NATIONAL CLINICAL GUIDELINES

THE MANAGEMENT OF TOBACCO DEPENDENCY

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المبادئ الإرشادية السريرية لدولة قطر
NATIONAL CLINICAL GUIDELINES FOR QATAR

وزارة الصحـــة العامـــة
Ministry of Public Health
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Abbreviations

The abbreviations used in this guideline are as follows:

CNS	Central nervous system
CO	Carbon monoxide
COHb	Carboxyhaemoglobin
COPD	Chronic obstructive pulmonary disease
CVD	Cardiovascular disease
eGFR	Estimated glomerular filtration rate
ENDS	Electronic nicotine delivery systems
FTND	Fagerström test for nicotine dependence
GATS	Global Adult Tobacco Survey
GCC	Gulf Cooperation Council
GI	Gastrointestinal
MOPH	Ministry of Public Health of Qatar
NRT	Nicotine replacement therapy
STAR	Set Tell Advise Remove
WHO	World Health Organization

Table of Contents

1 Information about this Guideline

1.1 Objective and Purpose of the Guideline

The purpose of this guideline is to define the appropriate management of adults and adolescents who use tobacco substances. The objective is to improve appropriate prescribing and referral of patients presenting to provider organisations in Qatar. It is intended that the guideline will be used primarily by physicians, nurses and health educators in all healthcare settings.

1.2 Scope of the Guideline

Aspects of care included within the scope of the guideline are:

- Counselling and management of tobacco dependency in adults and adolescents including both pregnant and breastfeeding women
- '5-As' framework for counselling and managing patients to stop tobacco use.
- Use of pharmacotherapy, including:
    - Nicotine replacement therapy.
    - Varenicline.
    - Bupropion.
    - Combination therapy.
- '5-Rs' framework for motivational interviewing.

Aspects of care **not** included in this guideline are:

- Acupuncture, hypnotherapy, or exercise for cessation of tobacco use.
- Training of healthcare professionals.

1.3 Editorial Approach

This guideline document has been developed and issued by the Ministry of Public Health of Qatar (MOPH), through a process which aligns with international best practice in guideline development and localisation. The guideline will be reviewed on a regular basis and updated to incorporate comments and feedback from stakeholders across Qatar.

The editorial methodology, used to develop this guideline, has involved the following critical steps:

- Extensive literature search for well-reputed published evidence relating to the topic.
- Critical appraisal of the literature.
- Development of a draft summary guideline.
- Review of the summary guideline with a Guideline Development Group, comprised of practising healthcare professionals, subject matter experts and patient representatives, from across Qatar.
- Independent review of the guideline by the National Clinical Guidelines & Pathways Committee, appointed by the MOPH, from amongst stakeholder organisations across Qatar.

Whilst the MOPH has sponsored the development of the guideline, the MOPH has not influenced the specific recommendations made within it.

1.4 Sources of Evidence

The professional literature has been systematically queried using specially developed, customised, and tested search strings. Search strategies are developed to allow efficient yet comprehensive analysis of relevant publications for a given topic and to maximise retrieval of articles with certain desired characteristics pertinent to a guideline.

For each guideline, all retrieved publications have been individually reviewed by a member of the Editorial Team and assessed in terms of quality, utility, and relevance. Preference is given to publications that:

1. Are designed with rigorous scientific methodology.
2. Are published in higher-quality journals.
3. Address an aspect of specific importance to the guideline in question.

Further information about the literature search and appraisal process is included in the appendix.

1.5 Evidence Grading and Recommendations

Recommendations made within this guideline are supported by evidence from the medical literature and where possible the most authoritative sources have been used in the development of this guideline. In order to provide insight into the evidence basis for each recommendation, the following evidence hierarchy has been used to grade the level of authoritativeness of the evidence used, where recommendations have been made within this guideline.

Where the recommendations of international guidelines have been adopted, the evidence grading is assigned to the underlying evidence used by the international guideline. Where more than one source has been cited, the evidence grading relates to the highest level of evidence cited:

- **Level 1 (L1):**
  - Meta-analyses.
  - Randomised controlled trials with meta-analysis.
  - Randomised controlled trials.
  - Systematic reviews.

- **Level 2 (L2):**
  - Observational studies, examples include:
    - Cohort studies with statistical adjustment for potential confounders.
    - Cohort studies without adjustment.
    - Case series with historical or literature controls.
    - Uncontrolled case series.
  - Statements in published articles or textbooks.

- **Level 3 (L3):**
  - Expert opinion.
  - Unpublished data, examples include:
    - Large database analyses.
    - Written protocols or outcomes reports from large practices.

In order to give additional insight into the reasoning underlying certain recommendations and the strength of recommendation, the following recommendation grading has been used, where recommendations are made:

- **Recommendation Grade A (RGA):** Evidence demonstrates at least moderate certainty of a net benefit from the recommendation.
- **Recommendation Grade B (RGB):** Evidence is insufficient, conflicting, or poor and demonstrates an incomplete assessment of net benefit vs harm; additional research is recommended.
- **Recommendation Grade C (RGC):** Evidence demonstrates potential harm that outweighs benefit; additional research is recommended.
- **Recommendation of the GDG (R-GDG):** Recommended best practice on the basis of the clinical experience of the Guideline Development Group members.

1.6 Guideline Development Group Members

The following table lists members of the Guideline Development Group (GDG) nominated by their respective organisations and the National Clinical Guidelines & Pathways Committee. The GDG members have reviewed and provided their feedback and approval of the guideline document. Each member has completed a declaration of conflicts of interest, which has been reviewed and retained by the MOPH.

Guideline Development Group Members		
Name	**Title**	**Organisation**
Dr Mohammed Abdelkerim Abdallah Abuiwaili	General Practitioner	Ministry of Interior Clinics
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1.7 National Clinical Guidelines & Pathways Committee Members

The following table lists members of the National Clinical Guidelines & Pathways Committee (NCGPC), appointed by the MOPH. The NCGPC members have reviewed and provided their feedback and approval of the guideline document. Each member has completed a declaration of conflicts of interest, which has been reviewed and retained by the MOPH.

National Clinical Guidelines & Pathways Committee (NCGPC) Members		
Name	**Title**	**Organisation**
Ms Huda Amer Al-Katheeri	Chair of the NCGPC, Director- Strategic Planning & Performance Department	Ministry of Public Health
Shk Dr Mohammed Hamad J. Al Thani	Co-Chair of NCGPC, Director of Public Health	Ministry of Public Health
Prof Anthony Akobeng	Chair Clinical Practice Guidelines Committee	Sidra Medicine
Dr Alshaymaa Mohammed A. M. Al-Motawa	Consultant Family Medicine	Qatar Petroleum
Dr Basil Bashqawi	Accreditation Coordinator, Dept of Health Professions	Ministry of Public Health
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Dr Mohammed Elrishi	Senior consultant endocrine, diabetes, and internal medicine	Al Ahli Hospital
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Dr Ghassan Youseph Hommos	Senior Consultant Endocrinology	Al Emadi Hospital
Dr Hani Ben Hassen Al Kilani	Senior Consultant, Executive Director for Corporate Clinical Policy and Guidelines	Hamad Medical Corporation
Dr Egon Toft	VP and Dean	College of Medicine, Qatar University

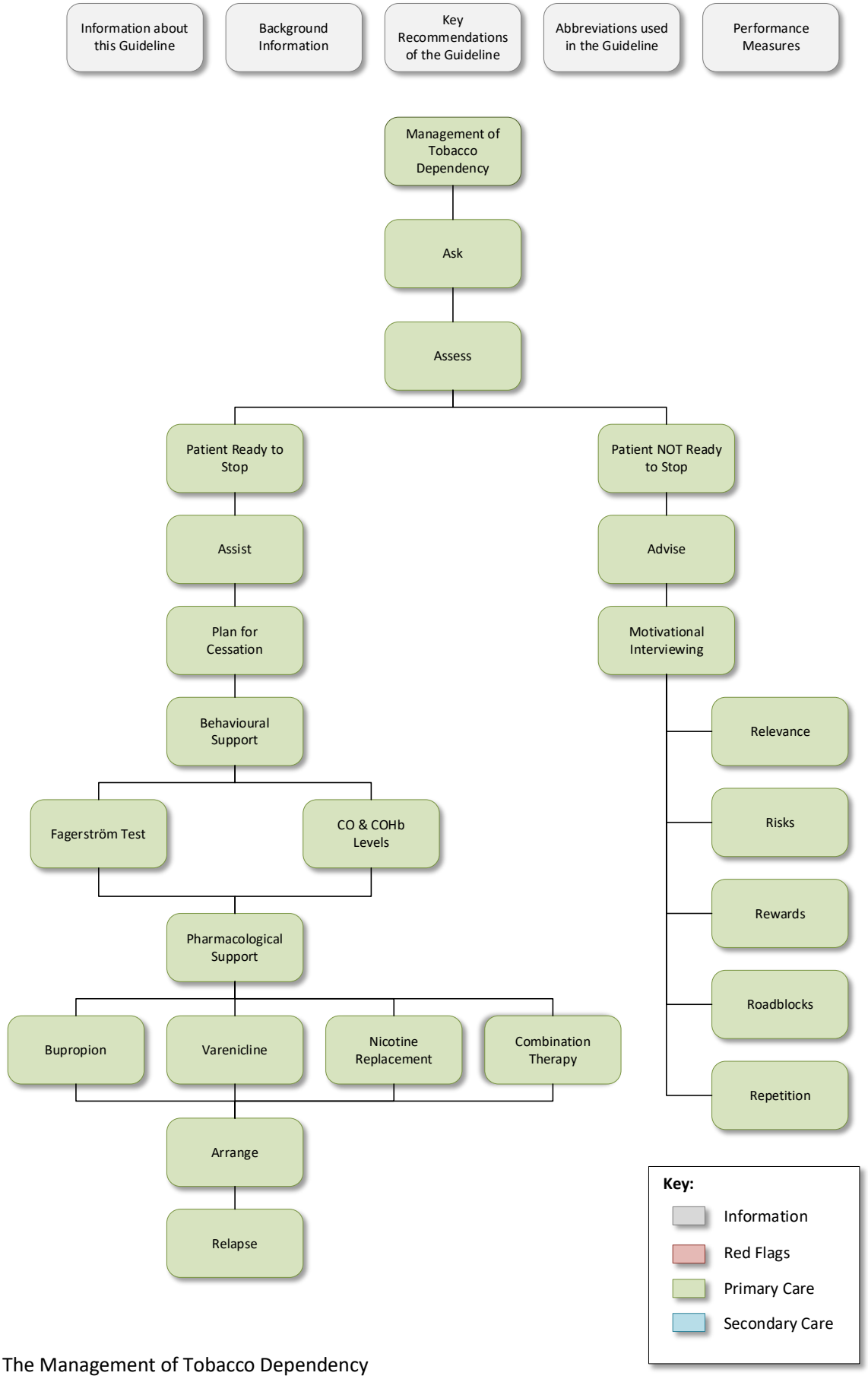
1.8 Responsibilities of Healthcare Professionals

This guideline has been issued by the MOPH to define how care should be provided in Qatar. It is based upon a comprehensive assessment of the evidence as well as its applicability to the national context of Qatar. Healthcare professionals are expected to take this guidance into account when exercising their clinical judgement in the care of patients presenting to them.

The guidance does not override individual professional responsibility to take decisions which are appropriate to the circumstances of the patient concerned. Such decisions should be made in consultation with the patient, their guardians, or caregivers and should consider the individual risks and benefits of any intervention that is contemplated in the patient's care.

2 Management of Tobacco Dependency Pathway

Click on a box below to see the relevant page of the Pathway.



3 Key Recommendations of the Guideline

The key recommendations of this guideline are:

Background (see *Section 4*):

- Tobacco use is a major public health problem, which is associated with increased morbidity, mortality and an increased burden on health care services [1] [**L2**].
- Tobacco dependence is a chronic relapsing disease that requires the same type of treatment as other long-term conditions [1].
- Shisha smoking Is becoming popular especially among young people who believe that it is less addictive, less harmful than cigarettes and that users can quit at any time.
    - A large proportion of shisha smokers view shisha as a safer alternative to cigarettes.
- Tobacco dependency is preferably managed within an evidence-based tobacco dependency service [**R-GDG**].

Management (see *Section 5*):

- The '5-As' framework, should be used to manage patients who are using tobacco [2] .
- Comprises of the following [2] :
    - Ask.
    - Assess
    - Advise.
    - Assist.
        - Plan for cessation (use the *STAR* planning approach)
        - Provide behavioural support.
        - Consider pharmacological interventions.
    - Arrange follow-up.

Pharmacological Interventions (see *Section 5.2.4.3*):

- Consider use of the *Fagerström Test for Nicotine Dependence* (FTND), carbon monoxide (CO) and carboxyhaemoglobin (COHb) levels to assess the degree of nicotine dependence [3] .
- Interventions comprise of [2] :
    - Bupropion.
    - Varenicline.
    - Nicotine replacement therapy (NRT).
        - The use of combination NRT is more effective than the use of single formulations of NRT in treatment of tobacco dependence [4] .
    - Combination therapy.
        - All combinations of bupropion, varenicline and both short and long-acting NRT, may be used [1] .
        - Varenicline and combination NRT are the most effective pharmacotherapies for treating tobacco use [4] .

Motivational Interviewing (see *Section 5.2.4.4*):

- The '5-Rs' framework comprises of [5] :
    - Relevance: Make the discussion relevant to the patient's health and family.
    - Risks: Include the personal risks and consequences of tobacco use.
    - Rewards: Include the personal benefits of not using tobacco.
    - Roadblocks: Consider the potential barriers to tobacco cessation.
    - Repetition: Reassure patient that relapse is common and reinforce motivational advice.

4 Background information

4.1 Definitions

Tobacco Dependence is defined as [6] :

- Dependence on any form of tobacco, including, but not limited to, cigarettes, pipes, cigars, smokeless tobacco (e.g. chewing tobacco), shisha (water pipe) or *medwakh*.

Smokeless Tobacco is defined as [6–8] :

- Any form of unburned tobacco, including:
    - Chewing tobacco e.g. *sweika*, *sohatt* and *paan*.
    - Snuff.
- Use of smokeless tobacco is as addictive as smoking and can cause cancer of the gum, cheek, lip, mouth, tongue, throat, and pancreas.

Electronic Nicotine Delivery Systems are defined as [7,9] :

- Devices that vaporise a solution the user inhales (e.g. e-cigarettes, e-shisha).
    - Vaporised liquids typically contain nicotine and flavouring agents.

Heat-not-Burn Tobacco Products are defined as [10] :

- Products where the tobacco is heated using an electronically controlled heating blade instead of being burnt.
    - advertised as less dangerous than the traditional cigarettes as the absence of combustion decreases the production of toxic compounds.

Continuous Abstinence is defined as [6] :

- A measure of tobacco abstinence based on whether subjects are continuously abstinent from tobacco use from their day of cessation to a designated outcome point e.g. 6 months.

Relapse is defined as [6] :

- A return to regular tobacco use by someone who has been abstinent.

A Lapse is defined as [6] :

- A brief return to tobacco use after abstinence, that is not regular use.

4.2 Background

Tobacco use is a major public health problem, which is associated with increased morbidity, mortality and an increased burden on health care services [1] [**L2**]. Tobacco dependence is a chronic relapsing disease that requires the same type of treatment as other long-term conditions [1] .

Tobacco smoke contains [1,11,12] :

- Nicotine.
- Tar.
- Carbon monoxide.
- Polyaromatic hydrocarbons.
- Nitrosamines.
- In shisha smoking, additional heavy metals are also found (e.g. arsenic, beryllium, and lead).

Shisha smoking [1,13] [**L2**]:

- Approximately 10-20 g of tobacco is used per shisha session, in addition to 5 g of charcoal and produces more toxic chemicals than cigarettes.
- Is becoming popular especially among young people who believe that it is less addictive, less harmful than cigarettes and that users can quit at any time.
- A large proportion of shisha smokers view shisha as a safer alternative to cigarettes.

Smokeless tobacco contains [8] :

- Tobacco with or without flavouring.
- Tobacco with alkaline modifiers.
- Tobacco with slaked lime as an alkaline modifier and areca nut.

Electronic Nicotine Delivery Systems [**R-GDG**]:

- The long-term safety and efficacy of ENDS are unknown at present.
- These devices are presently banned in Qatar and cessation from their use should be encouraged and managed as per any other tobacco product.

4.3 Prevalence

The overall prevalence of tobacco use in Qatar is increasing [7] [**L2**]:

- The prevalence of tobacco smoking is higher in males (21.1%) compared to females (3.1%).
- Dependency:
  - 55.4% of active smokers reported smoking ≥16 cigarettes per day.
  - 45.5% reported starting smoking before the age of 18 years.
- Exposure to second-hand smoke:
  - 12.0% of adults working indoors were exposed to second-hand smoke.
  - 16.8% were exposed to second-hand smoke in their homes.
  - 25.9% were exposed to second-hand smoke in restaurants.
- Shisha smoking:
  - In Qatar, 3.4% of adults were shisha smokers, among them:
    - 4.9% of men; and
    - 1.6% of women.
  - Approximately 11% of shisha smokers started smoking before the age of 18 years.
  - Nearly 85% of men smoked shisha in a cafe, whereas 63% of women who smoked shisha, did so at home.
- Smokeless tobacco:
  - 0.7% of adults in Qatar were smokeless tobacco users:
    - 1.3% of men.
    - 0.0% of women.

4.4 Complications and Risks of Tobacco Use

4.4.1 Complications of Tobacco Use

Across countries of the Gulf Cooperation Council (GCC) region, tobacco use leads to [7] [**L2**]:

- Approximately 30,000 deaths per year in the region.
- Approximately 15% of all healthcare costs.

Tobacco use-related causes of death include [7,8,14–16] :

- Cancers, particularly lung cancer.
- Respiratory diseases.
- Cardiovascular diseases.
- Gastrointestinal (GI) diseases.

Tobacco use is associated with a higher frequency of post-surgical complications, including [14] [**L2**]:

- Decreased survival rates.
- Delay in wound healing.
- Respiratory complications.

Tobacco use during pregnancy, increases the risk of complications in pregnancy and labour, such as [14] [**L2**]:

- Miscarriage.
- Ectopic pregnancy.
- Bleeding during pregnancy.
- Placental abruption.
- Premature rupture of the membranes.
- Intrauterine growth retardation.
- Premature birth.
- Sudden infant death syndrome.

4.4.2 Complications of Shisha Use

Various toxins found in shisha have been associated with acute as well as long-term detrimental effects (similar to cigarette smoking), such as [1] :

- Acute deterioration in cardiopulmonary function.
- Increased risk of respiratory diseases and lung cancer.
- Bladder cancer.
- Nasopharyngeal cancer.
- Oesophageal cancer.
- Other potential complications associated with shisha use include [13,17] [**L2**]:
    - Transmission of infectious diseases, due to sharing of either the shisha mouthpiece or the shisha water:
        - Respiratory viral and bacterial infections, including Covid-19, herpes simplex and tuberculosis [**R-GDG**].

4.4.3 Complications of Second-Hand Smoke

Second-hand smoke contains carcinogens and there are no safe levels of exposure [12] [**L2**]:

- Contributes to a range of diseases including [7] :
    - Cancers:
        - The risk of lung cancer in non-smokers increases by 20-30%.
    - Cardiovascular disease.
    - Respiratory disease.

Parental tobacco use during pregnancy and exposure to second-hand smoke increases an infant or child's risk of [12,14] [**L2**]:

- Sudden infant death syndrome.
- Infant mortality.
- Respiratory problems including wheeze, asthma, and middle ear infection.

4.4.4 Complications of Smokeless Tobacco

Smokeless tobacco is associated with the following [8] :

- Nicotine dependence.
- Mouth and oropharyngeal disease, including cancers.
- Cardiovascular disease.
- Pregnancy-related problems.

5 Management of Tobacco Cessation

5.1 Tobacco Dependency Service

Tobacco dependency is preferably managed within an evidence-based tobacco dependency service [**R-GDG**].

Supplementary support includes [12,14] :

- Telephone helplines to support tobacco cessation.
- Educational self-help materials tailored to the individual, including:
    - Written material.
    - Electronic material.
        - Online resources can have clinically significant results.
- Behavioural therapies in a clinical or community setting.

NB: Hospitalisation and elective surgery provide important opportunities for tobacco cessation. Routinely offer intensive tobacco use cessation counselling and nicotine replacement therapy (NRT) during hospitalisation, unless contraindicated, with at least 1 month of follow-up support after discharge. This increases quit rate by 37% at 6-12 months post-discharge [18] .

Pre-operative tobacco use cessation services should [19] :

- Be intensive.
- Start at least 2-4 weeks prior to any surgery, if planned.
- Last 4-8 weeks.
- Include NRT.
- Include motivational techniques.
- Offer behavioural change support.

5.2 5-As Framework

Use the following '5-As' framework as outlined below, to manage patients who are using tobacco [2] .

5.2.1 Ask

The vast majority of current tobacco smokers (66.8%) and smokeless tobacco users (77.4%) have thought about quitting [7] [**L2**]. Nearly one-third of shisha smokers have expressed interest in quitting [1] .

Identify tobacco status at each visit (at least once a year [16]) and update patient notes to include the following information [2] [**L2, RGA**]:

- The patient's current tobacco use status:
    - If not using tobacco, check again at every clinic visit [**R-GDG**]:
    - If the patient is an ex-user:
        - Confirm the decision to quit and record the patient's status.
        - Give relapse prevention advice.
    - If the patient is currently using tobacco, then assess the patient's readiness to stop.

5.2.2 Assess

Assess readiness to stop tobacco use [2] [**L3**]:

- Assess level of motivation to quit.
- How important it is for them to quit.
- How confident they are in their ability to quit.
- Important when considering treatment.

If the patient is ready to consider stopping, assess the following [1,2,14,20] [**L2**]:

- How long the patient has been using tobacco.
- Age of onset of tobacco use:
    - The younger the age of onset of tobacco use, the harder it may be for the patient to quit.
    - Teen smokers are more likely to use alcohol and illegal drugs, and more likely to have panic attacks, anxiety disorders and depression.
- What type(s) of tobacco product is/are used.
- Time-to-first-tobacco-use upon wakening is an indicator of nicotine dependency.
    - A short time of <5 mins is suggestive of a high level of addiction.
- Volume of tobacco use (e.g. number of cigarettes) per day or week.
- Pattern of tobacco use e.g. in time, place, social circumstances.

Ask about previous attempts to quit, including [1,2,14] :

- Level of success:
    - Establish whether attempt to quit was assisted or unassisted.
    - Determine how long they have been successful if they are an ex-user.
- Relapse pattern:
    - Multiple attempts over a period of years is not unusual.
    - Common to relapse in the first weeks of a quit attempt.
- Previous lapses:
    - Identify triggers to relapses.
    - Discuss coping mechanisms for the future.
- General psychosocial well-being associated with the previous quitting attempt:
    - Stress.
    - Weight gain.
- Assess other barriers to quitting:
    - Fear of relapse.
    - Alcohol or drug use.
    - Living or working with partners, friends and/or colleagues who use tobacco.

Assess patient's medical history including the following to determine the appropriateness of tobacco use cessation interventions [2,6,21] [**L2**]:

- Chronic obstructive pulmonary disease (COPD).
- Asthma.
- Cardiovascular disease.
- Chronic kidney or liver disease.
- Neurological disease.
- Pregnancy.
- Breastfeeding.
- Mental health problems.
- Other substance dependency.
- Detailed medication history.

5.2.3 Advise

Brief tobacco use cessation advice from health professionals during routine consultations has substantial potential public health benefit [2] [**L1**, **RGA**].

Advise as follows [1,2] :

- Offer brief cessation advice whenever possible, at least once a year.
- Give clear, strong, personalised, and non-confrontational advice.
- Consider the following factors when customising advice:
    - Age.
    - Gender.
    - Marital status.
    - Number of children.
    - Education.
    - Comorbidities:
        - Psychiatric disorders.
        - Substance abuse disorders.
    - Use of other medications.
    - Vital signs and body weight.
    - Carbon monoxide (CO) level if known.

5.2.4 Assist

Provide assistance according to the person's readiness to quit [2,14] [**L2**]:

- Offer self-help material.
- Offer referral to specialised stop tobacco use service.
- Consider pharmacological intervention.
- Consider behavioural support.

5.2.4.1 Planning for Cessation

Consider formulating a plan (*STAR* plan):

- **S**et a quit date [1,20] [**L2, RGB**]:
    - Give patients a week to their quit date (maximum 2 weeks if nicotine dependence is high).
    - Tell patients to use tobacco as normal up until their quit date.
    - Advise patients that 'cutting down' in advance of the quit date is not an effective method of cessation:
        - The patient is more likely to stop tobacco use when using pharmacological treatment.
        - For those who are 'cutting down' before quitting advise on a quit date within 2-4 weeks of receiving behavioural support.
- **T**ell family and friends [20] [**L2**]:
    - Discuss with family and friends how to deal with difficult situations when the urge to use tobacco arises.
- **A**dvise the patient to put in substantial effort to prepare for the quitting process [1] [**L2**].
- **R**emove all tobacco products from home and workplace [20] [**L2**].
    - Remove items associated with tobacco use such as lighters, ashtrays or anything else that reminds the patient of tobacco use.

5.2.4.2 Behavioural Support

Advise the patient to [12] :

- Completely cease all tobacco use after the quit date.
- Avoid any triggers which previously caused relapse.
- Consider how they will cope with trigger factors and difficult times.

Remind the patient of the benefits of quitting tobacco use [12] .

Encourage patient to [2,14] :

- Solicit support from spouse, family, friends, and work colleagues.
- Consider behavioural therapies in a clinical or community setting.

Advise patient about possible problems associated with tobacco use cessation including:

- Withdrawal symptoms [2,8] :
    - Difficulty with concentration, insomnia, and light-headedness − may last 2 weeks.
    - Irritability, depression, and restlessness, which may last up to 1 month.
    - Oral pain may be reported by smokeless tobacco users.
    - Increased appetite and cravings − can go on for months.
- Strong urges to use tobacco can occur many weeks, months or even years into the future [2] :
    - These urges should not come as a surprise and patients should have a plan in place to deal with them as and when they arise.

Text messages can also be used as a behavioural support tool [14] .

5.2.4.3 Pharmacological Intervention

When prescribing pharmacological therapy for tobacco use cessation, consider the following [1,14] :

- Pharmacological intervention is generally not recommended for use in adolescents and young people (aged <18 years). If there is a need for them, precautions are advised.
- The availability of counselling and support services.
- Personal preference of patient:
    - Provide information and guidance on the 3 main types of medications:
        - Bupropion.
        - Varenicline.
        - NRT.
    - Allow the patient to make an informed decision on their choice of tobacco use cessation aid.
    - Instruct the patient on how to start the medication before their quit date.
- Previous use of pharmacological therapy for tobacco use cessation.
- Contraindications and risk of adverse effects.
- Level of nicotine dependence, as assessed using the Fagerström score, carbon monoxide (CO) or carboxyhaemoglobin (COHb) levels.

Medications should be offered before stopping smoking [14] . A quit date should be set within the first 2 weeks of treatment for bupropion and within the first 1-2 weeks for varenicline. As for NRT, it should be available for use at least one day before quitting [14].

Increasingly, evidence is suggesting that more intensive pharmacotherapeutic interventions (particularly for highly-dependent smokers) are safe and can improve cessation outcomes such as the achievement of abstinence [1,2] .

Examples of intensive pharmacotherapeutic interventions include [1,2] :

- Longer duration of therapy.
- Higher doses of conventional agents.
- Combination therapy with multiple agents (e.g. long-acting with short acting NRTs; oral agents with long or short-acting NRTs).

N.B.: In situations where oral agents are not available, combination NRTs should be used and optimal dosing provided [1] .

There is insufficient evidence regarding the use of pharmacotherapies, which are approved for cessation in cigarette smoking, for shisha users. Health professionals with sufficient expertise in these pharmacotherapies may choose to use them at their discretion [1] .

Patients quitting tobacco use with any method are at some risk of increased psychological stress during the process, but the risk is higher for those with a history of mental illness [2] :

- Clinicians should monitor patients with mental illness more closely and advise prompt reporting of adverse events.

Fagerström Test for Nicotine Dependence:

Measuring the degree of nicotine dependence can help identify tobacco users who would benefit from more intensive assistance to quit. One of the most frequently used tools for assessing nicotine dependence in smokers, is the *Fagerström Test for Nicotine Dependence* (FTND) [3] .

Questions	Score
1. How soon after you wake up do you smoke your first cigarette?	
• Within 5 minutes	3
• 6-30 minutes	2
• 31-60 minutes	1
• After 60 minutes	0
2. Do you find it difficult to refrain from tobacco use in places where it is forbidden? (e.g. in places of religious worship, at the library, cinema, etc.)	
• Yes	1
• No	0
3. Which cigarette would you hate most to give up?	
• The first one in the morning	1
• Any other	0
4. How many cigarettes a day do you smoke?	
• 10 or less	0
• 11-20	1
• 21-30	2
• 31 or more	3
5. Do you smoke more frequently during the first hours after waking than during the rest of the day?	
• Yes	1
• No	0
6. Do you smoke if you are so ill that you are in bed most of the day?	
• Yes	1
• No	0

Table 5.2.4.3: Fagerström Test for Nicotine Dependence on Tobacco use [3] .

The total test score is calculated by summing the score of each selected answer and indicates the level of dependence [3] :

- 0-2: Very low dependence.
- 3-4: Low dependence.
- 5: Medium/moderate dependence.
- 6-7: High dependence.
- 8-10: Very high dependence.

Carbon Monoxide (CO) and Carboxyhaemoglobin (COHb) Levels:

- Exhaled breath carbon monoxide levels may be able to predict status of tobacco use but there is no clear evidence that it correlates with nicotine dependence [22–24] .
- Normal ranges of COHb levels are considered <2% but may be greater if occupational environmental exposures exist [25].
- Studies have shown that specific cut-off levels for exhaled carbon monoxide can be used to distinguish between recent tobacco users and non-tobacco users [26] .
- Measurement of carboxyhaemoglobin levels using a pulse oximeter can be used to distinguish between recent tobacco users and non-tobacco users and may further be able to distinguish between heavy and light tobacco use [27] .

Bupropion:

An efficacious non-nicotine oral medication originally developed as an antidepressant [2] [**L1, RGA**]:

- It is contraindicated in [1,21] :
  - Pregnancy or breastfeeding.
  - Seizure disorder, or history of seizures.
  - CNS tumour.
  - Abrupt withdrawal from alcohol or benzodiazepines.
  - Severe hepatic cirrhosis.
  - Bipolar disorder.
  - Eating disorders.
  - Head injuries.
- There is a dose-related risk of seizures with bupropion [1,2,21,28] :
  - The risk is 0.1% at doses of up to 300 mg daily.
  - Prescribe with caution in:
    - Elderly.
    - Predisposition to seizures (prescribe only if benefit clearly outweighs risk):
      - Including concomitant use of drugs that lower seizure threshold, alcohol abuse, history of head trauma, and diabetes.
  - Measure blood pressure before and during treatment.
  - Stop bupropion if the individual has a seizure while taking it.
- Adverse effects include [2,21,28] :
  - Headaches.
  - Dizziness.
  - Insomnia.
  - Dry mouth.
  - GI effects.
  - Anxiety.
- Bupropion may impair the ability to carry out skilled tasks – e.g. driving [21] .
- Bupropion users should be observed for symptoms such as changes in behaviour, hostility, agitation and depressed mood [28] .
- Bupropion can be stopped abruptly after a usual course of 7-12 weeks [21,28] .

Treatment regimen [28] :

- Adults over 18 years:
    - Start 1-2 weeks before the target quit date.
    - Prescribe an initial 150 mg daily for 6 days, followed by 150 mg twice daily.
    - A period of treatment should last 7-12 weeks:
        - If abstinence is not achieved at 12 weeks, discontinue treatment.
    - Maximum single dose is 150 mg.
    - Maximum daily dose is 300 mg (150 mg in patients with a history of seizures).
    - Minimum of 8 hours between doses.
- Elderly (aged >65 years):
    - Maximum dose is 150 mg daily.

NB: Refer to the Qatar National Formulary for the most up to date prescribing information [**R-GDG**].

Varenicline:

Is an efficacious nicotinic receptor partial agonist drug that acts as a nicotine 'reward' in the brain [1,2,21] [**L1**, **RGA**]:

- Alleviates symptoms of cravings and withdrawal.
- It is not licensed for people under age 18 years.
- It is not recommended in individuals who are pregnant or are breastfeeding.
- Caution is advised in patients with:
    - Cardiovascular disease (CVD).
    - History of psychiatric illness.
    - Lower threshold for seizures.
    - Renal impairment:
        - Adjust dose in patients in patients with a low eGFR.
- There may be an increase in suicidal ideation and suicide attempts in those patients taking varenicline [28] :
    - Patients should be advised to stop treatment and contact their doctor immediately if they develop agitation, depressed mood or suicidal thoughts.

Treatment regimen [15,21,28,29] :

- Adults over 18 years:
    - Treatment usually begins 1-2 weeks before the target quit date, up to a maximum of 5 weeks prior.
    - Initial dose of 0.5mg once daily for 3 days, followed by up to 0.5mg twice daily for 4 days, followed by 1 mg twice daily for 12 weeks.
    - If 1 mg twice daily is not tolerated, reduce dose to 0.5mg twice daily.
- A longer course of varenicline (an additional 12 weeks of treatment) may improve long-term abstinence rates.
- Side effects include:
    - Nausea and other gastrointestinal disturbances.
    - Appetite changes.
    - Dry mouth.
    - Taste disturbances.
    - Headaches.
    - Drowsiness.
    - Sleep disorders.
    - Depression, anxiety and suicidal ideation (see above).

NB: Refer to the Qatar National Formulary for the most up to date prescribing information [**R-GDG**].

Nicotine Replacement Therapy:
NRT is available in several forms, which have similar efficacy [20,28,29] .

Transdermal patches [21,28,29] :

- Transdermal nicotine patches provide nicotine at a controlled rate which is absorbed through the skin into the systemic circulation.
- 24 hours patches are available in the following doses: 7 mg, 14 mg and 21 mg per patch.
- General treatment schedule for most patients:
    - Individuals who smoke ≥10 cigarettes/day should apply:
        - The 21 mg patch daily for 4-8 weeks, followed by
        - The 14 mg patch for 2-4 weeks, and then;
        - The 7 mg patch for the final 2-4 weeks.
    - Individuals who smoke <10 cigarettes daily can usually start with the medium-strength patch for 6-8 weeks, followed by the low-strength patch for 2-4 weeks.
- Apply the patch to a clean, dry, hairless area of skin on the upper chest, back and upper arm.
- Patch sites should be rotated, and the skin treated with emollient if necessary.
- If patient is experiencing side effects, then the patch should be removed.

Oral formulations, available in Qatar include [**R-GDG**]:

- Lozenge (1 mg doses available in Qatar [**R-GDG**]).
- Chewing gum (2 mg and 4 mg doses).

General points regarding NRT [2,14,21,29] :

- Patients who smoke ≥20 cigarettes per day should generally start NRT at higher doses.
- If the patient suffers significant nicotine withdrawal, consider:
    - Increasing the dose (up the maximum tolerated, licensed dose).
    - Combining NRT patches with a rapid-release NRT product.
    - Changing the formulation of NRT.
- Combination NRT is safe and is more effective than use of single formulations.
    - Combining NRT with tobacco products is safe, but should be discouraged [8] [**L1**, **RGA**].
- Common adverse effects include [2,2,21,28,29] :
    - Local irritation from the use of patches.
    - Vivid dreams or disturbed sleep.
    - Dyspepsia and nausea in Lozenge or gum use.
- NRT use is preferable to tobacco use for women who are pregnant or breast-feeding [2,21,30] :
    - Use NRT in pregnant women only if the patient fails to quit without NRT and advise removal of patches before sleep.
    - Standard-dose NRT patches may not work in pregnancy.
- NRT can be prescribed for people with unstable CVD, subject to clinical judgement [14] [**L1**].
    - NRT is safe in stable CVD [2] [**L2**, **RGA**].
    - NRT should be used with caution on those with recent myocardial infarction, unstable angina, severe arrhythmia or recent cerebrovascular events [2] [**L2**, **RGB**].
- NRT can be prescribed for adolescents (aged 12-17 years) [2,14] :
    - Explain the risks and benefits of using NRT to younger patients.
    - Strongly encourage to use behavioural support in their quit attempt.
    - Evidence for safety and efficacy is lacking in this population.
    - Consider restricting prescription to 12 weeks.
- Starting patch use prior to quitting may be more efficacious than starting on the quit day [30] .
    - Use a 24 hour patch for 2 weeks before quitting, then continue on the patch on the quit day [2] [**L1**, **RGA**].

NB: Refer to the Qatar National Formulary for the most up to date prescribing information [**R-GDG**].

Combination Therapy:
Bupropion, varenicline and both short and long-acting NRT, may all be used in combination[1]. The decision to use combination therapy should be discussed and agreed with the patient and made on the basis of the severity of nicotine dependency [**R-GDG**].

Evidence suggests that [1,2,21] [**L1**]:

- Varenicline and combination NRT are the most effective pharmacotherapies for treating tobacco use.
- The use of varenicline with NRT has not been shown to be more effective than varenicline monotherapy. However, the combination is tolerable, and is used in some clinical practices.
- The use of combination NRT is more effective than the use of single formulations of NRT in treatment of tobacco dependence.
- Direct comparisons between bupropion and NRT show equal efficacy.

NB: Refer to the Qatar National Formulary for the most up to date prescribing information [**R-GDG**].

5.2.4.4 Laser Therapy

There is insufficient evidence at present to recommend the routine use of Laser Therapy as an intervention for the treatment of tobacco dependency [31] [**L1, RGB**]. Laser therapy may be provided to individual who asked for the service specifically or who tried other approved medications and not able to quit [**R-GDG**].

5.2.4.5 Advice for Patients who are Unwilling to Stop Tobacco Use

Provide relevant information about [1,2,8,20] [3,5,13,16]:

- The risks of continued tobacco use [2,8] [**L2**].
- Challenge perceived benefits such as:
    - The belief that smokeless tobacco is an appropriate way to ease indigestion, relieve dental pain, or helps freshen the breath.
- The benefits of quitting.
- Support and treatment available to help attempt to quit.
- In smokers, emphasise the dangers of second-hand smoke to family and loved ones.
- Reassure patient that:
    - Stopping tobacco use is a process that takes time and involves progression through many stages [13] , for which help is available.
    - Help and support will be readily available should they wish to stop tobacco use.

Motivational Interviewing – The 5-Rs Framework
Consider the 'Five Rs' Framework developed by the New Zealand Guidelines Group [5] :

- Relevance: Make the discussion relevant to the patient's health and that of their family.
- Risks: Include the personal risks and consequences of tobacco use.
- Rewards: Include the personal benefits of not using tobacco.
- Roadblocks: Consider the potential barriers to tobacco cessation.
- Repetition: Reassure patient that relapse is common and reinforce motivational advice.

Relevance:
Encourage the tobacco user to [5] :

- Identify why quitting is personally relevant.
- Make a list of reasons why they want to stop.

Risks:

Remind the patient that [5] :

- Low tar and low nicotine cigarettes, pipes, and cigars are all unsafe.
- Smoking increases the level of carbon monoxide in the blood.
- Tobacco use during pregnancy increases the risk of:
    - Miscarriage.
    - Complications, including:
        - Detachment of the placenta.
        - Premature rupture of membranes.
    - Congenital defects of the baby, e.g. cleft palate.
    - Reduced birth weight.
    - Perinatal death.
- Tobacco use increases the risk of preventable diseases.
- Tobacco can cause long-term disability and dependency.
- Environmental smoke increases the risk of tobacco-related diseases.
- Smoking also has effects on children exposed to tobacco smoke, including:
    - Croup.
    - Asthma.
    - Otitis media.
    - Bronchitis.
    - Pneumonia.
- If relevant, consider asking patient to think about the experience of older family members or friends who have had a tobacco-related illness.
- NB: Remind patients of the risks associated with tobacco use but do not lecture, as most users are already aware of the health-damaging effects of tobacco use.

Rewards:

Remind the patient that the benefits of stopping tobacco use include [5] :

- Improved short- and long-term health including:
    - Improved circulation.
    - Improved lung function in smokers – approximately 10% improvement within 3-9 months of stopping.
    - A decreased risk of heart attack even after one day of stopping – within one year, the risk of heart disease is halved.
    - Increased life expectancy – the risk of premature death is significantly reduced in people who stop smoking, even up to age 70 years.
    - Decreased postoperative respiratory and wound-healing complications if smokers quit before surgery.
- Improvements in:
    - Health in babies and children due to absence of environmental smoke.
    - Personal sense of taste and smell.
    - Personal finances.
    - Self-esteem.
    - Being a good role model for others.

Roadblocks:

Consider barriers and specific impediments to quitting include [5] :

- Withdrawal symptoms.
- Anxiety about failure.
- Concern about weight gain.
- Depression.
- 'Sense of loss' of something they enjoy.

Repetition:
Motivating patients involves [5] :

- Sensitively repeating motivational elements whenever patient is seen.
- Reassuring patient that:
    - Stopping tobacco use is a process that takes time:
        - Most people require more than one attempt before quitting successfully.
        - On average it takes 3-4 attempts before a patient successfully quits.
    - Stopping tobacco use involves progression through many stages, for which help is available.
- Reinforcing the availability of support each time the patient is seen, e.g.:
    - Specialist tobacco cessation services.

5.2.5 Arrange

As with any chronic disorder, every treated tobacco user requires follow-up, especially in the early stages[9]. Follow up is effective in increasing quit rates [1,2,16,20] [**L1**]:

- Arrange a first session about 1 week after the quit date.
- Meet the patient at weekly intervals for the first 4 weeks after attempting to quit.
- Record in patient's care record any changes that could affect patient's well-being, e.g.:
    - Psychosocial factors.
    - Family problems.
- Work towards developing coping strategies in difficult situations.
- Review pharmacological treatment regimen at each session.
- Arrange further follow-up after 4 weeks, if necessary.
- In ex-smokers, measure CO level and record it in the patient's notes:
    - A carboxyhaemoglobin level of <2.5% (10 ppm) at 4 weeks confirms abstinence.
        - This does not mean treatment should stop at 4 weeks.
    - CO readings are influenced by many factors such as:
        - Device brand.
        - Cigarette brand.
        - Number of cigarettes smoked.
        - Time elapsed since last cigarette smoked.
        - Time of day.

6 Relapse

In the event of a relapse arrange for the patient to be seen within 1-2 weeks [**R-GDG**]. Advise the patient that [12] :

- Relapse is common in the first weeks of a quit attempt.
- A relapse should not be viewed as a failure – cessation of tobacco use usually takes several attempts.

Ask about the following [12] :

- Identify triggers to relapses.
- Discuss coping mechanisms for the future.
- General psychosocial well-being associated with the previous quitting attempt:
- Assess other barriers to quitting:
    - Fear of relapse.
    - Alcohol or drug use.
    - Living or working with partners, friends and/or colleagues who use tobacco.

7 Key Considerations for Patient Preferences

Patient preferences refer to patient perspectives, beliefs, expectations, and goals for health and life, and to the steps employed by individuals in assessing the potential benefits, harms, costs, and limitations of the management options in relation to one another. Patients may have preferences when it comes to defining their problems, identifying the range of management options and selecting or ranking the outcomes used to compare these options.

It is important for healthcare professionals to develop an understanding of the patient as an individual and the unique way in which each person experiences a condition and its impact on their life.

The following recommendations are therefore made for physicians and other healthcare professionals regarding general principles of patient care in Qatar:

- **Respect Patients:** Treat patients with respect, kindness, dignity, courtesy and honesty. Ensure that the environment is conducive to discussion and that the patient's privacy is respected, particularly when discussing sensitive, personal issues. Ask the patient how they wish to be addressed and ensure that their choice is respected and used.

- **Maintain Confidentiality:** Respect the patient's right to confidentiality and avoid disclosing or sharing patients' information without their informed consent. In this context, students and anyone not directly involved in the delivery of care should first be introduced to the patient before starting consultations or meetings, and let the patient decide if they want them to stay.

- **Clarify Third-Party Involvement:** Clarify with the patient at the first point of contact whether and how they like their partner, family members or carers to be involved in key decisions about their care or management and review this regularly. If the patient agrees, share information with their partner, family members or carers.

- **Obtain Informed Consent:** Obtain and document informed consent from patients, in accordance with MOPH policy and guidance.

- **Encourage Shared Decision Making:** Ensure that patients are involved in decision making about their own care, or their dependent's care, and that factors that could impact the patient's participation in their own consultation and care including physical or learning disabilities, sight, speech or hearing impairments and problems with understanding, reading or speaking English are addressed.

- **Disclose Medical Errors:** Disclose errors when they occur and show empathy to patients.

- **Ensure Effective Communication:** Explore ways to improve communication including using pictures, symbols or involving an interpreter or family members. Avoid using medical jargon. Use words the patient will understand and confirm understanding by asking questions.

- **Ensure Continuity of Care:** Provide clear and timely sharing of patient information between healthcare professionals especially at the point of any transitions in care.

8 Performance Measures

A list of performance measures is given in the table below. Healthcare organisations are encouraged to monitor service performance using the indicator definitions below [32,33].

Number	Numerator	Denominator
TD01	The number in the denominator who have a record of an offer of support and treatment within the preceding 24 months.	Total number of patients aged 15 years and over who are recorded as current smokers.

Table 8.1: Performance measures [32,33].

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Appendix: Detailed Description of the Literature Search

A systematic search for existing literature on tobacco dependency was performed in the period May 18th – 23rd 2020.

All existing references were evaluated and where necessary and applicable, the latest version of the specific manuscript was used to update the guideline and replace the older reference. The search for clinical practice guidelines on tobacco dependency management was performed in the *PubMed* database and websites of relevant organisations and societies including the *WHO,* the R*oyal Australian College of General Practitioners,* the *New Zealand Ministry of Health,* and the *BNF.* The present guideline is primarily based on *UK NICE*, the *Royal College of Physicians,* and the *King Hussein Cancer Foundation* guidelines and is supplemented with other relevant studies.

Peer-reviewed scientific publications were found in PubMed and via *Google Scholar* Internet search engine. Non-peer reviewed studies were identified in *bioRxiv*. Books were checked on *Amazon* and via *Google* and *Google Scholar* search engines.

The included publications were identified using the terms "*Tobacco*" and specified with the following terms in combinations:

Dependency, guideline, definition, prevalence, symptoms, complication, risk, smoking, shisha, smokeless, electronic, second-hand, abstinence, nicotine, management, cessation, 5-As, behaviour, support, 5-Rs, specialist, carbon monoxide, lifestyle, STAR, Fagerström, carboxyhaemoglobin, treatment, pharmacological, bupropion, varenicline, NRT, replacement, combination, motivation, relapse, lapse follow-up.

Figure A.1 on the next page demonstrates graphically the results of the search and application of exclusion criteria.

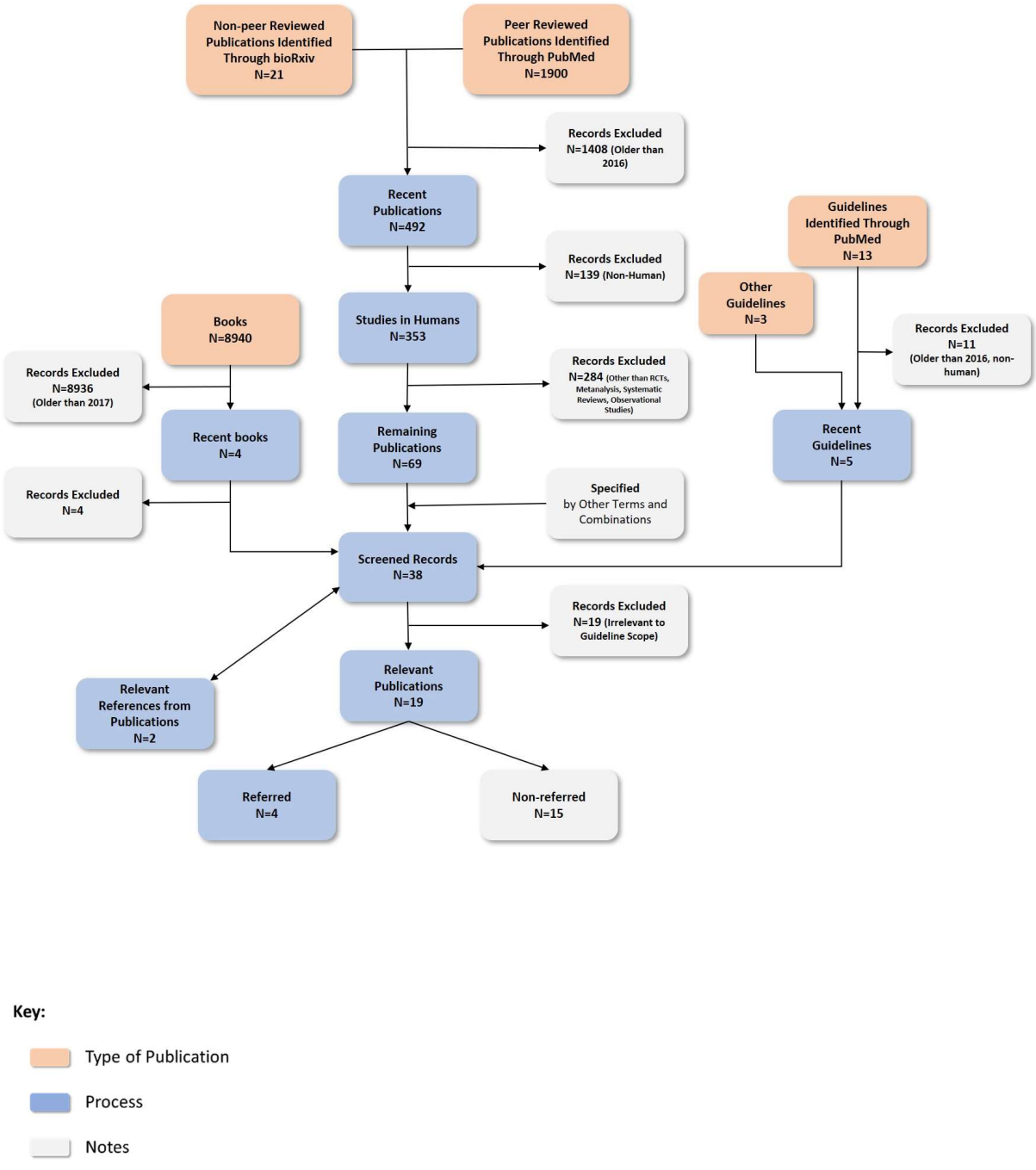

Fig A.1: Literature search results and application of exclusion criteria.

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