Medical management of inpatients with tobacco dependency

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SUMMARY OF KEY CLINICAL PRACTICE POINTS

Building block 1: screen for tobacco dependence

- Ask every patient if they smoke
- Record 'tobacco dependency' as an active disease in the medical history
- Ensure any electronic systems for recording smoking status and supporting referral to the specialist tobacco dependency team are completed

Building block 2: advise on the role of nicotine

- Nicotine drives the dependency to tobacco but is NOT the cause of the harms of smoking
- The harms of smoking come from thousands of toxic chemicals produced when tobacco is burnt to create smoke
- Keeping these toxic chemicals out of the body during the hospital admission will help acutely unwell patients recover more quickly
- Nicotine withdrawal can be very unpleasant, and it is important to provide nicotine in safe, alternative ways to help alleviate this
- Being smoke-free does not have to mean being nicotine-free during a hospital admission or after discharge from hospital

Building block 3: initiate combination nicotine replacement therapy (NRT) as soon as possible

- Use a Rapid Inpatient NRT Prescribing Protocol and prescribe a 25 mg/16hour nicotine patch plus a fast-acting nicotine product (inhalator, lozenge, mouth spray)
- The most serious risk of relapsing back to smoking is prescribing an insufficient dose of NRT and not adequately addressing the patient's withdrawal symptoms and urges to smoke

Building block 4: complete a referral to an on-site tobacco dependency advisor (TDA)

- Refer all patients with tobacco dependence to the TDA team unless they opt out or ensure automated referral processes to the TDA team when the patient is recorded as tobacco dependent, allowing them to opt out at first approach by the TDA
- Advise on the benefits of working with specialist tobacco dependency advisors
- If no on-site team is available, complete an automated onward referral to local community services to provide ongoing treatment & support after discharge

Building block 5: provide accurate and consistent information on Vaping

- Nicotine vapes deliver high dose fast-acting nicotine which can help to alleviate withdrawal and urges to smoke
- Vaping is an effective tool in the treatment for tobacco dependency and can be used to support patients during a hospital admission and to help achieve long term abstinence
- When using nicotine vapes as part of their tobacco dependency treatment plan, inpatients should be advised to switch entirely from smoking to vaping (and NRT) to maximise the harm reduction, both during the admission and after discharge
- If provided in the inpatient setting, nicotine vapes should be used alongside combination NRT as patients may not be able to use the vape at certain times or in certain environments (eg, the internal hospital building)
- Vaping is more likely to be effective when provided alongside behaviour change support from a TDA during the hospital admission and after discharge
- Vaping is not risk free. Patients that use vaping as part of their tobacco dependency treatment plan should be advised to reduce their vape usage at the appropriate time and ultimately to stop vaping, when there is minimal risk of a relapse to smoking
- People who do not smoke, should not vape. Vapes should not be used by any patients under 18 years of age or patients who do not smoke
- Inform patients who use nicotine vapes as part of their tobacco dependency treatment plan that vaping products are regulated under Tobacco and Related Product Regulations 2016 (TRPR). Adverse events related to vape products need to be reported to the Medicines and Healthcare products Regulatory Agency (MHRA) and that vaping products should only be purchased from reputable sources. Additional information on reputable sources can be sought from local government stop smoking services
- From an environmental perspective, avoid single-use products
- Vapes should not be used when using home oxygen therapy

Building block 6: discuss, offer and prescribe nicotine analogue medications

- ► Nicotine analogue medications (varenicline, cytisine) are effective treatments for tobacco dependency and can be discussed and commenced at the point of admission or during the admission
- ► Combination therapies (eg, NRT and nicotine analogues) are as effective if not more effective than single therapies and support abstinence in the unique environment of the inpatient setting (NRT provides additional nicotine needed during the escalation phase of varenicline during a smoke-free admission)

SCOPE

This Clinical Statement provides evidenced-based, practical advice for hospital clinicians to identify, initiate treatment and ensure specialist care for adult inpatients with a dependency to tobacco. By following the framework set out below, hospital clinicians can ensure optimal patient outcomes by:

- helping to alleviate withdrawal and urges to smoke for inpatients
- facilitating smoke-free hospital admissions
- referring for specialist support to help change deeply engrained smoking behaviours and start many patients on the journey to achieving long term abstinence from tobacco

While the interventions and pharmacotherapy used in hospital are similar to those in community settings or other outpatient settings, the focus of this Clinical Statement is **inpatients** in the hospital setting. An inpatient admission is a unique situation that represents a 'teachable moment',[1] an opportunity for abstinence in an environment away from normal smoking behaviours and a focused need for treatment to help alleviate withdrawal and urges to smoke within a smoke-free environment. This unique situation necessitates a different approach to treating tobacco dependency and a new framework to meet the needs of this specific patient population. This Clinical Statement has been written to address this need. The harms of smoking are extensive and well-described elsewhere; therefore, they are not covered within the Clinical Statement. A key reference that summarises the harms of smoking tobacco in detail, for any reader seeking this information, is the Royal College of Physicians' (RCP) publication 'Hiding in Plain Sight: Treating tobacco dependency in the NHS'.[2]

This Clinical Statement has been written as a concise and practical guide, suitable for all hospital clinicians to read and implement into their daily practice immediately and easily. It is a step-by-step guide that begins at the moment of first assessment. The speed of action is also important, especially in relation to the initiation of nicotine replacement therapy (NRT), as withdrawal can begin within the first 30 min of arrival in hospital.

The Clinical Statement Group (CSG) has developed a framework of 'building blocks' to 'build' the optimal treatment plan for tobacco dependent patients where as many building blocks as possible are added to a patient's treatment and care. No single building block is more important than another, and all clinicians should aim to address every building block as part of admitting a patient. While there may be some overlap with the interventions discussed and delivered by hospital-based tobacco dependency advisors (TDAs), it is critical that admitting clinicians complete this building block framework as part of an admission. This will ensure the optimal mitigation of withdrawal and urges to smoke prior to a specialist assessment by a TDA and maximise the chance of a smoke-free admission as well as long-term improved outcomes. On hospital discharge, the transfer of care to community services should be seamless, so that patients can continue their tobacco dependency treatment plan to completion and ensure that the outcomes of treatment are recorded.

The CSG noted several linked topic areas that may be of interest to readers. These have been provided as supplementary materials and include:

- Supplementary material 1: Measuring levels of tobacco dependency, cumulative exposure & carbon monoxide levels
- Supplementary material 2: Summary of evidence in the management of tobacco dependency (NRT, vaping, nicotine analogue medications)
- Supplementary material 3: Setting up a Tobacco Dependency Treatment Service in an acute care NHS Hospital
- Supplementary material 4: Building Blocks Framework – quick reference version

Specialist behaviour change training and motivational interviewing for tobacco dependency advisors was considered outside the scope of this document and outside that of most hospital clinicians' day-to-day work. Treating cannabis dependency, concurrent or separate to tobacco dependency, was also considered out of scope of this Clinical Statement. Models and funding for the treatment of tobacco dependency for hospital in-patients may differ in each of the 4 nations of the UK thus recommendations made in this Clinical Statement should be applied accordingly.

METHODOLOGY

Professor Matthew Evison and Professor Sanjay Agrawal chaired the Clinical Statement Group (CSG). Membership was drawn from respiratory medicine, nursing, pharmacy and tobacco dependency specialists. The CSG identified and developed the 'building blocks' concept as a framework to present best practice and key clinical practice points. The group reviewed NICE recommendations and Cochrane Reviews on this topic and supplemented the evidence with up-to-date literature searches. Following discussions of broad statement content, individual sections were drafted by group members. A final edited draft was reviewed by the BTS Standards of Care Committee (SOCC) following a public consultation period and peer review from June to August 2023. The revised document was re-approved by the BTS SOCC in October 2023 before final publication.

INTRODUCTION

Tobacco dependency is both the most common and deadliest co-morbidity a hospital clinician will encounter.[2 3] The harms and costs of smoking and the substantial benefits of treating tobacco dependency during an acute hospital admission are well documented.[2 4–8] This Clinical Statement has been developed to empower hospital clinicians with the knowledge, skills and confidence to provide expert, effective and evidence-based interventions for tobacco dependent patients as part of their admission. This will, in turn, ensure empathetic and meaningful interactions that are both professionally satisfying for the clinician and life-saving for the patient, as well as ensuring excellence of care in tobacco dependency in line with NICE quality standards.[9]

The key objectives for treating tobacco dependency in the inpatient setting are as follows:

1. To help alleviate the withdrawal and urges to smoke as effectively as possible from the point of admission and throughout the duration of the admission
2. To support tobacco dependent patients to achieve a smoke-free admission and maximise the chances of a complete recovery from the acute illness

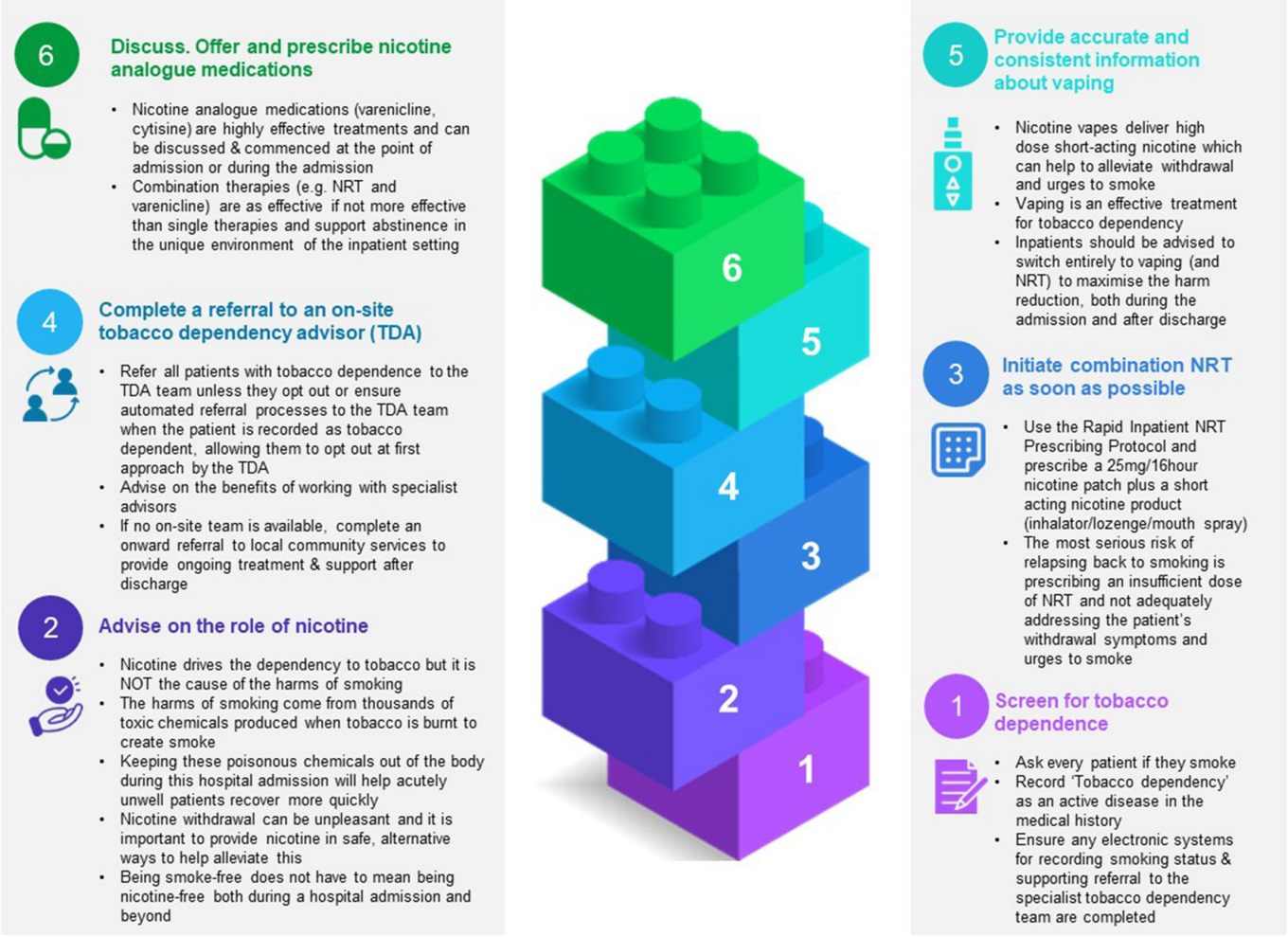

Figure 1 Building blocks framework.

3. To provide the opportunity to receive specialist behaviour change support that could help overcome deeply engrained smoking routines and behaviours
4. For many patients, this will be the start of the path that helps them achieve long term abstinence from tobacco

The NHS Long Term Plan for England (LTP)[10] has acknowledged the critical importance and substantial benefits of treating tobacco dependency in patients that smoke who are admitted to hospital. The NHS LTP committed to provide funding to ensure every patient that smokes admitted to hospital receives treatment for tobacco dependency and this is driving the recruitment of Tobacco Dependency Advisors (TDAs) in acute care trusts across England. However, clinicians have a pivotal and synergistic role in the delivery of tobacco dependency treatment (in addition to and before the involvement of TDAs) by providing a series of interventions on admission. In this Clinical Statement, we describe a framework for delivering these interventions using a 'building blocks' concept (figure 1). A quick reference version of the building blocks framework is also available in the online supplemental materials. The overall aim of this approach is to add as many building blocks as possible to achieve the best outcomes.

The building blocks describe a series of interventions that will help patients to manage their tobacco dependence, starting with screening for tobacco dependence (Block 1). Not every patient will accept every intervention but the more building blocks that are used as part of managing their tobacco dependence the more likely the key objectives described above will be achieved. These building blocks are designed to be delivered and enacted at the point of hospital admission. However, it is good practice to continue to strive to complete all of the building blocks throughout the admission.

'Motivation to quit' has previously been used as a treatment indication or stratification, often in community settings. However, this Clinical Statement strongly advises against this in the inpatient setting. Motivation can be assessed and interpreted in different ways and varies dependent on the situation at the time. Tobacco dependent patients are entering a period of unplanned temporary abstinence that requires appropriate treatment and support where long-term abstinence is not the only focus. A smoke-free hospital admission is an important outcome for patients with an acute illness to aid recovery and improve the likelihood of continued smoking abstinence. Some patients may not be ready to immediately consider the goal of long-term abstinence but can reap significant benefits from a smoke-free admission. In time, some patients might transition into a place where achieving long term abstinence becomes their primary goal. The building blocks described in this framework are, therefore, part of an 'admission package' for **all** patients with tobacco dependency admitted to hospital. A personalised tobacco dependency care plan may be developed following these interventions under the expert guidance of a TDA, but all clinicians should

deliver these building blocks as a standard of care. The building blocks framework has been incorporated into training materials commissioned by NHS England, developed and provided by the National Centre for Smoking Cessation and Training to support tobacco dependency services in England. The training materials refer to the building blocks as a care bundle to be applied to inpatients on admission.

The building blocks are:

1. Screen for tobacco dependence
2. Advise on the role of nicotine
3. Initiate combination nicotine replacement therapy as soon as possible
4. Complete a referral to an on-site tobacco dependency advisor (TDA)
5. Provide accurate and consistent information on vaping
6. Discuss, offer and prescribe nicotine analogue medications

Specific notifications relevant to this Clinical Statement

It is important all clinicians are aware that toxic chemicals within tobacco smoke induce more rapid liver metabolism requiring higher doses of certain medications. Therefore, when a patient enters into a period of abstinence from tobacco (eg, during a hospital admission), plasma levels of medications can rise, potentially into toxic levels. The key medications to be aware of are **olanzapine and clozapine**. Monitoring of plasma levels, liaising with the parent psychiatric team and dose reduction should all be considered. A list of all medication considerations related to abstinence from tobacco is provided within the Royal College of Physicians' (RCP) publication 'Hiding in Plain Sight: Treating tobacco dependency in the NHS'.[2]

Vaping has been shown to be an important tool in managing tobacco dependency; this Statement does not advocate the use of vapes outside of tobacco dependency treatment. Vapes should not be used by non-smokers and people under the age of 18.

Building block 1: screen for tobacco dependence

To maximise the significant opportunity an acute hospital admission provides to treat tobacco dependency at scale, every clinician must screen every patient they meet for tobacco dependence. Patients who currently smoke or who have recently stopped smoking (defined as stopping within the last 4 weeks) should be diagnosed as tobacco dependent. The diagnosis of tobacco dependency should be documented clearly and accessibly in their health record.[11] Healthcare professionals should record tobacco dependency as a co-morbidity within the medical history; it should not be recorded as a lifestyle factor in the patient's social history. The management of tobacco dependency should also be recorded within the admission management plan.

In certain medical scenarios, it may be important to assess the level of tobacco dependency, consider cumulative tobacco exposure when assessing the risk of certain diseases such as lung cancer and measure exhaled carbon monoxide levels (online supplemental material 1). If there are electronic systems, or other processes to follow, that ensure accurate data capture, recording of smoking status and facilitate an automated referral to the on-site tobacco dependency team, these should be completed according to local policy and pathways.

Clinical practice points: screen for tobacco dependence

- Ask every patient if they smoke
- Record 'tobacco dependency' as an active disease in the medical history
- Ensure any electronic systems for recording smoking status and supporting referral to the specialist tobacco dependency team are completed

Building block 2: advise on the role of nicotine

Nicotine is highly addictive and the constituent of tobacco smoke that drives urges to smoke, but it is not the cause of smoking-related harms. This important information is often misunderstood by patients and clinicians. The relative safety of nicotine is evidenced through the well-established long-term safety data of nicotine replacement therapy products.[12 13] The harms of smoking occur due to the vehicle used for nicotine delivery, a tobacco-containing cigarette. The combustion of tobacco creates toxic chemicals and carcinogens which when inhaled in cigarette smoke, cause or exacerbate over one hundred different diseases.[2 3]

Nicotine triggers acetylcholine receptors in the brain and the consequent release of dopamine leads to effects for the user that include satiety and reward. Among established users it can reduce stress and improve concentration associated with relieving nicotine withdrawal. It is this psychoactive effect and alleviation of nicotine withdrawal that creates a very powerful dependency and the deeply engrained habits of smoking. People who smoke become highly addicted to the rewarding effects of nicotine and can rapidly experience unpleasant withdrawal symptoms without it. This is the root cause of why it is so difficult to stop smoking. Helping patients that are tobacco dependent to understand these processes and misconceptions around nicotine can be very helpful to increase engagement with treatment and support both temporary and long-term abstinence.

Clinical practice points: advise on the role of nicotine

- Nicotine drives the dependency to tobacco but is NOT the cause of the harms of smoking
- The harms of smoking come from thousands of toxic chemicals produced when tobacco is burnt to create smoke
- Keeping these toxic chemicals out of the body during this hospital admission will help acutely unwell patients recover more quickly
- Nicotine withdrawal can be unpleasant, and it is important to provide nicotine in safe, alternative ways to help alleviate this
- Being smoke-free does not have to mean being nicotine-free during a hospital admission or after discharge from hospital

Building block 3: initiate combination nicotine replacement therapy (NRT) as soon as possible

Nicotine replacement therapy (NRT) is readily available in hospitals and should be offered to all patients that smoke at the point of admission to help both alleviate withdrawal and urges to smoke. Withdrawal can begin very quickly from first arriving at the hospital and NRT should be initiated as soon as possible. Cochrane reviews demonstrate that combination NRT (a long-acting transdermal patch and a fast-acting nicotine product) is more effective than single agent NRT, and that high dose NRT is more effective than lower strength products.[14 15] This is unsurprising given inhaling tobacco smoke is a highly effective mechanism for nicotine absorption into the body and NRT must try to replicate this. When prescribing combination NRT provide the following advice:

- Nicotine patches are effective at preventing withdrawal from nicotine by providing a constant 'drip' of nicotine into the bloodstream. Fast-acting nicotine products (such as the inhalator, gum, lozenges sprays) are useful for managing urges to smoke
- Use fast-acting nicotine products frequently to try to prevent urges to smoke (for example *'on the hour every hour'*) and whenever cravings start

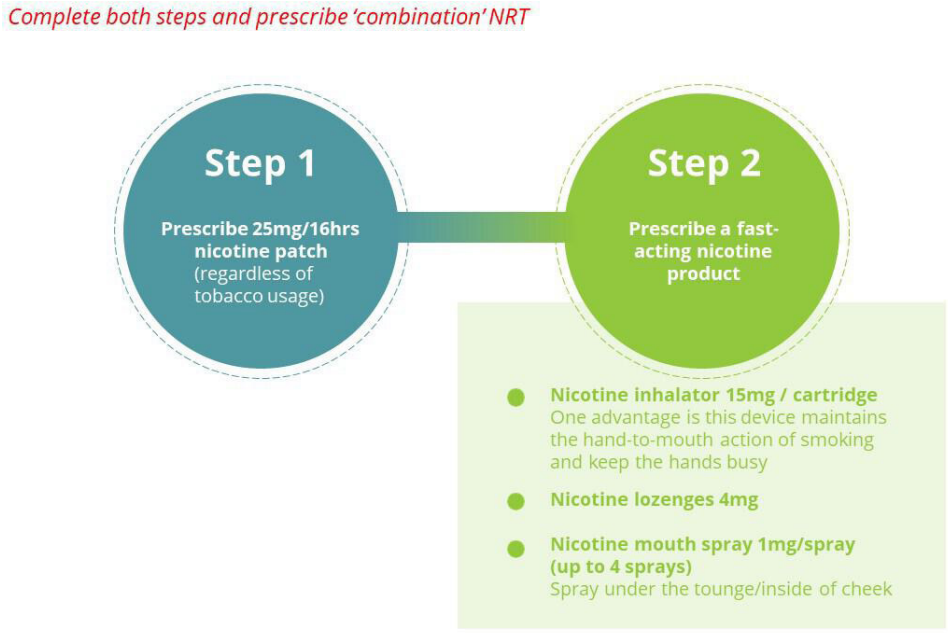

Figure 2 The rapid inpatient NRT prescribing protocol.

- All fast-acting nicotine products are absorbed through the oromucosal membranes. Encourage patients not to swallow the nicotine, let it rest in the mouth and absorb through the gums/tongue.
- NRT has few side effects and is well tolerated by most patients who smoke. Most side effects are mild to moderate and can be managed through correct use
- Some patients will require higher doses of NRT to manage withdrawal symptoms and urges to smoke and this is safe practice (eg, double patches for those who smoke over 40 cigarettes per day)
- The most serious risk of relapsing back to smoking is prescribing an insufficient dose of NRT and not adequately addressing the patient's withdrawal symptoms and urges to smoke. A smoke-free hospital admission is an important outcome for patients with an acute illness to aid recovery and improve the likelihood of continued smoking abstinence

The Clinical Statement Group has defined a pragmatic and easy-to-use NRT prescribing protocol (figure 2) that uses a single high dose transdermal patch and a selection of three fast-acting nicotine products that were considered to cover the majority of patient preferences and needs, as well as being the most popular from clinical experience. This protocol is designed for all clinicians to incorporate into the treatment pathway for tobacco dependent patients. A more detailed prescribing protocol incorporating all available products is also provided in 'online supplemental material 2'. Every patient identified as tobacco dependent should be offered NRT and advised that it is an effective way to prevent potentially unpleasant withdrawal and to manage cravings during the hospital admission. By being smoke-free, it will simply aid recovery from the acute illness, even if this is not part of an immediate goal of achieving long-term abstinence.

Clinical practice points: prescribe combination nicotine replacement therapy

- ► Use a Rapid Inpatient NRT Prescribing Protocol and prescribe a 25 mg/16hour nicotine patch plus a fast-acting nicotine product (inhalator, lozenge, mouth spray)
- ► The most serious risk of relapsing back to smoking is prescribing an insufficient dose of NRT and not adequately addressing the patient's withdrawal symptoms and urges to smoke

Building block 4: complete a referral to an on-site tobacco dependency advisor

Advise that it is part of standard hospital care to refer all patients who are tobacco dependent to a specialist in-patient tobacco dependency advisor (TDA). Advise about the importance of working with a specialist and what the service offers. Ensure all patients that are tobacco dependent are referred to the specialist service other than those who 'opt out'. Many hospitals have implemented automated referrals to the TDAs using electronic systems that are activated as soon as a patient is recorded as tobacco dependent. All clinicians must be aware and comply with local processes and pathways.

Tobacco dependency advisors are healthcare professionals who are trained in behavioural support and provide evidence-based behaviour change counselling to patients with tobacco dependency. They are also experts in how to advise patients (and health professionals) on the use of medications and other interventions to treat tobacco dependence. Combining behavioural support with pharmacotherapy has added benefit in supporting long term abstinence from tobacco.[16 17] There is high-certainty evidence from Cochrane meta-analyses that providing in-person or telephone behavioural support for people using pharmacotherapy to stop smoking, increases quit rates (RR 1.15, 95%confidence interval 1.08-.1.22).[18] Furthermore, there is evidence that behavioural or multicomponent interventions to help patients stop smoking, which are started in hospital (and continue after discharge) increase treatment success rates. This includes a Cochrane meta-analysis demonstrating a significant increase in tobacco cessation rates through the combination of nicotine replacement therapy (NRT) and specialist behavioural support provided during a hospital admission.[18]

In England, the NHS LTP is providing funding for on-site TDAs as a new standard of care. If an on-site team is not available, however, then the ability to refer and signpost patients into local community services for ongoing treatment and support is

important; knowledge of these referral mechanisms is critical for hospital clinicians managing tobacco dependent patients. Where available, on-site tobacco dependency advisors will try to agree a post-discharge package of support and treatment including onward referral to community teams or other follow-up mechanisms. However, some patients may opt out of support from the on-site TDA but be willing to accept an onward referral from their clinical team to community services at discharge. This further underlines the importance of all hospital clinicians understanding the local referral mechanisms to maximise every opportunity for tobacco dependent patients to receive behaviour change support that can help overcome deeply engrained smoking routines and behaviours during and after an admission. The immediate post-discharge period is the highest risk for relapse to smoking and it is vitally important all tobacco dependent patients are offered support as they transition back into their normal environments and routines.

Clinical practice points: complete a referral to an on-site tobacco dependency advisor

- Refer all patients with tobacco dependence to the TDA unless they opt out or ensure automated referral processes to the TDA when the patient is recorded as tobacco dependent, allowing them to opt out at first approach by the TDA
- Advise on the benefits of working with specialist tobacco dependency advisors
- If no on-site team is available, complete an onward referral to local community services to provide ongoing treatment and support after discharge

Building block 5: provide accurate and consistent information about vaping

Nicotine vapes (E-cigarettes, Electronic Nicotine Delivery System (ENDS)) are electronic devices which allow patients to inhale nicotine through a vapour. Vaping should be thought of as a fast-acting nicotine product that utilises inhalation with absorption predominantly in the oropharynx. Vaping devices contain a heating element which, when activated, rapidly heats liquid nicotine, producing the vapour which is inhaled by the patient. Vaping devices do not contain tobacco and there is no combustion of tobacco. Vaping is an effective tool in the treatment for tobacco dependency, and can be more effective than NRT alone,[15 19] and is likely to be equally if not more effective when combined with NRT.[11 20 21] Combining vaping with NRT also supports abstinence in the unique environment of an inpatient admission to ensure there is always nicotine available even at times when a nicotine vape cannot be readily used, for example, the internal hospital building.

The successful treatment outcomes from vaping may reflect its mimicking of smoking with the rapid rise of serum nicotine levels, hand-to-mouth physical movements, and the sensation of vapour hitting the back of the throat. This makes it a viable alternative to smoking tobacco that maintains the rewarding psychoactive effects of nicotine without the combustion of tobacco. Vaping is substantially less harmful than smoking tobacco but is not risk-free. An extensive review of the health effects of vaping in comparison to smoking was commissioned by the Office of Health Improvement and Disparities in 2022[19] and the UK government is expected to extend the regulation of vaping products further in 2024 as a result of a consultation in 2023, to discourage their use in non-smokers while recognising their effectiveness in the treatment of tobacco dependency.[22] Patients who opt to use vaping as part of their treatment programme should be advised to switch from tobacco to vaping completely to maximise the harm reduction. As vaping is not risk-free, it is good practice to advise patients to reduce their vape usage at the appropriate time in the future and ultimately to stop vaping, **when there is minimal risk of a relapse back to smoking tobacco. People who do not smoke, should not vape.**

Public and professional misconceptions about the relative harms of vaping in comparison to smoking tobacco can act as a barrier to using vapes as an effective tobacco dependency treatment and may influence people to continue to smoke. It is important that clinicians provide accurate and consistent information on vaping. Training for clinicians on the use of e-cigarettes to treat tobacco dependency can be accessed via the National Centre for Smoking Cessation and Training.[23] Vaping devices and liquids are increasingly offered and supplied by specialist tobacco dependency services and vape provision by specialist teams is increasingly common in many mental health and some acute hospital Trusts. The use of vaping devices as part of a tobacco dependency treatment for inpatients can be supported by local smoke-free policies that facilitate patients to use vaping within their treatment plan (eg, vaping allowed for inpatients on the external grounds as part of a tobacco dependency treatment programme). Inpatients should be provided with information about smoke-free policies during the admission. Furthermore, relevant to inpatients and patients discharged with home oxygen therapy, in line with the National Fire Chiefs Council UK, vapes should not be used or charged when using or near any type of oxygen equipment. Vaping products are regulated under Tobacco and Related Product Regulations 2016 (TRPR), stating that adverse events related to vape products need to be reported to the Medicines and Healthcare products Regulatory Agency (MHRA).

Clinical practice points: provide accurate and consistent information on Vaping

- Nicotine vapes deliver high dose fast-acting nicotine which can help to alleviate withdrawal and urges to smoke
- Vaping is an effective tool in the treatment for tobacco dependency and can be used to support patients to be abstinent from tobacco during a hospital admission and to help achieve long-term abstinence
- When using nicotine vapes as part of their tobacco dependency treatment plan, inpatients should be advised to switch entirely to vaping (and NRT) to maximise the harm reduction, both during the admission and after discharge
- If provided in the inpatient setting, nicotine vapes should be used alongside combination NRT as patients may not be able to use the vape at certain times or in certain environments (eg, the internal hospital building)
- Vaping is more likely to be effective when provided alongside behaviour change support from a TDA during the hospital admission and after discharge
- Vaping is not risk free. Patients that use vaping as part of their tobacco dependency treatment plan should be advised to reduce their vape usage at the appropriate time and ultimately to stop vaping, when there is minimal risk of a relapse to smoking
- People who do not smoke, should not vape. Vapes should not be used by any patients under 18 years of age or patients who do not smoke
- Inform patients who use nicotine vapes as part of their tobacco dependency treatment plan that vaping products are

regulated under Tobacco and Related Product Regulations 2016 (TRPR), that adverse events related to vape products need to be reported to the Medicines and Healthcare products Regulatory Agency (MHRA) and that vaping products should only be purchased from reputable sources. Additional information on reputable sources can be sought from local government stop smoking services

- From an environmental perspective, avoid single use products
- Vapes should not be used when using home oxygen therapy

Building block 6: discuss, offer and prescribe nicotine analogue medications

Varenicline is a licenced medication that acts as a dual agonist and antagonist at the nicotinic receptor in the brain. The agonistic effect creates the release of dopamine and the antagonistic action prevents the release of dopamine in response to nicotine from smoking tobacco. Varenicline, therefore, both reduces withdrawal and decreases the rewarding effects of smoking by preventing the downstream actions of nicotine at the time of smoking. This separates the reward from the action of smoking and is a very powerful tool to overcome the dependence to tobacco.

Varenicline is the most effective treatment for tobacco dependency in comparison to other pharmacotherapies in randomised controlled trials and in real-world data from local government stop smoking services; it is a highly cost-effective treatment.[15 24–27] It is even more effective when combined with other treatments eg, NRT.[28] Varenicline has no drug interactions and very few contraindications (avoid in pregnant or breastfeeding patients), so apart from knowing to prescribe according to the recommended escalating dose schedule, it is very easy to prescribe (see box 1: Discussing and prescribing varenicline). The most frequently recorded adverse effects of varenicline are nausea, sleep disturbance and vivid/colourful dreams. These can be minimised by taking tablets with food and a full glass of water and/or anti-sickness medications and taking the medication earlier in the evening.

A significant barrier to the prescription and usage of varenicline had been concerns over mental health side effects and the BNF continues to advise caution in patients with a history of psychiatric disease. However, this has been disproven by a number of meta-analyses[29] and the EAGLES trial that specifically tested the question of neuropsychiatric complications and demonstrated no evidence of increased risk with varenicline.[24] The Royal College of Psychiatrists support the use of varenicline to treat tobacco dependency in people with severe mental illness.[30] The combination of varenicline and NRT is particularly suited to the inpatient environment due to the additional nicotine needed in the early stages of varenicline treatment that is normally provided by ongoing smoking in the community setting. In the inpatient setting, this additional nicotine can be provided by NRT/vaping. Varenicline can be recommended and prescribed by the admitting team as well as recommended by TDAs.

Box 1 Discussing and prescribing varenicline

⇒ Varenicline helps to alleviate withdrawal from nicotine and can reduce the rewarding effects of smoking
⇒ Varenicline is started on an escalating dosing schedule and is a total of 12 weeks treatment:
Days 1-3: 0.5mg once daily
Days 4-7: 0.5mg twice daily
Day 8 onwards: 1mg twice daily
⇒ Varenicline is one of the most effective treatments for tobacco dependency and can be added to all other treatments, particularly as varenicline takes several days to reach its full effect & patients initially require additional nicotine from NRT/ vaping products
⇒ Varenicline is more likely to be successful alongside behaviour change support provided by a TDA during and after a hospital admission
⇒ Warn about common side effects including nausea, sleep disturbance and vivid/colourful dreams
⇒ Nausea can be minimised by taking tablets with food and a full glass of water and/or anti-sickness medications
⇒ Sleep disturbance can be minimised by taking the medication earlier in the evening
⇒ The dose can be reduced by half (0.5mg BD) if any side effects are persistent or intolerable
⇒ Varenicline is a 12-week course but can be extended to 24 weeks or longer for patients with a high dependency on nicotine and/or high risk of relapse
⇒ Refer to the British National Formulary (BNF) for more information

Cytisine

Cytisine is a naturally occurring chemical derived from the plant *Cytisus laburnum* ('golden rain', endemic to the Balkans) and is a nicotine analogue. It 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.[31–35] These studies also confirm reduced adverse events in comparison to varenicline but increased adverse effects in comparison to placebo (gastrointestinal disturbance). Cytisine has been a licenced medication in Europe for over 50 years. Through its derivation from plants, and consequent 'natural' product status, cytisine may broaden its appeal to patients that smoke who have been deterred from more typical medication, especially patients from more socially disadvantaged backgrounds who smoke. Cytisine treatment is a 25-day course starting at six tablets per day and reducing through the course to two tablets. Cytisine is an evidence-based intervention that can be discussed with patients with tobacco dependence (see box 2: Discussing cytisine). Cytisine is an important part of hospital-based tobacco dependency treatment particularly with the the benefits of providing the full 25-day course supply to inpatients without the need for further prescriptions.

Other pharmacotherapies including bupropion and nortriptyline are available to treat tobacco dependency for patients who are intolerant of NRT, vapes or nicotine analogues however their lesser efficacy and greater side effects should be considered[15] and these medications are not within the scope of this Clinical Statement.

Clinical practice points: discuss, offer and prescribe nicotine analogue medications

- Nicotine analogue medications (varenicline, cytisine) are effective treatments for tobacco dependency and can be discussed and commenced at the point of admission or during the admission
- Combination therapies (eg, NRT and nicotine analogues) are as effective if not more effective than single therapies and support abstinence in the unique environment of the inpatient setting (NRT provides additional nicotine needed during the escalation phase of varenicline during a smoke-free admission)

Box 2 Discussing cytisine

- ⇒ Advise that cytisine is a naturally occurring plant-based substance that mimics the effect of nicotine in the brain and has strong evidence it can help people who smoke to stop
- ⇒ Cytisine is started on a reducing dosing schedule over a 25 – day course:
  - ⇒Days 1-3 1 capsule every 2 hours (max. 6 capsules/day)
  - ⇒Days 4-12 1 capsule every 2.5 hours (max. 5 capsules/day)
  - ⇒Days 13-16 1 capsule every 3 hours (max. 4 capsules/day)
  - ⇒Days 17-20 1 capsule every 5 hours (max. 3 capsules/day)
  - ⇒Days 21-25 1-2 capsules/day
- ⇒ Cytisine is an effective treatment for tobacco dependency and can be added to all other treatments e.g. NRT/vaping
- ⇒ Cytisine is more likely to be successful alongside behaviour change support provided by a TDA during and after a hospital admission
- ⇒ Warn of possible side effect of gastrointestinal upset
- ⇒ Refer to the British National Formulary (BNF) and Summary of Product Characteristics for more information

CONCLUSION

Smoking tobacco is the single greatest cause of death, illness, disability and health inequality, yet is wholly preventable. Many tobacco dependent patients are admitted to acute care in NHS trusts making a hospital admission an important opportunity to deliver highly effective interventions for tobacco dependency. All hospital clinicians can proactively deliver these interventions, supported by tobacco dependency advisors. This Clinical Statement describes each intervention as a 'building block' where the objective is to add as many blocks as possible to a tobacco dependent patient's management (figure 1). This requires all individual clinicians to ensure they have the required training and competence to:

1. Screen all patients for tobacco dependency
2. Advise on the role of nicotine
3. Initiate combination NRT as soon as possible
4. Complete a referral to an on-site tobacco dependency advisor
5. Provide accurate and consistent information about vaping
6. Discuss, offer and prescribe nicotine analogue medications

These brief but highly effective interventions can be delivered quickly and consistently at the point of admission. Even if not all interventions are available (eg, vaping devices, varenicline, cytisine) then clinicians are still able to provide consistent information and signpost to these interventions for use after hospital discharge. On hospital discharge, the transfer of care to community services should be seamless, so that patients can continue their tobacco dependency treatment plan to completion and ensure that the outcomes of treatment are recorded. If this treatment framework were fully adopted across all NHS hospitals, it would alleviate disease, mortality and the financial burden of tobacco dependency to patients, families and communities while reducing NHS and social care demand.

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