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DESKTOP HELPER

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Severe mental illness, tobacco dependence and chronic obstructive pulmonary disease (COPD)

About one in a hundred people cared for in primary care might suffer from severe mental illness.[1] The prevalence of tobacco dependence and risk of COPD alongside other non-communicable diseases such as heart disease and lung cancer are substantially higher in patients with SMI in primary care practices and mental health services compared to the general population, which forms both a huge health burden and a significant opportunity for improvement of COPD care.

This desktop helper aims to assist general primary care teams and those in mental health services providing general medical care in assessing, diagnosing and treating patients with severe mental illness with tobacco dependence and COPD. This helper can be read in conjunction with our desktop helpers on Helping people quit and COPD and associated mental health problems.

SEVERE MENTAL ILLNESS AND PHYSICAL HEALTH INEQUALITIES

Severe mental illness (SMI) includes schizophrenia (SZ), bipolar disorder (BD) and affective disorder with psychosis.[2-5] SMI causes serious functional impairment that limits life activities and is related to worse health outcomes compared to those without SMI. The diagnosis is based on the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), and is often made by secondary care psychiatrists. One of the major causes of COPD continues to be tobacco smoking.[6] There is a higher prevalence of tobacco smoking and regular exposure to other smoked drugs such as cannabis or heroin, which also may cause COPD/ emphysema, in people living with SMI.

It is important for primary care physicians to recognize SMI in patients in order to identify potential related comorbidity, because approximately 1 in 4 people with SMI who smoke may have undiagnosed COPD.[2] Also, the prevalence of COPD is higher in patients with SMI and they may die up to 20 years earlier than the general population and are 3-9 times more likely to die from COPD.[7] Unfortunately, COPD is also often missed in this patient group due to a later age of diagnosis compared to concurrent SMI (their early twenties compared to early forties, respectively[1]) and underreporting or minimisation of symptoms. Regular lung function testing throughout life is therefore warranted in people with SMI who are tobacco dependent.

Therefore, there is a substantial opportunity to make measurable improvements in health outcomes and equity by diagnosing and treating COPD in people with SMI specifically by focusing on diagnosing and treating their tobacco dependence.

Recommended practical action for diagnosing and treating COPD in people with SMI

DIAGNOSIS

1. Take a smoking history to understand the risk from cumulative exposure to tobacco and other drugs.
2. Identify symptoms suggestive of COPD using simple clinical scales such as the MRC breathlessness scale, combined with observation where necessary.[19]
3. Be aware that this patient group may be less likely to report and identify symptoms such as breathlessness and may be hypoxic without reporting breathlessness. This is why it is useful to use clinical measures of breathlessness.
4. Have a low threshold for performing a lung function test through an expiratory spirometry, or if a lung function test is not at hand, use a portable micro-spirometer which may be easier and indicate a diagnosis of COPD.[20]
5. Have and use a pulse oximeter because patients with SMI may report fewer symptoms / be less aware that they are unwell; take action on low readings. The COPD-phenotype in patients with significant smoked drug history may be more that of emphysema with relatively preserved spirometry and drop in blood oxygen saturations on exertion.[21]
6. The person may have other reasons for low blood oxygen saturation levels including obesity. Therefore, measure BMI because obesity is a common comorbidity of SMI.[22]

INTERVENTION

7. Explain what COPD is ….'smoker's lung' and then use an evidence-based non-judgmental approach to offering treatment for tobacco dependence as the key treatment [see Helping people quit desktop helper and here for more detailed information on first-line pharmacotherapy for treating tobacco dependence.
8. If possible, measure CO-levels as this may also aid in motivating the smoker to quit.[23]
9. In people with COPD explain about and offer vaccinations. Recommended vaccines include flu, pneumococcal and COVID-19, as well as Tdap (pertussis, tetanus and diphtheria) if not vaccinated in adolescence, and shingles.[6]
10. Work with the mental health team who knows the patient on a shared agenda to ensure access to treatment for their tobacco dependence, vaccination and to enable those patients reporting breathlessness to attend pulmonary rehabilitation (see our desktop helper on PR to help explain it, as well as our video on how we breathe, and the Breathing Thinking Functioning model explained in our desktop helper.).
11. Cost is a significant factor that prevents patients from using these helpful interventions. Help improve access to these for free, either by signposting to a free service or advocating for your health service to provide this.
12. When collaborating with the mental health team on treating tobacco dependence, it may be helpful to address any potential myths about smoking within mental health services. Educating mental health professionals and addressing unhelpful views such as "smoking is the only pleasure our patients have", "smoking helps to reduce patients' agitation", "we shouldn't be telling patients what to do", "banning smoking in inpatient settings is against patients' human rights" is important because these views have all been demonstrated to be clinically and legally incorrect.
13. Do not start inhalers without a full respiratory assessment, or without a diagnosis – if new breathlessness is reported, order a chest X-ray as there could be other causes including lung cancer/heart failure.
14. Include deaths in people with serious mental illness under the age of 75 in reviews of adverse incidents.to learn more as an integrated system about missed opportunities to preserve and extend life.

◀ TOBACCO AND SMI

Smoking tobacco is the main preventable risk factor for premature mortality in people with SMI and remains a serious problem. Despite a downward trend in global smoking prevalence,[2-4] people with SMI continue to smoke up to three times more than the general population and overall tend to be more nicotine dependent. Historically, they are less likely to be diagnosed with tobacco dependence and/or offered treatment and consequently have a higher risk of morbidity and mortality.[2-4,8] Left untreated, this may lead to premature death and avoidable morbidity.[8-11] **This creates a significant opportunity to improve health outcomes and equity.**

Given that two out of three people in the general population who smoke will die from smoking-related causes, this presents a significant opportunity.[12,13-14] In patients with SMI, it is sensible to prioritise tobacco dependence assessment and treating the dependence.[15] Studies demonstrate that people with SMI who smoke are motivated to quit, which is achievable with evidence-based approaches but these are often not offered or affordable out of pocket.[16] Yet people with SMI who smoke and manage to quit show statistically improved health outcomes compared to before cessation.[17,18]

MAIN TREATMENTS

The main cessation drugs approved by the WHO, namely varenicline, bupropion and nicotine replacement therapy, are all safe to use in people with SMI. Click here for the Helping people quit desktop helper for a more detailed stepwise approach and here for more information on the pharmacotherapy discussed below.

Varenicline

Varenicline is a licenced medication that acts as a dual agonist and antagonist at the nicotinic receptor in the brain. It reduces withdrawal and reduces the dopamine reward effects of smoking. Note there are currently supply issues in some countries. Check the local situation and availability of generic varenicline as this drug can prove to be of great value for this patient population. It is advised to offer NRT with it to provide the additional nicotine during the escalation phase of varenicline.

Cytisine

Cytisine is a partial agonist of the nicotine receptor, similar to varenicline. It has a strong evidence base including randomised controlled trials and meta-analyses confirming its efficacy against placebo, non-inferiority (and probably superiority) to NRT and non-inferiority to varenicline. It is now licensed in a number of countries. It is a 25-day course starting at 6 tablets per day and reducing through the course to two tablets. It is naturally occurring, derived from plants, and consequently attractive to patients who would prefer a 'natural' product. It is not yet on the WHO Essential Medicines List but in the absence of varenicline, it is an important option.

Nicotine replacement therapy (NRT)

NRT is to avoid relapse to smoking, prescribe both long (patch)- and short (gum, inhalator, spray)- acting to support withdrawal and address the urge to smoke. In case of poor dentition, which is not uncommon in people with SMI, gum can be inappropriate and NRT via inhalator or mouth spray should be considered.

For a detailed guideline for first-line pharmacotherapy for treating tobacco dependence please refer to the First line pharmacotherapy for smoking cessation table.[2]

Buproprion

Please refer to your local guidelines for prescribing buproprion as in some countries ▶

Tips for effective communication on tobacco dependence with patients with SMI

Consider taking a motivational approach, e.g. with OARS questions and explain the Breathing-Thinking-Functioning model to guide your conversation. Read more about this model and non-pharmacological interventions in the IPCRG COPD and mental health desktop helper.

Ask about tobacco use

- Do you smoke tobacco or use other tobacco products? [no, yes, given up – how long ago – more than 3 months = ex-smoker, under 3 months = current smoker]
- How many cigarettes per day? [note 1 pack-year = 20 cigarettes smoked daily for one year; pack years = years of smoking x packs 1 pack = 20 cigs]

Advise about the harms and what support is available

- Tobacco is really addictive – more addictive than heroin, but we can help you come off it.
- If you smoke, you are likely to get COPD/emphysema/smokers' lung, which is very harmful for your health and life.
- If you stop smoking it will improve your mental health: it leads to reduced depression, anxiety and stress and improved mood and quality of life.[4]
- It may help you reduce the dosage of anti-psychotic medication.[24] Smoking decreases the effects of antipsychotic (and other psychiatric) medications, such as clozapine, olanzapine and risperidone. Because of this, your doctor might have to increase your medication dose to ensure that you are getting the recommended amount of medication. Quitting may lead to your doctor prescribing less medication with the same results.[24]
- You'll have more cash to spend on other things, and you are more likely to earn a higher income.[25]
- You are likely to live longer and you have a better chance to avoid lung and other cancers.
- Smoking heroin, cocaine or cannabis can also cause emphysema; quitting tobacco smoking can increase your confidence to quit smoking these substances too and increase your success in staying away from all substances.[26]
- The other things we can do to help your health are to give you a flu vaccination, and if you have COPD, a vaccination against pneumonia too.

These tips can be helpful if the person wants help

- Withdrawal can make you feel bad, so it's important we treat your withdrawal and prevent cravings.
- Be aware you may have mood swings, have poor concentration or feel irritable as the nicotine withdraws from your body. These will stop; ask family and friends to look out for you and do not worry: these are not new mental health problems, merely adverse effects of quitting smoking.
- Nicotine replacement therapy (NRT) patches can help you deal with the withdrawal symptoms [see Helping people quit desktop helper].
- Nicotine inhalators or vaping can also help with the "hit" your body craves ('urge') [see table 2].
- Varenicline is a 12-week treatment with tablets to help you quit smoking recommended by the World Health Organization. You start taking varenicline when you are still smoking and will set a date to quit smoking approximately 1-2 weeks after starting treatment with varenicline [see *]
- Cytisine is a 25-day treatment to help you quit smoking. You start taking 6 tablets the first week and gradually reduce the dose. You will notice that your anxiety may rapidly decrease.

If they are interested in making a quit attempt in the future

- It may not be the right time for you to come off it now, but we will ask you when we next see you too.

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* There is extensive experience with varenicline. Yet the use and uptake of varenicline is relatively low in mental health services. This is partly due to clinicians' lack of knowledge/expertise but may also relate to the early concerns raised regarding the potential of varenicline to increase suicidality in SMI, which have since been disproven.[20] Unfortunately, in 2023, there are supply problems with varenicline worldwide, so check with your HCP if varenicline is a feasible therapy to help you quit smoking or whether there is an alternative.

Table 1: Therapeutic approaches to smoking cessation

Intervention	Number in a 100 likely to quit	Difference compared to no intervention	Strength of evidence
Unassisted	6		High
Varenicline	14 (range 12-16)	8 (range 6-10)	High
Cytisine	13 (10-18)	7 (4-12)	High
Combination NRT patch and fast acting NRT	Estimated as similar to cytisine and varenicline	Estimated as similar to cytisine and varenicline	Estimate
Nicotine patch	8 (7-9)	2 (1-3)	High
Fast acting NRT	9 (8-9)	3 (2-3)	High
Nicotine EC	14 (10-19)	8 (4-13)	High
Bupropion	9 (8-10)	3 (2-4)	High
Nicotine tapering	7 (6-8)	1 (0-2)	Low

Adapted from Lindson N, *et al*. Pharmacological and electronic cigarette interventions for smoking cessation in adults, Cochrane. 2023[27]

Table 2: Coping with symptoms of withdrawal

Symptoms	What's happening	How to cope
Intense desire to smoke	Brain missing the nicotine fix	Remember this will pass in a few weeks
Coughing	Lungs are clearing of tar	Will improve quickly, warm drinks can help
Hunger	Metabolism is changing, food tastes better since quitting	Eat fruit and vegetables, chew sugarfree gum and drink lots of water
Constipation and diarrhoea	Body returning to normal (will settle down)	Drink lots of water, eat fresh fruit and vegetables, exercise. If persistent: try over the counter products or see HCP
Trouble sleeping	Due to nicotine leaving the body	Lasts about 2-3 weeks, cut down on tea/coffee, get more fresh air and exercise
Dizziness	More oxygen to the brain, less carbon monoxide	Will pass in a few days
Mood swings, poor concentration, irritability	Signs of nicotine withdrawal (will pass)	Warn family and friends, ask for support.

For more information please refer to **Helping people quit desktop helper**

this is not a first line of treatment anymore. For some countries, buproprion is still considered standard-of-care for helping people quit tobacco smoking, but prescribers should be aware of the additional monitoring that is required by the HCP.

Nicotine electronic cigarettes (e-cigs)

E-cigs are likely to help people with SMI quit smoking and are usually used for a period of approximately six months. These may work better than NRT, non-nicotine e-cigarettes, no support or only behavioural support. However, they are not risk free. More studies are needed to provide clear evidence of their effects.[9,20]

Behavioural support

Behavioural support through motivational interviewing and cognitive behavioural therapy (CBT) are commonly used in people with SMI. CBT combined with pharmacotherapy is more effective than just CBT. [5,28,30-33]

Drug interactions between tobacco and SMI medication

Tobacco use has an impact on the metabolism of other antipsychotic medications such as clozapine, olanzapine and risperidone, which may affect the doses needed to reach therapeutic blood levels and subsequently their effectiveness. However, while it is important to consider and address possible drug interactions the main message is to treat the tobacco dependence. People using some anti-psychotic medications who quit tobacco smoking may also able to reduce their dosage.[24] Modify the dosage of clozapine if the patient stops smoking.[34]

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Note: we have mainly used the term "treating tobacco dependence" to recognise that it is a treatable disease in itself. However, we understand that some colleagues may use the term "smoking cessation". We've tried to be consistent in our language. The word "smoking" remains important, and in this document we focus on tobacco smoking rather than on other forms of tobacco use such as chewed tobacco.

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