association between hormonal contraceptives and increased risk of depression in some women[14] and to remain mindful of the risk of venous thrombotic events associated with the COCP in certain women.

Percutaneous oestradiol: Continuous percutaneous bioidentical oestradiol in the form of implants (e.g. 50 mg implant) or transdermal preparations (e.g. 100 mcg patch twice each week or 1 mg gel twice each day) have been reported to be effective in the treatment of physical and psychological symptoms of severe PMS. The dose of oestrogen prescribed is usually enough to suppress ovulation but the contraceptive efficacy is unclear and additional contraceptive measures should be taken.

In women with a uterus it is important to combine continuous oestradiol with cyclical progesterone or progestogens to avoid endometrial hyperplasia. Progestogenic opposition with oral micronised bioidentical progesterone (e.g. Utrogestan 200 mg days 17-28) is recommended as first line as it is probably less likely to cause PMS-like symptoms than other progestogens (e.g. norethisterone acetate).

Vaginal administration of progestogens can be used in women with a poor tolerance of oral treatment (e.g. Utrogestan 200 mg or Cyclogest 200 mg pessaries on days 17-28). Intrauterine administration using a levonorgestrel intrauterine system (LNG-IUS) can also be considered (e.g. Mirena 52 mg). An advantage of this approach is that it provides contraception where needed.

Lower doses/duration of progesterone or the smaller Jaydess 13.5 mg LNG-IUS are being used off label in some specialist centres for women with severe progestogen/progesterone intolerance with ultrasound monitoring of the endometrium. While vaginal and intrauterine approaches can mitigate the reintroduction of PMS-like symptoms, they can still lead to adverse effects in some progestogen-intolerant women, requiring them to be stopped.

Gonadotropin-releasing hormone agonists (GnRHa): In women with severe PMS symptoms GnRHa can be used as a diagnostic tool (e.g. when diagnosis remains unclear after two months of DRSP charting) and/or to treat symptoms when other approaches have failed.

The mechanism of action of GnRHa is to suppress all ovarian steroid production. This approach can lead to a profound improvement of symptoms in some patients with PMS. However, other women are unable to tolerate the effects of 'medical menopause'. Further, due to their effects on bone mineral density (BMD) women, need to be given advice about conservative methods that reduce BMD loss (e.g. exercise, diet and stopping smoking).

Add-back hormone therapy (i.e. continuous combined HRT or tibolone) should also be considered either from the outset or certainly when treatment extends beyond six months and an annual DEXA scan is recommended for women receiving long-term treatment.

Hysterectomy and oophorectomy

In women with gynaecological comorbidities that require hysterectomy, and/or severe PMS where the above approaches have been unsuccessful, hysterectomy with bilateral oophorectomy offers an effective and permanent method of ovulation suppression.

This approach is particularly beneficial for women with progesterone intolerance, as it permits oestrogen replacement without the need for progestogenic opposition. Prior to this approach a preoperative trial of GnRHa is recommended to test the likelihood of success and tolerance to hormonal (i.e. oestrogen ± testosterone) add-back.

Exercise and complementary therapies

There have been studies into various therapies including: physical (exercise, reflexology and acupuncture); vitamins (e.g. B6 and D); minerals (e.g. magnesium and calcium); and herbs (Vitex agnus castus, St John's wort, Ginkgo biloba, saffron, evening primrose oil, and curcumin). Support for these treatment options is limited by small sample sizes, variability in the definition of PMS applied and the high placebo response reported in PMS.

The evidence currently available lends greatest support for exercise and Vitex agnus castus but variability in quality and content of Vitex preparations means that no specific product can be recommended.

REFERRAL

Women with confirmed PMS who fail to respond to first-line treatments should be referred to secondary care.

The ideal multidisciplinary service includes gynaecologists and psychiatrists with a special interest in PMS, and access to other professionals including clinical psychologists/counsellors, dietitians and neurologists.

At present there is only one specialist NHS tertiary referral service that has this complement of professionals, see Useful information box, right. While it is hoped that this type of multidisciplinary clinic will eventually increase in number, in the meantime, it is likely that GPs will continue to coordinate treatment through referral to specific professionals depending on the individual needs of the patient. This may, for example, involve referral to a gynaecologist with a special interest in PMS in cases where consideration of more complex hormonal manipulation is needed (e.g. GnRHa), and to a psychiatrist/clinical psychologist in more severe cases where comorbid mental health symptoms dominate the clinical picture.

Competing interests

Dr Michael Craig has no competing interests. Dr Carrie Sadler has acted in an advisory capacity for Pfizer, Consilient, Gedeon Richter and HFA Healthcare Products, has given talks organised by Bayer, Astellas and Consilient and is a coil trainer for Bayer. Mr Nick Panay has lectured and acted in an advisory capacity for Abbott, Bayer, Besins, Consilient, Fotona, Meda, Mithra, MSD, Mylan, Novo Nordisk, Pfizer, Secur, Shionogi and Theramex.

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Useful information

RCOG guideline
Premenstrual syndrome, management (Green-top Guideline No.48)
https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg48/

National Association for Premenstrual Syndrome
http://www.pms.org.uk

National Female Hormone Clinic
https://www.national.slam.nhs.uk/services/adult-services/femalehormoneclinic

We welcome your feedback

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Optimising the management of patients with COPD

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SPECIAL REPORT

Optimising the management of patients with COPD

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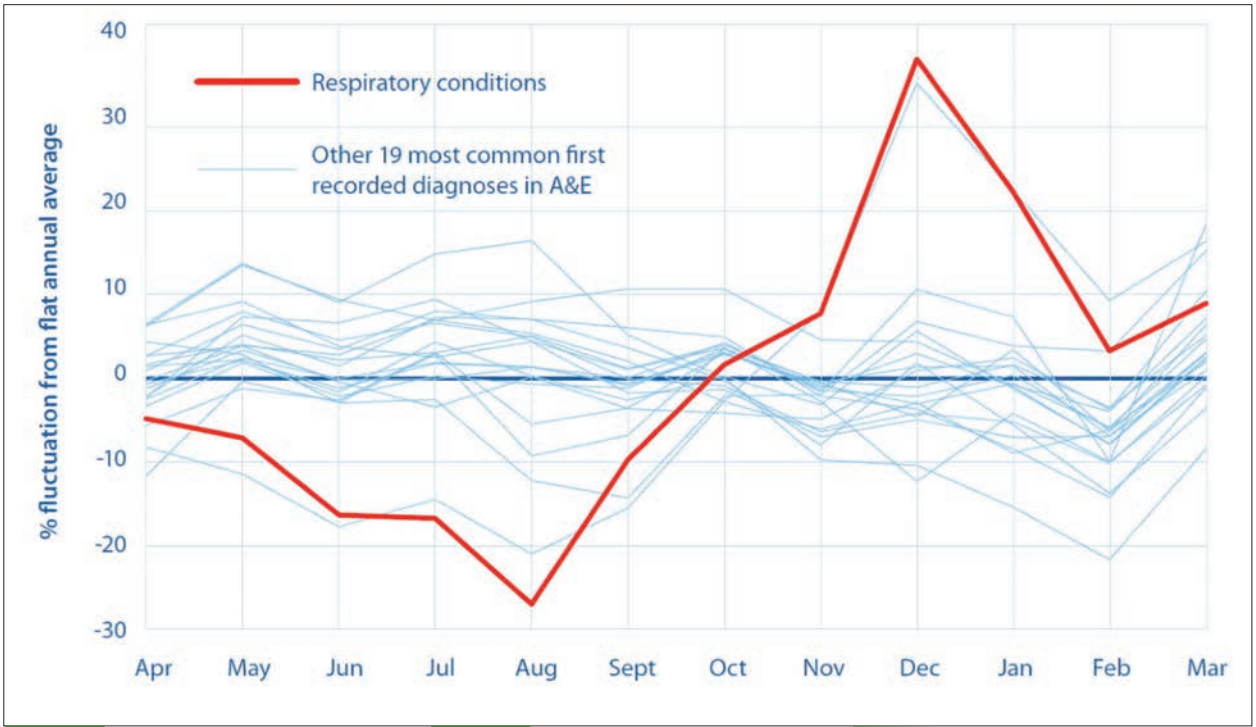


FIGURE 1
Average fluctuation in admissions during the years 2010 to 2017.[3] Data are derived from Hospital Episode Statistics and show average monthly unplanned admissions compared with the flat average for the year

How should diagnosis be confirmed?

THE MORBIDITY AND EXCESS MORTALITY ASSOCIATED WITH LUNG DISEASE HAS BEEN brought into focus by the recent launch of the NHS Long Term Plan by NHS England[1] with the prominent inclusion of respiratory medicine (see box 1, p22).

Many of the recommendations and proposals impact on future care for people with COPD, in particular the organisation of care outside hospital, and align with the recent Taskforce for Lung Health report.[2]

DIAGNOSIS

An estimated 1.2 million people are living with COPD making it the second most common lung condition after asthma.[3] Around 4.5% of people aged over 40 years have been diagnosed with COPD. It is predominantly a condition of older age and most commonly diagnosed in the seventh to eighth decades. The hallmark of COPD diagnosis is opportunistic case finding based on clinical suspicion rather than screening.

COPD should be suspected in an older adult (at least 35 years old but typically more than 45 years old) with symptoms such as breathlessness and wheeze, cough and phlegm, who has an associated risk factor; typically current, or a past history of, cigarette smoking. Other risk factors include passive environmental and occupational exposure to inhalants.

A diagnosis should also be suspected where a person with one or more risk factors develops a lower respiratory tract infection requiring treatment.

COPD is far more common in heroin and crack cocaine smokers and occurs at a younger age. A recent UK screening study shows a COPD prevalence of around 50% in current or former heroin and crack cocaine smokers attending drug centres.[4]

How should exacerbations be managed?

Which patients should be referred?

Diagnosis is made using spirometry in patients with relevant clinical features. Spirometry must be quality assured and performed by an individual who is trained, has ongoing support and supervision and who is doing the test regularly. A diagnosis of COPD should only be based on post-bronchodilator spirometry.

Taking into consideration the NICE asthma diagnostic guidance and current variability in spirometry services, many respiratory specialists believe that initial reversibility testing can be helpful, in particular to highlight asthma where there is reversibility of > 400 ml and where abnormal pre-bronchodilator spirometry normalises with a bronchodilator. Once a diagnosis is confirmed it is not recommended that reversibility is performed again unless there is a specific indication.

Interpretation of most spirometry is straightforward but sometimes it is »

more challenging and needs a clinician experienced in interpretation. Whatever local model is chosen to deliver spirometry that expertise needs to be available.

Some services are increasing specialist involvement in reporting of first (diagnostic) spirometry in order to get the diagnosis right first time. An increasing number of respiratory laboratories are using the lower limit of normal (LLN) to report airflow obstruction. This reduces overdiagnosis of COPD in older individuals and underdiagnosis in younger people (hence improving the chance for early intervention in the latter group) as shown in figure 2, below.

The 2019 international Global Obstructive Lung Disease (GOLD) COPD guideline[6] recommends using a FEV_1/FVC ratio of < 0.7 but specifically caution against diagnosing COPD in someone with a single post-bronchodilator FEV_1/FVC measurement of between 0.6 and 0.7, because of biological variation. Using LLN makes spirometry more complex to interpret than using the traditional fixed cut-off for FEV_1/FVC ratio of 0.7 and supports greater specialist input and oversight.

If an individual is diagnosed with COPD it is appropriate to perform a chest X-ray and a full blood count (for polycythaemia and eosinophil count) as recommended by NICE.[7] At this point it is important to record MRC dyspnoea score, body mass index (BMI) and a measure of quality of life, such as the CAT score shown in figure 3, p23.[8]

In December 2018, NICE updated its 2010 COPD guideline.[7] The vast majority of the recommendations were unchanged or little changed but there were some important updates about treatment. A full review of evidence-based treatment was published in the November 2017 edition of this journal[9] and a detailed review of pulmonary rehabilitation in the January 2018 issue.[10]

Box 1

The NHS Long Term Plan[1]

The Plan includes a pledge to redesign NHS services to reduce pressure on emergency hospital services and to boost out of hospital care. By 2021, there is an aspiration to integrate primary and specialist care systems and improve emergency care so that same day discharge increases from a fifth to a third of admissions. The Plan highlights large variations in zero days inpatient stay between hospitals which provides a clear target for some centres. Because of the high numbers, this will need to include a focus on emergency COPD admissions which is welcome as there is strong evidence that many COPD exacerbations can be managed at home.

Two specific aspects of emergency respiratory care are highlighted – the fact that over the past seven years hospital admissions for lung conditions have risen three times faster than for all cause admissions plus the seasonal nature of respiratory disease with major impact on winter pressure within the NHS,[6] see figure 1, p21.

Other areas highlighted that have particular relevance to COPD services include the recognition that a third of people admitted to hospital with a COPD exacerbation have not been diagnosed, the need for a radical overhaul of diagnostic services and the recognition that expansion of pulmonary rehabilitation could prevent 80,000 hospital admissions over the next ten years.

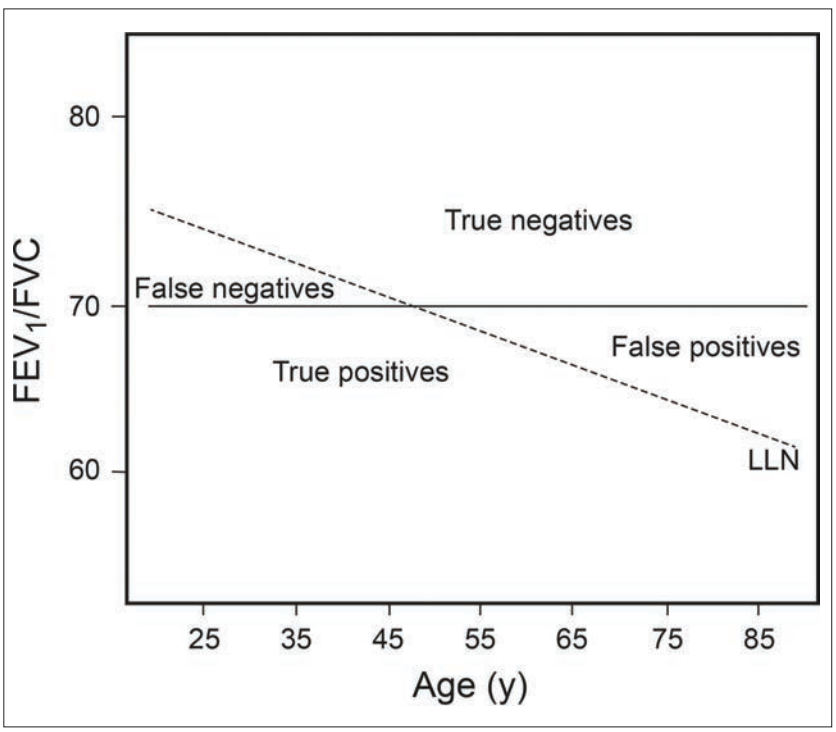


FIGURE 2
The change in predicted FEV_1/FVC with age illustrating underdiagnosis of COPD in younger adults aged less than 50-55 years (false negatives) and overdiagnosis in older adults (false positives)[13]

LLN = lower limit of normal

MANAGEMENT

Antibiotics

In December 2018 NICE also published a guideline specifically on antibiotic prescribing in acute exacerbations of COPD.[11] It recommends five days of treatment using amoxycillin, doxycycline or clarithromycin first and second line.

Antibiotics such as co-amoxiclav, levofloxacin and co-trimoxazole are reserved for specific organisms and circumstances.

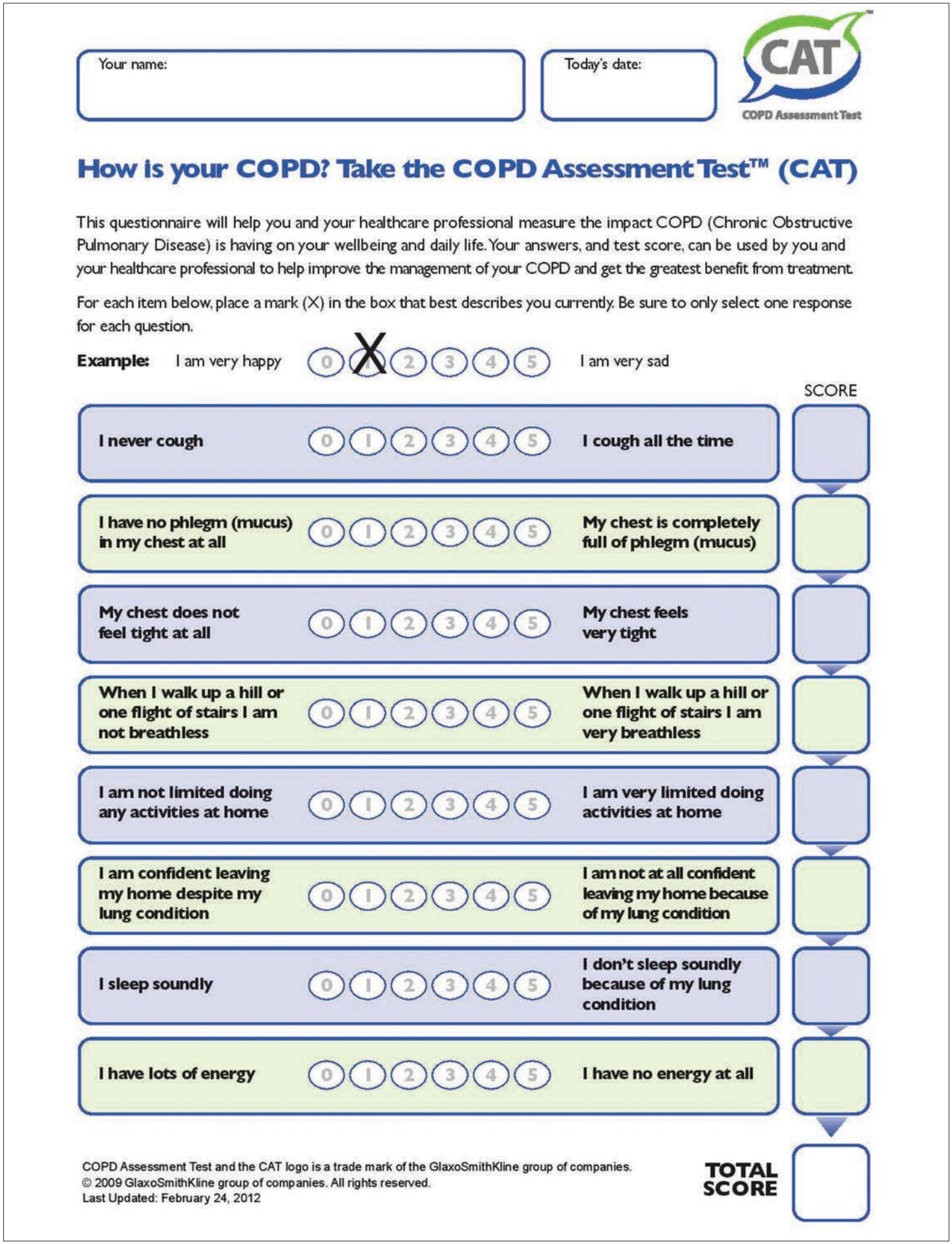
The guideline appropriately advises the use of antibiotics in circumstances where there is clear clinical evidence of an infection based on change in phlegm, in particular sputum colour but also an increase in volume.

It is particularly important that any clinician who prescribes and advises COPD patients about the use of emergency (rescue) packs emphasises that antibiotics are not required at the time of every exacerbation and use should be based on symptoms.

Inhaler technique

Inhaled therapy is the cornerstone of pharmacological treatment for COPD. There is evidence that instruction by a healthcare professional is a key component to an individual administering inhaled therapy correctly and that incorrect use of inhalers, in particular critical errors, are associated

FIGURE 3 The COPD Assessment Test (CAT) is a simple way to measure COPD related quality of life



Your name:

Today's date:

CAT
COPD Assessment Test

How is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional measure the impact COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers, and test score, can be used by you and your healthcare professional to help improve the management of your COPD and get the greatest benefit from treatment.

For each item below, place a mark (X) in the box that best describes you currently. Be sure to only select one response for each question.

Example: I am very happy 0 X 2 3 4 5 I am very sad

			SCORE
I never cough	0 1 2 3 4 5	**I cough all the time**	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5	**My chest is completely full of phlegm (mucus)**	
My chest does not feel tight at all	0 1 2 3 4 5	**My chest feels very tight**	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 5	**When I walk up a hill or one flight of stairs I am very breathless**	
I am not limited doing any activities at home	0 1 2 3 4 5	**I am very limited doing activities at home**	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	**I am not at all confident leaving my home because of my lung condition**	
I sleep soundly	0 1 2 3 4 5	**I don't sleep soundly because of my lung condition**	
I have lots of energy	0 1 2 3 4 5	**I have no energy at all**	
		TOTAL SCORE	

COPD Assessment Test and the CAT logo is a trade mark of the GlaxoSmithKline group of companies.
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Last Updated: February 24, 2012

with more symptoms, poorer disease control, more exacerbations and more hospitalisations in COPD and asthma.[12]

Over the past few years, with a dramatic increase in the number and type of inhalers this has become more challenging and therefore arguably even more important. NICE emphasises that the smallest number of different devices should be prescribed.

Inhaler therapy

The key issue with respect to inhaler therapy in COPD is the use of inhaled corticosteroids (ICS). Unlike asthma, COPD is relatively poorly responsive to ICS and their role is to reduce exacerbation rate; hence, the recommendation for those patients with COPD who have two or more exacerbations per year and/or one or more episodes of hospitalisation.

The introduction of a number of long-acting beta-agonist/long-acting anti-muscarinic (LABA/LAMA) inhalers provides an alternative long-term inhaler option.

NICE has attempted to simplify inhaler prescription into three steps:

First, a short-acting bronchodilator, typically a short-acting beta-agonist (SABA), should be prescribed to all patients with COPD even if they are only used at the time of an exacerbation.

Second, for people with ongoing symptoms (breathlessness) and exacerbations, NICE recommends a LABA/LAMA with the option to use a LABA/ICS in those who have significant asthma. The latter includes a previous secure diagnosis of asthma, a higher blood eosinophil count, diurnal peak flow variation > 20% and substantial (> 400 ml) variation in FEV_1 over time. The lack of a more precise definition for some of these markers of asthma is expected to cause some difficulty during implementation.

Third, if breathlessness and exacerbations continue then use of a LABA/LAMA/ICS combination is appropriate which can be prescribed as a triple combination inhaler. NICE has yet to publish complete guidance concerning triple therapy but this recommendation is a reflection of the current research evidence and GOLD guidelines.

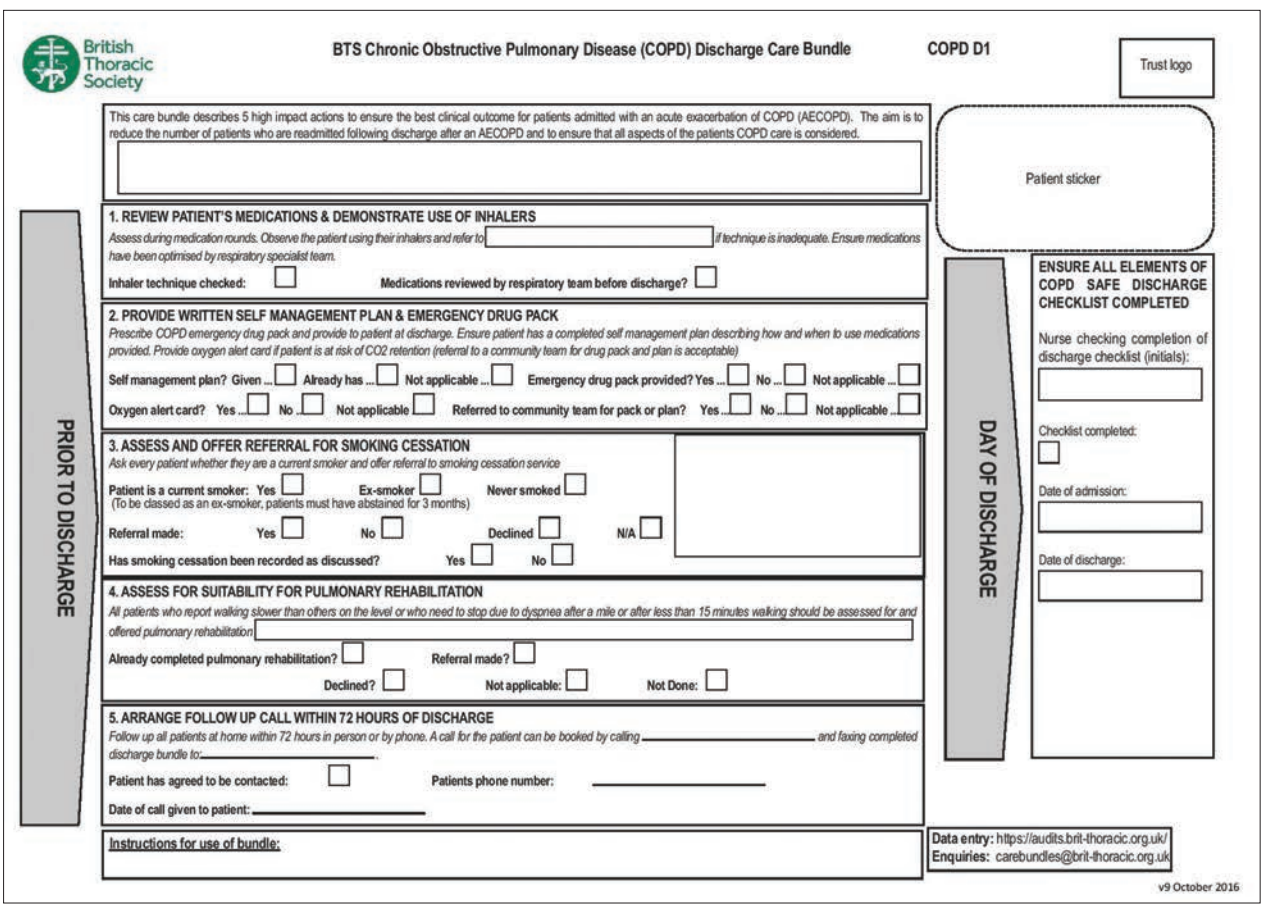
The basis for using ICS in COPD is to reduce exacerbation rate. However, it is necessary to balance increased risk of pneumonia against any benefit seen in reductions in exacerbations and this should be discussed with the individual. It is now established that when patients with COPD have exacerbations and a blood eosinophil > 300 cells/µl they are likely to benefit from ICS and this is recommended by the GOLD guideline.[6] However, it is less clear whether ICS should be prescribed in people with this higher eosinophil count and few exacerbations or how an eosinophil count of < 300 cells/µl should be used to guide treatment.

Oxygen

Long-term oxygen therapy reduces mortality in patients with COPD and chronic hypoxaemia. Ambulatory oxygen has a role in those who can walk further on formal testing using oxygen and are motivated to use it. However, oxygen is a potentially hazardous drug and there have been numerous safety alerts due to fires caused by ignition of oxygen, often related to smoking in the vicinity of oxygen. Relatively recently, a specific risk assessment was incorporated into oxygen assessment to attempt to reduce these risks.

The updated NICE guideline recommends that oxygen should only

FIGURE 4
British Thoracic Society COPD Discharge Care Bundle


British Thoracic Society

BTS Chronic Obstructive Pulmonary Disease (COPD) Discharge Care Bundle COPD D1

Trust logo

This care bundle describes 5 high impact actions to ensure the best clinical outcome for patients admitted with an acute exacerbation of COPD (AECOPD). The aim is to reduce the number of patients who are readmitted following discharge after an AECOPD and to ensure that all aspects of the patients COPD care is considered.

Patient sticker

PRIOR TO DISCHARGE

1. REVIEW PATIENT'S MEDICATIONS & DEMONSTRATE USE OF INHALERS
Assess during medication rounds. Observe the patient using their inhalers and refer to _____ if technique is inadequate. Ensure medications have been optimised by respiratory specialist team.
Inhaler technique checked: ☐ Medications reviewed by respiratory team before discharge? ☐

2. PROVIDE WRITTEN SELF MANAGEMENT PLAN & EMERGENCY DRUG PACK
Prescribe COPD emergency drug pack and provide to patient at discharge. Ensure patient has a completed self management plan describing how and when to use medications provided. Provide oxygen alert card if patient is at risk of CO2 retention (referral to a community team for drug pack and plan is acceptable)
Self management plan? Given ... ☐ Already has ... ☐ Not applicable ... ☐ Emergency drug pack provided? Yes ... ☐ No ... ☐ Not applicable ... ☐
Oxygen alert card? Yes ... ☐ No ... ☐ Not applicable ☐ Referred to community team for pack or plan? Yes ... ☐ No ... ☐ Not applicable ... ☐

3. ASSESS AND OFFER REFERRAL FOR SMOKING CESSATION
Ask every patient whether they are a current smoker and offer referral to smoking cessation service
Patient is a current smoker: Yes ☐ Ex-smoker ☐ Never smoked ☐
(To be classed as an ex-smoker, patients must have abstained for 3 months)
Referral made: Yes ☐ No ☐ Declined ☐ N/A ☐
Has smoking cessation been recorded as discussed? Yes ☐ No ☐

4. ASSESS FOR SUITABILITY FOR PULMONARY REHABILITATION
All patients who report walking slower than others on the level or who need to stop due to dyspnea after a mile or after less than 15 minutes walking should be assessed for and offered pulmonary rehabilitation _____
Already completed pulmonary rehabilitation? ☐ Referral made? ☐
Declined? ☐ Not applicable: ☐ Not Done: ☐

5. ARRANGE FOLLOW UP CALL WITHIN 72 HOURS OF DISCHARGE
Follow up all patients at home within 72 hours in person or by phone. A call for the patient can be booked by calling _____ and faxing completed discharge bundle to: _____.
Patient has agreed to be contacted: ☐ Patients phone number: _____
Date of call given to patient: _____

DAY OF DISCHARGE

ENSURE ALL ELEMENTS OF COPD SAFE DISCHARGE CHECKLIST COMPLETED
Nurse checking completion of discharge checklist (initials):
Checklist completed: ☐
Date of admission:
Date of discharge:

Instructions for use of bundle:

Data entry: https://audits.brit-thoracic.org.uk/
Enquiries: carebundles@brit-thoracic.org.uk

v9 October 2016

be prescribed to patients with COPD who do not smoke; a significant change from previous practice where it was often prescribed to smokers after a risk assessment.

Many COPD specialists are strongly opposed to this recommendation and the impact of this recent change is still far from clear. There are many other conditions where oxygen can be prescribed where this recommendation does not apply.

DISCHARGE CARE BUNDLES

The Best Practice Tariff (BPT) for COPD is payable by clinical commissioning groups to hospitals where specific measures concerning hospital COPD care are met. Hospitals have to submit details of every COPD hospitalisation to the National COPD Audit who report outcomes on which BPT payment is determined. The measures chosen are the proportion of people seen by a respiratory specialist within 24 hours of admission and use of a discharge care bundle; an example is shown in figure 4, opposite.

Fundamentally, this process is about delivering evidence-based interventions which are of proven benefit and is an outstanding example of using metrics to drive care quality improvement.

Previous publications on discharge bundles suggest an impact on COPD readmission[14] and improvement in care quality.[15] COPD discharge bundles emphasise checking and correcting inhaler technique as discussed earlier and promotion of self-management. The latter will not be successfully delivered by all, or perhaps even a majority of, patients with COPD but where successful it has a significant benefit including reducing rate of future hospitalisation.[16]

REFERRAL FOR SPECIALIST REVIEW

There are a variety of reasons why specialist review might be sought. First, it is appropriate if there is diagnostic uncertainty. This can include situations where there is a disconnect between physiology (spirometry) and symptoms or where multiple conditions causing similar symptoms may overlap and it is unclear what treatment is best, for example, a patient with regular phlegm production where a diagnosis of bronchiectasis is being considered.

Second, referral is appropriate where certain treatments are being considered such as lung volume reduction, prescription of oxygen therapy and transplantation.

Finally, individuals who have, or are suspected of having, alpha-1-antitrypsin deficiency are likely to benefit from specialist input. Table 1, below, lists some of the potential reasons for seeking specialist input recommended in the 2018 NICE guideline.[7] However, some of the other recommendations for referral suggested by NICE might be considered contentious by specialists (e.g. referral for consideration of long-term low-dose steroids) and few would consider specialist input necessary for referral for pulmonary rehabilitation.

IMPROVING OUTCOMES

The optimum way to improve COPD outcomes is to ensure that the diagnosis is made correctly and that patients are reviewed, at least annually, by a clinician trained to manage COPD.

Support with smoking cessation, delivery of pneumoccocal and annual influenza vaccination, pulmonary rehabilitation and provision of disease specific information to promote self-management are also key.

Optimisation of pharmacological therapy and management of comorbidity, in particular anxiety and depression, are vital. NICE recommends consideration of a cognitive behavioural component in the patient's self-management plan to »

Table 1

Indications for referral for specialist review in patients with COPD[7]

Diagnostic uncertainty	To confirm diagnosis
The individual requests a second opinion	To confirm diagnosis
Alternative diagnosis such as dysfunctional breathing	To exclude other diagnoses and assess the impact of multiple conditions
Symptoms disproportionate to lung function	To exclude other diagnoses and assess the impact of multiple conditions
Frequent lower respiratory tract infections and regular phlegm producer	To confirm or exclude bronchiectasis
Haemoptysis	To confirm or exclude other diagnoses (lung cancer, tuberculosis etc)
Assessment for oxygen including onset of cor pulmonale	Assessment for additional treatment
Assessment for lung volume reduction procedure	Assessment for additional treatment
Assessment for lung transplantation	Assessment for additional treatment
Rapid decline in lung function	Need to assess and attempt to arrest decline
Alpha-1-antitrypsin deficiency or COPD diagnosed before 40 years	For genetic counselling, potential sub-specialist national centre review and ongoing monitoring

key points

SELECTED BY

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An estimated 1.2 million people are living with chronic obstructive pulmonary disease (COPD) making it the second most common lung condition after asthma. Around 4.5% of people aged over 40 years have been diagnosed with COPD. It is predominantly a condition of older age and is most commonly diagnosed in the seventh to eighth decades.

COPD should be suspected in an older adult (at least 35 years old but typically more than 45 years old) who presents with symptoms such as breathlessness, wheeze, cough and sputum production and has one or more risk factors, typically current, or a past history of, cigarette smoking. A diagnosis should also be suspected when an individual with a risk factor develops a lower respiratory tract infection requiring treatment. COPD is far more common in smokers of heroin and crack cocaine, in whom it occurs at a younger age.

Diagnosis is made using post-bronchodilator spirometry in patients with relevant clinical features. An FEV_1/FVC ratio below 0.7 confirms the presence of persistent airflow limitation. However, the 2019 GOLD COPD guideline cautions against diagnosing COPD on the basis of a single post-bronchodilator FEV_1/FVC measurement of between 0.6 and 0.7 because of biological variation. A further problem is that use of a fixed FEV_1/FVC ratio leads to overdiagnosis of COPD in older individuals and underdiagnosis in younger people so missing the chance for early intervention. Hence an increasing number of respiratory laboratories are using the lower limit of normal to report airflow obstruction, but this is more complex to interpret.

A recent NICE guideline recommends that antibiotics should only be used for COPD exacerbations where there is clear clinical evidence of an infection, in particular a change in sputum colour but also an increase in volume. Amoxicillin, doxycycline and clarithromycin are first- and second-choice antibiotics and should be prescribed for five days. Antibiotics such as co-amoxiclav, levofloxacin and co-trimoxazole are reserved for specific organisms and circumstances. It is particularly important that any clinician who prescribes and advises COPD patients about the use of emergency (rescue) packs should emphasise that antibiotics are not required at the time of every exacerbation and use should be based on symptoms.

Referral for specialist review is appropriate where there is diagnostic uncertainty. This can include situations where there is a disconnect between physiology (spirometry) and symptoms, where multiple conditions causing similar symptoms may overlap and where regular sputum production suggests a diagnosis of bronchiectasis. Referral is appropriate where certain treatments are being considered such as lung volume reduction, prescription of oxygen therapy and transplantation. Individuals who have, or are suspected of having, alpha-1-antitrypsin deficiency should also be referred.

help manage anxiety and cope with breathlessness.

Furthermore, better organisation of care including joint working between primary and secondary care and use of admission prevention and early discharge schemes are important. Patients who are admitted should have early respiratory specialist review and a discharge care bundle.

Competing interests: None

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Useful information

British Thoracic Society
www.brit-thoracic.org.uk

British Lung Foundation
www.blf.org.uk

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CPD prompt and framework
Journal article

The Practitioner

Show impact
- Collection of data
- Practice audit to show improved care

- Case studies
- Implement a protocol
- Prescribing review
- Educational meetings
- Significant event audit
- Practice meeting
- Implement a new service
- Take on new role
- Significant event audits
- Change with feedback from patients and/or colleagues

Further options for sessional GPs
- Self audit of own practice:
  - Record-keeping
  - Referrals for investigations
  - Prospective condition based reviews
  - Random case analysis with colleagues
  - Review of telephone triage outcomes
- Update drugs in emergency bag

Time credits

Impact credits
Quick impact

Later impact

Later impact=

Total credits

Title and reference

Date

What have you learned?

How will this change your practice?

What research/actions will you take that will have further impact on practice?

Draft of your action plan

CPD prompt and framework
Case review

The Practitioner

Clinical case for review

Reason for selection of the case for reflection

Evidence base used to reflect on your practice

What went well?

What could have been done better?

What were the causes of the condition/event?

What learning needs arise from this case for (a) you and (b) for the practice?

Summary of any discussion of the case with peers

What changes/actions have resulted to your personal practice?

What changes/actions have resulted to the practice?

How/when will you review these changes?

Time credits	Impact credits	Total credits

CPD prompt and framework
Audit

The Practitioner

Title

Reason for the audit (target to improve or implement)

Define criterion (or criteria) to be met

Set the standard and its basis

Plan the audit process and any involvement of peers

Time credits **Impact credits** **Total credits**

Reflection on Table 1 results

What changes were implemented to improve results?

Reflection on Table 2 results and review with peers

Table 1

Results of data 1 analysis **Date of data collection:**

Criterion	Number sampled	Achievement (%)	Standard (%)
A			
B			
C			

Table 2

Results of data 1 and data 2 analyses **Date of data collection:**

Criterion	Number sampled Data 1	Achievement (%) Data 1	Number sampled Data 2	Achievement (%) Data 2	Standard (%)
A					
B					
C					