THE RUS-AUDIT PROJECT REPORT

Adapting and validating the Alcohol Use Disorders Identification Test (AUDIT) in the Russian Federation

World Health Organization
REGIONAL OFFICE FOR Europe

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ABSTRACT

The RUS-AUDIT is the Russian version of the Alcohol Use Disorders Identification Test (AUDIT), which was translated and adapted in line with existing WHO guidelines for translation and adaptation of instruments and subsequently validated for use in the Russian Federation. The validation study was carried out in a sample of over 2000 individuals from primary health-care (PHC) institutions in nine regions of the Russian Federation between August 2019 and February 2020. The RUS-AUDIT demonstrated good psychometric properties and is recommended as a reliable and valid screening instrument for hazardous and harmful use of alcohol in the Russian Federation and, potentially, in other countries with similar alcohol consumption patterns. Availability of this adapted and validated instrument opens up opportunities for implementation of screening and brief interventions (SBIs) for alcohol in PHC settings in the Russian Federation and beyond. The present report describes the project implementation of the RUS-AUDIT validation study, its main outcomes, and the specific challenges and lessons learned during the large interregional study. It describes the statistical procedures performed to determine optimal cutoffs for the RUS-AUDIT and the construction and determination of cutoffs for its short version, the RUS-AUDIT-S, which consists of only three items and can be used within the limited time constraints typical of PHC settings. The highlighted distribution of patients that were screened with the RUS-AUDIT as part of the study suggests that the anticipated workload for PHC services would be reasonable and manageable should the health system implement this newly validated test as part of routine SBI procedures for alcohol. The report therefore concludes with the proposal of a first RUS-AUDIT application algorithm for implementation in PHC settings; it may also help in planning the further steps needed to set up a system incorporating a continuum of care between PHC and specialized treatment settings.

KEYWORDS

ALCOHOL USE DISORDERS

PRIMARY HEALTH CARE

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SCREENING AND BRIEF INTERVENTION

TEST VALIDATION

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FOREWORD

Alcohol consumption is one of the leading risk factors for noncommunicable diseases and injuries, adding to the burden of disease and economic costs, globally and in the WHO European Region in particular, and causing premature mortality and disability on a large scale. Acknowledging the huge impact of alcohol in undermining health of entire populations, the WHO European Region was the first to act, issuing in the 1990s the European Charter on Alcohol and the first European action plan, offering a comprehensive range of policy options to support Member States in reducing alcohol consumption and harms.

Looking back at its rich history, the Russian Federation knows what is at stake when it comes to alcohol and population health and what needs to be done to reduce the harmful impact of alcohol on people's health and lives. The outstanding efforts of the Russian Federation in implementing comprehensive and effective alcohol control measures, including the cost–effective WHO "best buys" interventions such as introducing higher taxation and limiting the physical availability of alcoholic beverages, have been well documented and acknowledged. The WHO policy impact case study on the Russian Federation's alcohol policies and their effects on mortality and life expectancy is one of the many recent publications that highlight the Russian Federation's success story of effective alcohol control.

Granted the United Nations Interagency Task Force on the Prevention and Control of Non-communicable Diseases (UNIATF) award as an "Outstanding Ministry of Health" by WHO Director-General Dr Tedros Adhanom Ghebreyesus in 2020, the Ministry of Health of the Russian Federation is rightly recognized for its excellence and groundbreaking achievements – a first mover in reversing trends in alcohol consumption and alcohol-attributable harms and one that can share its accumulated knowledge and the lessons it has learned with the rest of the world.

However, more action is needed if the Russian success story is to be continued. While a wealth of measures have already been implemented and remarkable declines in alcohol consumption and alcohol-attributable harm – including but not limited to mortality – have been achieved, new and innovative approaches are needed, especially in the area of the health-care system. Implementing and scaling up screening and brief interventions in the national health-care system is an important step towards ensuring universal health coverage as set forth in the WHO European Programme of Work, 2020–2025 "United Action for Better Health in Europe"; and it is important, in particular, in bridging the gap between primary health care and specialized narcology services and thereby ensuring a continuum of care, especially for individuals who drink alcohol in risky ways but whose consumption is not sufficient to be addressed by the narcology system.

For successful implementation of screening and brief interventions, it is essential to have not only the requisite knowledge and political will, but also the necessary tools and instruments – ones that produce accurate results, are easy to handle, and are accepted by health-care professionals and patients alike. The Alcohol Use Disorders Identification Test (AUDIT) is one such simple and effective tool, but it is one that needs to be rooted in the national health system and cultural context. The present project report documents an important step taken by the Russian Federation towards implementing screening and brief interventions in the health-care system, as it highlights, step by step, how adaptation and statistical validation of WHO's most frequently used screening instrument for alcohol, the AUDIT, took place in the Russian Federation.

The RUS-AUDIT validation project is a prime example of national and international collaboration, rigorous scientific practice and interdisciplinary exchange. It is certain to become a benchmark for future adaptation and validation studies of heath instruments, across the entire WHO European Region and beyond.

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ABBREVIATIONS

AUC	area under the [ROC] curve
AUD	alcohol use disorder
AUDIT	Alcohol Use Disorders Identification Test
AUDIT-C	Alcohol Use Disorders Identification Test – Consumption
CI	confidence interval
CIDI	Composite International Diagnostic Interview
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, fourth edition
DSM-V	Diagnostic and Statistical Manual of Mental Disorders, fifth edition
ICD-10	International [Statistical] Classification of Diseases [and Related Health Problems], 10th revision
K10	Kessler Psychological Distress Scale
NCD	noncommunicable disease
PAB	Project Advisory Board
PHC	primary health care
ROC	receiver operating characteristic
RUS-AUDIT	Russian (Russian Federation-specific) Alcohol Use Disorders Identification Test
RUS-AUDIT-S	Russian Alcohol Use Disorders Identification Test, Short [version]
SBI	screening and brief intervention
SD	standard drink

EXECUTIVE SUMMARY

The Alcohol Use Disorders Identification Test (AUDIT) was developed by WHO and has since been successfully used to screen hazardous and harmful use of alcohol and potential alcohol dependence in primary health-care (PHC) settings in many countries around the world. The AUDIT is a key screening tool for problems associated with alcohol use to inform decisions on whether brief interventions or possible referral for specialized services are required. Until now, there was no nationally accepted Russian-language AUDIT adapted and validated in the Russian Federation.

The present report describes the process of adapting a Russian-language version of the AUDIT to the context of the Russian Federation and the scientific validation procedure of the adapted version. It describes the main stages in the implementation process, highlighting outcomes and lessons learned, and concludes with recommendations on use of the tool in the health system. The report and its accompanying protocol should prove to be useful to countries that have similar alcohol use patterns to the Russian Federation and are planning to adapt and validate the AUDIT in their own contexts, as well as to countries willing to implement screening and brief interventions (SBIs) in the Russian language. The result of this interdisciplinary and international collaboration led by the Russian Ministry of Health and WHO is the so-called RUS-AUDIT – namely, the Russian-language version of the AUDIT, adapted and validated in and for the Russian Federation. The RUS-AUDIT takes into account issues of language translation and of interpretation of test items by a Russian target audience, including the problematic concept of a "standard drink" and specific drinking patterns observed in the Russian Federation.

The full version of the RUS-AUDIT consists of 10 questions in the form of an interview to be used in PHC settings for screening purposes. A short version of the RUS-AUDIT, known as the RUS-AUDIT-S, was derived from the full version using statistical analyses of best possible predictions for key potential outcomes of alcohol use, such as hazardous use, problem use, alcohol use disorders and alcohol dependence. The RUS-AUDIT-S consists of three items and possesses almost the same psychometric qualities as the full version; it offers a quick and simple screening test that is acceptable to PHC patients and staff.

The RUS-AUDIT may be recommended for use in PHC settings as a screening tool for problems associated with alcohol use in the Russian Federation in the form of a short interview conducted by a health professional. It may be developed further using other administrative modes, such as a web-based self-assessment questionnaire.

1. BACKGROUND

1.1 Screening and brief interventions (SBIs) for alcohol as an evidence-informed approach to addressing patients' needs in primary care

Alcohol is a major risk factor for noncommunicable diseases (NCDs), injuries and associated premature mortality, as well as for many other diseases and health conditions; it results in immense health and economic losses to many communities around the world (Rehm et al., 2017; WHO, 2018a). While, globally, most people abstain from alcohol use, generally over their entire lifetime, many of those who do drink alcohol consume large quantities regularly or episodically, often without attributing the harm and the health problems they experience to their alcohol consumption. There are measures that are both effective and cost–effective that can be implemented at the population or individual level to reduce alcohol consumption and alcohol-attributable harm (Babor, 2010; WHO, 2018b). One of the most important and well-researched individual-based strategies is screening and brief intervention (SBI) for alcohol in primary health care (PHC), which aims to identify people with harmful or hazardous alcohol consumption before health and social consequences become pronounced and specialized interventions are required (Babor & Higgins-Biddle, 2001; WHO, 2006a).

People with alcohol use disorders (AUDs) may remain undiagnosed and not receive the care and support they require both because of the significant social stigma that is associated with AUDs, whether potential or already manifested, and because of the way many health systems are structured (Kohn et al., 2004; Rathod et al., 2018). Furthermore, only a small proportion of those who experience alcohol-attributable harm with respect to cardiovascular and digestive diseases and other conditions and who would benefit from advice to reduce or cease their alcohol consumption ever receive it. This can be explained by limited awareness of alcohol-attributable health risks, such as the strong carcinogenic impact of alcohol, not only among patients themselves but also among health-care providers. There are also many other structural and individual barriers that hinder the provision of SBIs for alcohol in PHC, such as lack of resources, training and motivation, limited interdisciplinary collaboration, and logistical issues (Barry et al., 2004; Holland, Pringle & Barbetti, 2009; Johnson et al., 2011).

NCDs and other diseases and their related risk factors may be reliably detected and prevented within PHC through risk screening. Not only can the overall health risks related to alcohol use be detected as part of SBI, with health-care providers playing a key role in increasing their patients' awareness and health literacy with respect to alcohol, but the simple screening procedures can also identify individuals who might have AUDs or are at risk of developing them. These individuals may benefit from brief interventions that encourage decreased consumption or alcohol use cessation, minimizing negative impacts on health and social life before the problems and consequences of alcohol use become more pronounced.

To be effective, SBI requires reliable and easy-to-use instruments that are effective within the limited time constraints typical of PHC settings. Recognizing this need, a WHO expert committee, which was set up to develop efficient methods to identify people at risk of alcohol-related harm, devised the Alcohol Use Disorders Identification Test (AUDIT) as such a tool for use in PHC (and potentially other) settings.

1.2 The AUDIT as a universal screening instrument for hazardous and harmful alcohol use

The AUDIT was developed in 1989, within the framework of a joint project involving WHO and six countries, as a practical instrument to screen for AUDs and to help health-care workers to identify individuals who would benefit from reducing their alcohol use or quitting drinking altogether (Babor et al., 2001; Saunders et al., 1993). The test has since gained worldwide popularity because it is helpful in identifying various levels of risk – specifically, hazardous and harmful use of alcohol, as well as potential alcohol dependence (WHO, 2021b). The AUDIT and its derivatives (see below) are the most commonly used instruments for alcohol screening and are recommended by WHO as part of a comprehensive approach to SBI for alcohol-related problems in PHC. While mainly intended for screening in PHC settings, the AUDIT is also appropriate for use as a screening tool in various other health and health-related facilities, as well as in detention facilities and military service and workplace settings (Babor et al., 2001). It requires minimal training and can be used as an interview format by health and other professionals (nurses, physicians, counsellors) or as a self-administered questionnaire. For this reason, it has also been widely used in population surveys and various studies to measure alcohol use (Lundin et al., 2015; Rehm & Lange, 2019). The test is convenient because it is concise, flexible and compatible with International Classification of Diseases (ICD-10) definitions of AUDs – namely, harmful use of alcohol and alcohol dependence.

To allow early identification of hazardous and harmful use and potential AUDs, the AUDIT developers proposed that further studies should consider how the AUDIT tool could be adapted and validated to suit local contexts and health-care systems (Babor et al., 2001).

1.2.1 AUDIT domains and risk levels and possible interventions

The AUDIT consists of 10 items and three conceptual domains, which assess drinking behaviours over the past 12 months (Table 1). The first domain (items 1–3) concerns recent alcohol use; the second domain (items 4–6) concerns symptoms of alcohol dependence; and the third domain (items 7–10) concerns the adverse consequences of harmful alcohol use. The response to each question is scored from 0 to 4; a patient's overall score is then calculated and may range between 0 and 40 (Babor et al., 2001).

TABLE 1. The AUDIT's three domains and 10 items

Domain	Item number	Item content
Hazardous alcohol use	1	Frequency of drinking
	2	Typical quantity
	3	Frequency of heavy drinking
Dependence symptoms	4	Impaired control over drinking
	5	Increased salience of drinking
	6	Morning drinking
Harmful alcohol use	7	Guilt after drinking
	8	Blackouts
	9	Alcohol-related injuries
	10	Others concerned about drinking

The screening results inform decisions about further steps such as adhering to a healthy lifestyle or seeking specialized addiction treatment. SBI for people with hazardous or harmful alcohol use has been recognized as a measure that is both effective and cost–effective (when compared with special treatment of already developed AUDs) and one that potentially implies less stigma (Angus et al., 2014; WHO, 2017a; Wutzke et al., 2001).

As a result of the AUDIT, people who drink alcohol may be categorized in four health risk levels, each with a suggested set of appropriate measures to be taken within the health system: (1) alcohol education; (2) simple advice; (3) advice plus brief counselling; and (4) potential referral to a specialist for diagnostic evaluation. Such distribution of the drinking population may vary depending on characteristics of the screening programme or patterns of alcohol use in the country concerned. The second test item is linked to the concept of a "standard drink", which is used to assess the typical quantity of alcohol consumed. The specific definition and size of a standard drink may vary in different countries because of differences in their typical serving size, and this may in turn affect both national risk level thresholds and guidelines (if such are in place) and proposed measures (Box 1). Furthermore, when this concept is not well understood in the course of assessment, it can lead to incorrect test results and hence to incorrect decisions on the type of intervention required.

BOX 1. DEFINING A STANDARD DRINK

A standard drink is a measure of alcohol consumption that represents a hypothetical beverage that contains a fixed amount of ethanol (or "pure alcohol"). Usually, a standard drink is expressed as a certain quantity of beer, wine or strong alcohol that contains the same fixed amount of ethanol. The concept of a standard drink was introduced to help conceptualize and measure the absolute alcohol content of various beverage types and serving sizes. Various European countries have a standard drink which is equivalent to 10–12 g of pure alcohol. However, standard drink sizes vary, and the precise meaning may depend on the country and cultural context. The Russian Federation does not have such a concept, so – for convenience of calculation – the AUDIT experts decided that one standard drink would be equivalent to 10 g of pure alcohol.

In the following, the four risk levels that underlie the AUDIT are described.

From a health perspective, there is no safe level of alcohol consumption because ethanol is a carcinogen and the cancer risk starts to increase even at low levels of alcohol consumption. For all sites where alcohol's causal role in cancer has been established (oral cavity, pharynx, larynx, oesophagus, liver, colorectum and female breast), there is a clear dose–response relationship between level of alcohol consumption and risk of harm, with relative risk rising linearly with increasing volume of alcohol consumption (Bagnardi et al., 2015; Boffetta & Hashibe, 2006). While the risk of cancer increases in a linear fashion, for certain health outcomes, such as liver cirrhosis, pancreatitis, and certain cardiovascular diseases including hypertension and ischaemic stroke, the risk increases steeply with higher levels of drinking (Shield, Parry & Rehm, 2013).

The notion of relative risk relations has led some countries to develop lower-risk drinking guidelines, which set a certain threshold of standard drinks per day or week, below which the risk of alcohol-attributable harms is considered relatively low (Anderson et al., 1993; Broholm et al., 2016; Griswold et al., 2018; Rehm, Room & Taylor, 2008). When screened with the AUDIT or another screening tool, most people in a given country fall in this category of **lower-risk drinking**. For people in this risk group, general alcohol information and education is usually all that is required to increase awareness and motivate them to avoid increasing their drinking level. Using

the available evidence, in an attempt to keep risks at a lower level, some countries have also progressed to setting lower-risk drinking guidelines as a public health measure, at a threshold that varies from country to country (Box 2).

BOX 2. LOWER-RISK DRINKING GUIDELINES

To inform their populations about the overall health risks stemming from alcohol and to help individuals keep the risks to their health at a low level, some countries issue guidance on specific thresholds and risks. Just as the meaning of "standard drink" varies widely from country to country, so, too, do these drinking guidelines.

For instance, in the **United Kingdom** the guidelines say that men and women should not regularly drink more than 14 units of alcohol a week, spreading them evenly over three or more days; in this case, a unit of alcohol (that is, a standard drink) contains 8 g of pure alcohol and the guidelines are not sex-specific. In **Germany**, on the other hand, the guidelines say that women should not have more than one standard drink per day, men should not have more than two standard drinks per day, and everyone should have two alcohol-free days or more per week; the German standard drink, however, contains 12 g of pure alcohol. The guidelines in **Estonia**, operating with a 10 g standard drink, say that women should not have more than one standard drink per day and more than seven standard drinks per week, while men should not drink more than two standard drinks per day and 14 per week.

The overall idea of these guidelines is to increase awareness and health literacy with respect to alcohol and to communicate to the population that alcohol consumption comes with risks and that these risks increase with the amount consumed. Several countries issue lower-risk guidelines as part of a comprehensive approach to alcohol control policy: some adopt the limits for SBI used within the health-care system and other prevention settings; others make it mandatory to depict standard drinks on the labels of alcoholic beverages, so that consumers are more aware of the limits and the risks they face when purchasing and consuming these products.

In the European Region, WHO does not define any lower-risk drinking threshold and adheres to the principle: "The less, the better. None is the best."

The second risk level within the AUDIT stratification is **hazardous use** (Box 3). This is a pattern of alcohol use that increases the risk of harmful consequences to the drinker and others in the absence of any harmful consequences to the individual at the specific moment of assessment (Babor et al., 2001; WHO, 2014). This risk level can be managed with simple advice. One advantage of the new (11th) revision of the International Classification of Diseases (ICD-11) is that hazardous and harmful use, as well as dependence, are all defined in a single cross-referenced system.

BOX 3. HAZARDOUS USE

Hazardous use is a pattern of alcohol use that **increases the risk of harmful consequences for the user or others.** It is of public health significance despite the absence of any current disorders in the individual user. Unlike harmful use and dependence, it is not a diagnostic term (Babor et al., 2001; WHO, 2014).

The third and the fourth risk levels relate to patterns of alcohol use that are of clinical significance and denote AUDs as per ICD-10: **harmful use of alcohol** (F10.1) and **alcohol dependence syndrome** (F10.2) (Box 4). Patients at these two levels of risk usually need to be managed by a combination of brief advice and counselling, with follow-up, or referred to a specialist for diagnostic evaluation and possible treatment.

BOX 4. HARMFUL USE AND DEPENDENCE SYNDROME

AUDs are treated in the context of substance use disorders in ICD-10.

F10.1 Harmful use

A pattern of psychoactive substance use that is causing damage to health. The damage may be physical (as in cases of hepatitis from the self-administration of injected psychoactive substances) or mental (e.g. episodes of depressive disorder secondary to heavy consumption of alcohol).

F10.2 Dependence syndrome

A cluster of behavioural, cognitive and physiological phenomena that develop after repeated substance use and that typically include a strong desire to take the drug, difficulties in controlling its use, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.

Table 2 gives an overview of original AUDIT scores and risk levels, together with the types of intervention that may be offered within the health system. It should be noted, however, that these are based on the original multicountry study from 1989 and that there are now country-specific translations and scale adaptations of the AUDIT (see, for instance, Babor, Higgins-Biddle & Robaina, 2016; Babor & Robaina, 2016).

TABLE 2. Levels of risk and types of intervention as per the original AUDIT scores (without country-specific adaptation)

Total AUDIT score	Level of risk	Type of intervention
0–7	Lower risk	Alcohol education
8–15	Hazardous use	Simple advice
16–19	Harmful use	Simple advice plus brief counselling and continued monitoring
20–40	Possible alcohol dependence	Referral to specialist for diagnostic evaluation and treatment

A short version of the AUDIT, which consists of the first three items only (frequency, quantity and intensity of alcohol use – see Table 1), was developed in 1998 as part of a project in the USA (Bush et al., 1998). This shorter version, known as AUDIT-C (Alcohol Use Disorders Identification Test – Consumption), can be used as a standalone screening tool for early detection of AUDs in PHC when time or other resources do not permit administration of the full AUDIT (Drapkina et al., 2019; Reinert & Allen, 2007). Use of AUDIT-C depends crucially on accurate quantification of standard drinks and assessment of patterns of alcohol use. Each item in AUDIT-C is scored from 0 to 4, so the highest possible score is 12. Unlike the AUDIT, AUDIT-C does not have clearly set thresholds based on validation studies, and different institutions and settings may use different thresholds depending on the context. The higher the AUDIT-C score, the higher the risk of consequences from alcohol use for the patient.

1.3 Use of the AUDIT in the Russian Federation

The AUDIT is used in the Russian Federation for early detection of individuals with hazardous or harmful use of alcohol and possible alcohol dependence (Drapkina et al., 2019; Ministry of Health of the Russian Federation, 2019a). The first Russian translation of the AUDIT was made in 1997, as part of a substance abuse manual for resident physicians (WHO, 2009); since then, it has been used in various health-care settings, though not as part of routine medical procedures at PHC level. Numerous versions of the AUDIT, in Russian translation, are available in guidelines and clinical recommendations, books and monographs, and are used in research.

Since 2013, dispanserization – a two-stage process of health assessment and disease prevention conducted in the adult population – has been introduced in PHC settings, following introduction of a new set of guidelines (Boitsov et al., 2013) (Box 5).

BOX 5. DISPANSERIZATION

The process of dispanserization comprises a set of measures, prescribed by the laws of the Russian Federation, that include preventive medical examination (and other methods of examination) that are conducted to assess the state of health of certain population groups (this includes assigning patients to different categories on the basis of their health status for further dispensary observation). It is aimed at early detection of conditions and diseases, and of the risk factors for those conditions and diseases, including nonmedical use of narcotic drugs and psychotropic substances (Boitsov et al., 2013; Drapkina et al., 2019; Yakovleva et al., 2014). Dispanserization is carried out once every three years for the 18–39 age group, and once a year for the 40+ age group.

The first stage of dispanserization (sometimes referred to as screening) aims to detect symptoms of chronic NCDs and the risk factors for NCD development, including harmful use of alcohol, illicit drugs and psychoactive substances not prescribed by a doctor. It also aims to identify different health groups (as per the existing classification) and to determine medical indications for additional diagnostic testing and examination to be conducted by specialized physicians at the second stage of dispanserization.

The second stage consists of additional examinations for diagnosis clarification if these are indicated on the basis of the first-stage outcomes.

Initially, the dispanserization questionnaire contained the four questions of the CAGE[1] substance abuse screening tool, which was used to identify risk of harmful use of alcohol (Ewing, 1984). Depending on the results, the person received a brief intervention and/or was referred to the second stage of the dispanserization procedure, in which in-depth preventive counselling was given or referral to a specialist advised (Boitsov et al., 2013). In 2015, amendments were made in the part of the dispanserization guidance dealing with harmful use of alcohol according to which the AUDIT was used in the second stage of dispanserization (Boitsov et al., 2015). The screening results were used to inform a recommendation for further care. When a new edition of the guidance was issued in 2017, the CAGE test was replaced by AUDIT-C because of its higher sensitivity to detect harmful use of alcohol (Boitsov et al., 2017; Gornyi et al., 2018). If the self-administered AUDIT-C test at the first stage of dispanserization revealed risk of harmful alcohol use, the patient was referred to the second stage of dispanserization for individual in-depth consultation, at which point the full version of the AUDIT was offered, followed by intervention. Based on the results, a patient might receive brief advice, in-depth preventive counselling in PHC or (if possible dependence was indicated and the patient consented) referral to a narcology (addiction medicine) specialist (Boitsov et al., 2017). This algorithm remains in place to this day (Drapkina et al., 2019). However, the coverage, consistency and effectiveness of these activities and feedback from specialized care (i.e. narcology) have not so far been assessed (Neufeld et al., 2020a).

1.4 The need for an adaptation of the AUDIT in the Russian Federation

1.4.1 History of the AUDIT in the Russian Federation

As outlined above, the AUDIT was initially developed in such a way that it could be modified and adapted to fit the needs of a local health-care (or other) system. When adopting the AUDIT and adapting it to their local setting, countries could modify the representation of standard drinks, link the AUDIT scores to their national lower-risk drinking guidelines, and/or change other elements in order to incorporate the tool in their routine screening and intervention procedures, such as SBI algorithms.

In the Russian Federation, the first efforts to introduce SBI in the national health system were made in the early 2000s but did not yield any sustainable results (Heather, 2007; Mathew et al., 2009; Shellenberger et al., 2009; Shin et al., 2012 and 2013; WHO, 2006b). In 2016, WHO/Europe, in collaboration with a range of international experts and supported by the Russian Ministry of Health, developed and tested the *WHO alcohol brief intervention training manual for primary care* (WHO, 2017b), in which the AUDIT was included as a screening tool to evaluate the risks of hazardous and harmful alcohol use and potential alcohol dependence. This manual was published by WHO/Europe and translated into Russian (WHO, 2017b).

The panel of international experts involved in developing and testing the manual included, from the Russian Federation, representatives from the National Medical Research Center for Therapy and Preventive Medicine under the Ministry of Health, the V.P. Serbsky National Medical Research Center for Psychiatry and Narcology under the Ministry of Health, and the I.M. Sechenov First Moscow State Medical University under the Ministry of Health (Sechenov University). Testing included piloting parts of the manual as training materials for health-care workers in certain regions of the Russian Federation. Experience with alcohol brief interventions in the Russian Federation was discussed during a meeting in March 2018. During these discussions, concerns were raised over certain aspects of the Russian translation of the manual and especially the AUDIT. The major concerns over use of the AUDIT related to difficulties in defining the term “standard drink” in the Russian context – a problem that had already been noted by several research groups (Balashova, 2017; Cook et al., 2011). In addition, narcology experts were concerned that the AUDIT might not be able to detect risks related to specific patterns of alcohol use in the Russian Federation and neighbouring countries; these risks were mainly associated with heavy episodic drinking in which single

1 The name is an acronym of the tool’s four questions: Cut – Annoyed – Guilty – Eye-opener.

episodes of maximum alcohol intake were followed by lengthy periods of abstinence. The experts also noted that the AUDIT did not appropriately reflect the use of unrecorded alcohol (Box 6), which played a significant role in consumption patterns in the Russian Federation; and that the AUDIT-C contained thresholds based on expert judgement only and not on empirical evidence and validation research.

As a result of these discussions, the WHO Regional Office for Europe and the Ministry of Health of the Russian Federation decided to conduct a joint study of AUDIT adaptation and validation in the Russian Federation.

BOX 6. UNRECORDED ALCOHOL

The umbrella term "unrecorded alcohol" refers to alcohol that is not accounted for in official statistics on alcohol taxation or sales because it is usually produced, distributed and/or sold outside the formal channels under government control. It comprises several types of product, such as illegally produced or smuggled alcoholic beverages, homemade alcohol, and surrogate alcohol – alcoholic products that are officially not intended for drinking, such as colognes, lotions and alcohol for technical or industrial purposes.

1.4.2 A Russian Federation-wide adaptation and validation study of the AUDIT

The joint study of an AUDIT adaptation in and for the Russian Federation was a multi-stage process. The first stage involved translation and cross-cultural adaptation of the test to the local setting (Box 7). The second stage involved validation of the translated and adapted test. The validity of a research instrument is the extent to which it measures what it is designed to measure – the extent to which the results or scores it produces correspond to the test objectives and test variables; validation, on the other hand, is the process of producing sound evidence to demonstrate this link (Box 8). Thus, a validated test is one that measures exactly what it is supposed to measure, precisely for the purpose that it was intended.

BOX 7. TRANSLATION AND CROSS-CULTURAL ADAPTATION

Translation and cross-cultural adaptation is a process designed to produce different language versions of an instrument that are conceptually equivalent in each of the target countries/cultures. Translated according to a standardized methodology, the resulting test may differ from a linguistic perspective but retains theoretical dimensions that are present in the original concept. In the course of cross-cultural adaptation, some elements may be added to reflect local context. All amendments are recorded and tested in selected studies. WHO has developed a standard that specifies a direct operating procedure for the translation and cross-cultural adaptation of instruments.

Since different approaches to translation, adaptation and validation of instruments exist, WHO experts formulated a detailed study protocol for the entire process. This included various pre-studies designed to understand existing problems with alcohol screening in the Russian Federation, such as assessment of drinking patterns and standard drinks (Rehm et al., 2020; Sousa & Rojjanasrirat, 2011; WHO, 2009 and 2021a).

BOX 8. TEST VALIDATION

In validation of screening tests, the best way is to compare values of a screening test with values of a diagnostic test, which is used as a "gold standard" for comparison. This requires a separate study of psychometric characteristics – that is, an assessment of test **reliability** (the consistency of the test, or the extent to which it produces similar results under similar conditions) and **validity** (the degree to which the test measures what it is supposed to measure – in this case, its capacity to predict outcomes of the "gold standard" diagnostic test).

While translation and cross-cultural adaptation of a screening test do not necessarily require large sample sizes (this essentially depends on the test itself and the specific context in which it is used), the process of test validation usually requires statistical assessment of the test's psychometric properties. In general, determination of cutoff values of test scores and assessment of a test's psychometric properties require a large sample size in order to ensure a reliable classification of tested persons and hence a reliable determination of the test's diagnostic value. Often, this is a statistical analysis comparing the test being validated against the "gold standard" diagnostic or benchmark test or other criteria, which are deemed to be the best available classification tools or measurements.

Such a statistical comparison is usually carried out with the help of ROC (receiver operating characteristic) analysis. ROC analysis assesses the quality of a binary classification, such as patients with or without AUDs. The ROC curve is a graph that shows the performance of a classification model as its discrimination threshold is varied. The curve is constructed by plotting the rate of true positives (the proportion of individuals with disorders correctly classified as such) against the rate of false positives (the proportion of individuals without disorders falsely classified as individuals with disorders).

ROC analysis is used to classify patients (in this case, patients with or without AUDs) according to a test outcome and allows appropriate cutoffs of test scores to be determined in such a way that the best trade-off between a test's sensitivity and specificity is identified.

In test statistics, **sensitivity** is the proportion of individuals with a certain disorder that a test classifies as positive, while **specificity** is the proportion of individuals without a disorder that the test classifies as negative. The area under the [ROC] curve (AUC) is widely recognized as the measure of the test's discriminatory power. The larger the area, the higher the sensitivity and specificity of the test. The AUC of a hypothetical perfect test would be equal to 1.0 (100% sensitivity and 100% specificity), while a value of 0.5 shows no discriminative value, indicating a test that is useless and as random as the toss of a coin.

The sensitivity and specificity of a test are interrelated, and their values change with each cutoff value of the test score. The ROC curve and AUC offer a graphical illustration of these trade-offs for prediction and choice of optimal values/cutoffs, depending on the initial research request for a more specific or a more sensitive test, or for a potential compromise between the two parameters.

Often, to determine the best cutoff under circumstances that equally value sensitivity and specificity, the maximum value of **Youden's index** among all the different cutoff values – the difference between the proportion of true positive results and the proportion of false positive results – is selected. The larger the difference, the better the test performance. Values of Youden's index vary between 0 and 1; therefore, in a hypothetical perfect test, Youden's index would be equal to 1.

2. THE AUDIT VALIDATION AND ADAPTATION PROJECT IN THE RUSSIAN FEDERATION

2.1 Project goals and objectives

The overall project goal was to translate the AUDIT into the Russian language following a formal translation procedure; to adapt its short and long versions to the specific needs and drinking patterns of the Russian Federation; and to validate it in the Russian Federation for use in PHC settings in order to identify hazardous and harmful drinkers requiring some form of intervention.

The specific project objectives and project steps were:

- to carry out a formal search and analysis of Russian-language versions and validation studies of AUDIT in the Russian Federation;
- to translate the AUDIT into the Russian language as per the established protocol and to adapt it to accommodate specific alcohol use patterns and problems identified in the Russian Federation, thus creating a version of the tool (RUS-AUDIT) that is specific to the Russian Federation but also appropriate for use among Russian-speaking people in other countries that have similar drinking patterns;
- to validate the RUS-AUDIT in PHC settings in the Russian Federation in order to identify threshold values that would operationalize and correspond to various alcohol-related risk levels requiring different response measures in the health system; and
- to propose, on the basis of the analysis and results, full and short versions of the test appropriate for alcohol use risk screening in PHC settings.

The study protocol that was developed (Rehm et al., 2020; WHO, 2021a) included:

1. preliminary studies (pre-studies) and problem analysis
2. an adaptation of the AUDIT (RUS-AUDIT)
3. the main RUS-AUDIT validation study.

2.2 Project coordination and management

The project was carried out between December 2018 and February 2020 by the WHO Office in the Russian Federation, acting in collaboration with the WHO European Office for the Prevention and Control of Noncommunicable Diseases and with support from the Ministry of Health of the Russian Federation and health authorities of the regions involved in the validation study.

In December 2018, at the first meeting, the Project Advisory Board (PAB) was established to oversee project implementation (Fig. 1) and terms of reference were developed (Annex 1). The PAB included representatives from the leading research institutions in the field of preventive medicine and addiction care in the Russian Federation and from WHO:

- the Ministry of Health of the Russian Federation
- the National Narcology Research Center (a branch of the V.P. Serbsky Medical Research Center for Psychiatry and Narcology)
- the National Medical Research Center for Therapy and Preventive Medicine
- the Higher School of Public Health Management, I.M. Sechenov First Moscow State Medical University
- the Moscow Research and Practical Centre for Narcology
- the Federal Research Institute for Health Organization and Informatics
- the WHO Office in the Russian Federation
- the WHO European Office for the Prevention and Control of Noncommunicable Diseases.

FIG. 1. The RUS-AUDIT PAB and collaborators

At PAB meetings, board members received reports on implementation progress, discussed the main challenges and endorsed action plans. PAB members gave advice and support to the planning and implementation of preliminary studies for the overall project and contributed to the development of a joint protocol for the overall study (Rehm et al., 2020; WHO, 2021a). In total, four PAB meetings took place to establish and specify goals and objectives of the project and to formulate and agree on specific study protocols and outcomes. Meeting reports are available upon request from the WHO Office in the Russian Federation.

PAB activities ensured close collaboration between the Ministry of Health of the Russian Federation, specialized medical research centres, regional health institutions and international experts. Involvement of multiple partners helped to produce a better understanding of the PHC role in detection and prevention of hazardous and harmful alcohol use by the specialized narcology and health authorities. Raising awareness and engagement of PAB members throughout the entire project provided a broad exchange of knowledge and helped to gain invaluable experience in harmonization of Russian and international approaches, interdisciplinary collaboration, high-level expertise, and support in the achievement of practical outcomes.

2.3 Preliminary studies (pre-studies) and problem analysis

2.3.1 Systematic reviews of Russian-language translations of the AUDIT and validation studies in the Russian Federation

In order to document and analyse all existing Russian translations of the AUDIT and systematize validation experience of the tool in the Russian Federation, two systematic reviews based on searches of Russian-language electronic bibliographic databases were conducted. Search engines were also used to identify other relevant material.

The objective of the **first systematic review** was to search for validation studies of the AUDIT carried out in the Russian Federation and to document any kind of correlation between the AUDIT scores and other alcohol assessment results, such as the WHO Composite International Diagnostic Interview (CIDI), drinking diaries, biomarkers or an established diagnosis by a specialist according to ICD-10: F10.1 (Alcohol abuse [harmful use]) and F10.2 (Alcohol dependence). The researchers explored: 1) what AUDIT validation studies had previously been conducted in the Russian Federation; 2) what AUDIT thresholds for a brief intervention and referral to a specialist were mentioned in Russian-language publications; and 3) if there were any issues or specificities reported in the literature in relation to the use of the AUDIT in the Russian Federation.

The objective of the **second systematic review** was to identify (if possible) all available Russian-language translations of the AUDIT and to document any existing discrepancies between translations, including thresholds for hazardous and harmful use and potential alcohol dependence and recommendations for interventions in the health system. This review also aimed to document any existing issues with Russian translations in the Russian Federation and beyond.

The searches were conducted independently by two researchers,[2] and a detailed description of results was given in separate publications (Neufeld et al., 2021a; Bunova et al., 2021). The first search found only one AUDIT validation study, which had been conducted in 2009 in the Tomsk Oblast, Siberia, and included a sample of 252 patients treated in a tuberculosis hospital (Yanov et al., 2009). While the study reported good sensitivity and specificity of the AUDIT in individuals with a known risk of AUD, the sample was small and only included patients on specialized tuberculosis treatment. Other studies that compared AUDIT results with drinking diaries and biomarkers reported contradictory results, suggesting that there were problems with the use of the AUDIT in the Russian Federation. The second search found 61 different Russian translations of the original English-language AUDIT (Babor et al., 2001), the majority of them in materials from the Russian Federation. Major differences were identified in the first three questions about the pattern and quantity of alcohol consumption.

The following key problems emerged from the analysis:

- absence of, or uncertainty about, the definition of a standard drink, as well as different definitions of a standard drink in terms of pure alcohol content (in grams);
- use of different methods to provide information about a standard drink and its size;
- considerable inconsistencies between different Russian AUDIT versions in volumes of alcoholic beverages when converted into standard drinks/grams of pure alcohol;
- considerable deviations from the original AUDIT in the question and response options given in many translation versions;
- discrepancies in cutoff values and their interpretation for hazardous and harmful use and possible dependence.

2 The searches were carried out in accordance with the preregistered protocol in the International Prospective Register of Systematic Reviews (PROSPERO), registration number CRD42019128059.

2.3.2 Expert interviews on perceptions of the AUDIT by patients and health-care workers

To explore potential issues in understanding the AUDIT questions and selecting potential additional indicators of AUDs as part of the Russian adaptation, expert interviews with patients and health-care workers were conducted in addition to the two systematic reviews.

A total of 25 patients and 12 health-care professionals were interviewed by a trained interviewer following a predefined script which focused on frequency–volume test items, representation of standard drinks, the specificity of Russian drinking patterns, and potential additional questions on AUDs in the Russian context (Neufeld et al., 2021c). Patients were defined as experts as part of this assessment and recruited from different health settings, including narcology, preventive medicine and the polyclinic setting. Of the health-care workers interviewed, all had worked with the AUDIT as part of their clinical practice or research; most were narcologists, while the rest were health professionals of other specialties.

The interview findings corroborated the results of the systemic reviews:

- the concept of a standard drink was not familiar to patients and health-care professionals and had not been widely used in the Russian context;
- there were certain difficulties in defining the terms “single occasion” of drinking and “heavy episodic drinking (binge drinking)” in the Russian context.

Somewhat typical drinking behaviours and patterns found in the Russian Federation, which had previously been suggested in the literature as potential indicators of AUDs, were explored – namely, occurrence of excessive drunkenness, hangover or going to sleep at night clothed because of being drunk and consumption of certain types of unrecorded alcohol (Leon et al., 2007). The results corroborated previous findings that these behaviours might be useful potential test items as part of a screening instrument specific to the Russian Federation.

2.3.3 Overall conclusions of the pre-studies

Based on both the systematic reviews and the expert interviews, the following conclusions were drawn.

- There are various different Russian translations of the AUDIT, in the Russian Federation and beyond; this leads to difficulties with interpretation of the AUDIT results in the Russian context.
- None of the identified Russian AUDIT versions have been validated for use in PHC settings in the Russian Federation.
- The concept of a standard drink, without any accompanying explanation, is not understood by patients and health-care workers in the Russian Federation. The use of this concept without assistive devices such as pictorials or conversion tables is not feasible.
- The term “single occasion of drinking”, which is used in the third AUDIT item to denote heavy episodic drinking, is not understood, especially by heavy drinkers who consume without interruption for more than one day. To clarify assessment, this issue might be resolved by defining “one occasion” as a period of 24 hours.
- The use of pictorials with quantities consumed and conversion tables or the use of computer-assisted/mobile tools would allow patients to indicate volumes of alcoholic beverages consumed in familiar forms such as glasses or bottles; it might also be helpful to interviewers, allowing them to make quick conversions into standard drinks/grams of pure alcohol.

The results of the systematic reviews and expert interviews were presented at the second PAB meeting and informed the translation process and the development of a version of the AUDIT adapted for use in the Russian Federation; this would also include some of the identified AUD indicators as test items for the upcoming validation.

2.4 Translation and adaptation of the AUDIT for the Russian Federation

The official English version of the AUDIT (Babor et al., 2001) was translated into Russian in accordance with the standards for translating and adapting WHO tools (WHO, 2009).

The validation study started from the AUDIT version in the *WHO alcohol brief intervention training manual for primary care* (WHO, 2017b), which was used as a base and translated into Russian by a Russian health-care worker fluent in English and familiar with the AUDIT as part of the project in 2016. Then a working group of experts was set up that consisted of public health experts and health managers, professional translators, communication specialists and linguists. The expert panel discussed the translation and compared it with test versions from the website of one of the AUDIT developers (Auditscreen.org, 2021).

During these discussions, adjustments were made to the translated AUDIT, mainly to improve the formulation of questions and to take account of the specific findings of the pre-studies – specifically, the issues around quantification of drinking behaviours. For instance, a coloured show card displaying standard drinks was used to facilitate assessment (Gamboa et al., 2020). Also, following the findings of the qualitative interviews, three new test items were added to take account of potential AUD signs and consumption patterns specific to the Russian Federation (for these additional items, see Annex 2).

The adapted version of the tool, now referred to as the RUS-AUDIT, was piloted with 79 patients from PHC settings (Neufeld et al., 2021b). The pilot study was conducted as an interview with additional cognitive surveys according to the PAB-approved protocol. The results of the pilot study were discussed by the working group – specifically, the use of the standard drinks show card. Following these discussions, a conversion table of beverage volumes into standard drinks was added to the show card as an assistive device to help interviewers assess and count standard drinks. Some of the questions were also reformulated to improve comprehension.

The amended version was again piloted with 32 patients from the same facilities. The results of the second round of the pilot were discussed and approved by the expert panel and the revised test was presented at the third PAB meeting in May 2019, where there was a broad discussion of the pilot outcomes and the specific test items. The PAB suggested further amendments to the specific formulation of test items and changes to the standard drinks conversion table. The changes were introduced in the next version of the RUS-AUDIT and piloted in a new sample of patients, comprising a total of 56 patients from primary and specialized health-care facilities (this time, patients from narcology institutions were included in addition to those from PHC outpatient settings, or polyclinics). A summary of these pilot results and the finalized version of the RUS-AUDIT were sent to PAB members in July 2019 for final review and agreement.

As a result of this multistep process, the adapted RUS-AUDIT screening tool was produced. This comprised 10 main items, in line with the original AUDIT, and three additional test items on drinking behaviours specific to the Russian Federation, which were added for the validation study, following the outcomes of the pre-studies, as potential screeners for AUDs (Annex 2).

2.5. Validation of the RUS-AUDIT

2.5.1 Goal, objectives, sampling and instruments

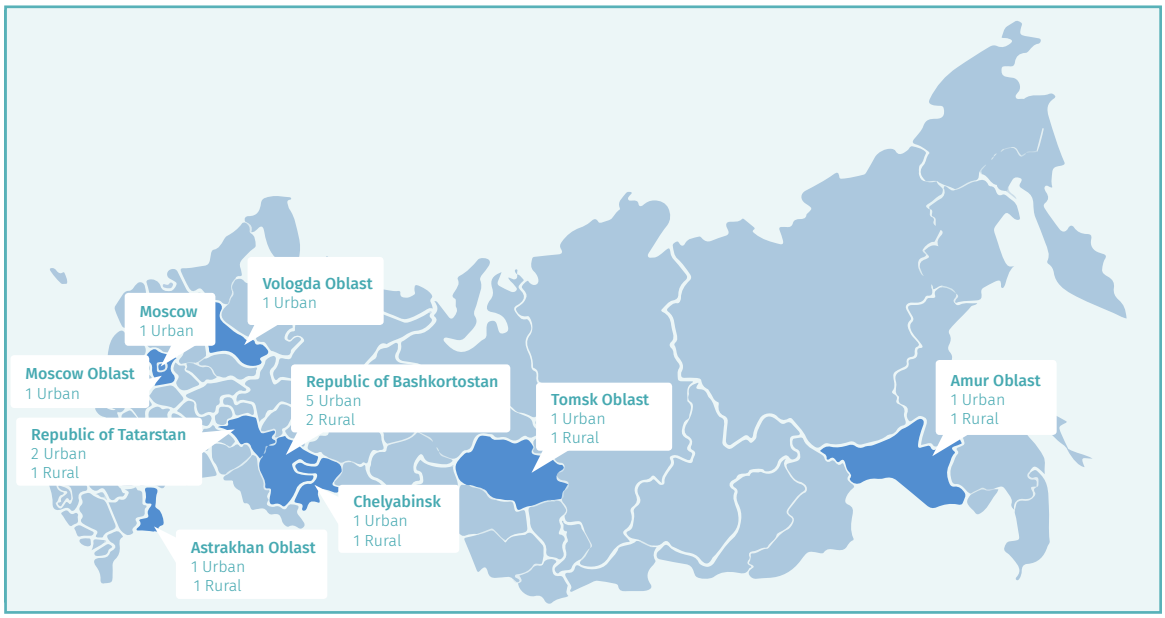
The RUS-AUDIT validation study took place between August 2019 and February 2020, using a cross-sectional study design with a single round of data collection. The RUS-AUDIT was used as the main instrument, accompanied by a set of other screening and diagnostic instruments, which could serve as measures relevant to future interventions and would provide a reliable reference for comparison.

The validation study pursued the following objectives:

- to operationalize alcohol use with the newly adapted RUS-AUDIT in order to allow the best identification of hazardous patterns of alcohol use in the context of the Russian Federation, specifically by examining the use of three additional test items included in the RUS-AUDIT;
- to determine the best cutoff values for brief advice/interventions in PHC settings;
- to determine the best cutoff values for harmful drinking patterns and AUDs and for interventions in PHC settings or referral to specialized treatment.

A total of 21 PHC facilities from nine Russian regions were selected and participated in the data collection, covering seven of the eight federal districts of the Russian Federation (Fig. 2). Support in the regions was provided by local administrations; this included allowing use of facilities and human resources (coordinators and interviewers) for the survey.

FIG. 2. PHC facilities from the regions of the Russian Federation participating in the study



A priori sample size calculations were conducted, following the requirements to detect an AUC of 70% with a 95% confidence level within ± 5%. Overall, these requirements can be seen as conservative, as a higher AUC would be expected. The calculated minimal sample size was 900 patients.

For the sampling procedure, the following quotas were established for the sub-sample from each region to secure representation of important sociodemographic groups: (1) ≥ 50% males; (2) ≥ 50% 40 years and older; and (3) not more than 50% recruited from a dispanserization setting.

The sampling frame included all patients who visited a participating PHC facility on the day of the interviews and met the inclusion criteria:

- aged at least 18
- consent to be interviewed given
- visiting a PHC facility for any reason.

Patients were recruited by the doctors or nurses treating them after they had received medical attention; they were then referred to trained interviewers, who performed the interview in a separate room.

All participants were required to provide verbal consent before the interviewers presented them with the standardized questionnaire, which included various assessment forms besides the RUS-AUDIT. For all participants, drinking and smoking status were assessed, as well as a set of basic demographic indicators (age, sex, housing and socioeconomic proxy). Current drinkers (that is, individuals who had consumed alcohol within the past 12 months) were further interviewed with the RUS-AUDIT, the Kessler Psychological Distress Scale (K10), and the AUDs module of CIDI. All these instruments were administered to all people with an AUDIT score of 5 and above, and to every third participant with a lower AUDIT score (Annex 3). Additionally, a subset of questions on unrecorded alcohol consumption was asked. Also, every third abstainer was screened with the K10, since this instrument applies to mental distress in general and is not confined to alcohol or to AUDs in particular. A detailed flowchart of recruitment, sample size and details of assessment pathways are described in the study protocol (Rehm et al., 2020; WHO, 2021a).

2.5.2 Interviewer training

Conducting a validation study required a standardized approach to interviewing in all regions of the Russian Federation. For this purpose, an interview manual and special training materials were developed as part of a "training for trainers" programme, in collaboration with Russian experts and with WHO support. Five experts representing the WHO European Office for the Prevention and Control of NCDs, the National Medical Research Center for Therapy and Preventive Medicine and the Higher School of Public Health Management of the I.M. Sechenov First Moscow State Medical University were involved in developing the training modules and sessions and were prepared to go to the field as trainers. A total of nine training sessions lasting six to seven hours were subsequently carried out between August and October 2019 in the participating regions, involving 60 potential interviewers. The interviewers represented various fields and professions, but the majority had a medical, psychological or social science background and had previous experience in interviewing and data collection.

The interviewer training was based on modules covering the basics of SBI for alcohol, the AUDIT structure, an overview of the RUS-AUDIT validation project, the basics of interviewing techniques, and a thorough overview of the applied instruments (Annex 4).

Theoretical background was introduced and discussed during the first part of the training, when interviewers were presented with general information about alcohol, the main features of the alcohol use continuum and risk levels, the main idea behind alcohol SBIs, and the AUDIT and its structure and risk levels as one of the existing tools. In the following session, the trainers explained the validation study protocol, its structure, the instruments used and the assessment flowchart and gave short input on interview methods and specific techniques.

The last and most extensive part of the training comprised hands-on training with the study instruments and focused on interviewing skills through role plays that were conducted to simulate the actual interview process. At the end of the training sessions, each trainee underwent an individual skills assessment in a role play testing

a specific interview situation, including handling difficult interview situations, in order to train communication skills.

Special attention was paid to calculating standard drinks by means of the newly developed conversion table, navigating the assessment flowchart, using accurate documentation and data entry procedures in the study forms, and displaying specific interviewing skills as part of role plays and simulations.

After completion of the full training, interviewers practised their skills in group role plays during which they received feedback both from trainers and from each other. After completion of the training, only those interviewers who had been able to demonstrate their ability to conduct an interview on their own, according to the protocol and using the appropriate set of all assessment forms, and to complete forms correctly were accepted as interviewers in the data collection procedure.

The interviewers were managed at local level by regional coordinators, who supervised data collection and reported back to the WHO core study team on a regular basis.

The WHO-led training was well received by the interviewers and allowed a large, well-coordinated study team to be formed. This, in turn, made it possible to make rapid adjustments to the data collection procedure and to improve overall data collection. The resulting database required minimal data-cleaning procedures, demonstrating the great skill and professionalism of the local interviewers.

2.5.3 Data collection and quality control

Data collection was carried out between August 2019 and February 2020 in 21 rural and urban PHC facilities in nine different regions. A total of 2030 participants were recruited as part of a probability sample, and at least 200 participants were recruited from each region.

Assessments were conducted as paper-and-pencil interviews, and the relevant forms were then scanned. The electronic copies were checked twice for completeness and overall quality – by the interviewer on the day of the interview and by the regional coordinator on a weekly basis – before they were sent to the designated focal point in the WHO European Office for the Prevention and Control of NCDs, who carried out a third check. The data were then entered following dual data entry procedures for random subsets of data, thus forming one database for all regions. Additional quality checks of data collections and entry procedures were provided by experts from the National Medical Research Center for Therapy and Preventive Medicine under the Ministry of Health and the I.M. Sechenov First Moscow State Medical University under the Ministry of Health (Sechenov University), working jointly with the WHO European Office for the Prevention and Control of NCDs.

Thus, a four-level quality control procedure was used in the data collection:

1. detailed checks of all completed assessment forms were conducted locally, first by the interviewers and then by regional coordinators, for completeness and quality;
2. regional coordinators made occasional random checks of the interview process over the course of the study, to ensure assessment quality;
3. dual data entry procedures were used for some subsets of data entered into the electronic database and further random checks of data entry were made by additional experts; and
4. descriptive statistical analysis, including systematic checks of missing data and plausibility checks, was conducted.

2.5.4 Statistical analysis

After all the quality control and data entry procedures, the initial database was cleaned and prepared for subsequent analysis. Statistical analysis was performed by the WHO European Office for the Prevention and Control of NCDs and again followed a multistep approach.

The first step was a descriptive statistical analysis of the study sample, exploring the total number of completed interviews and defining the final analytical sample size for the RUS-AUDIT validation study. The descriptive analyses looked at socio-demographic indicators such as distribution by sex and age, mean values including reported frequency of alcohol use, mode and median values of quantitative indicators, and minimum and maximum values of these indicators.

The next step included analysis of psychometric properties of the RUS-AUDIT, analysing the one-dimensionality, internal consistency and population distribution of the scale. One-dimensionality and internal consistency were determined through correlation of each item with the full scale.

Then, associations between AUDIT scores and key outcomes such as hazardous alcohol use and AUDs, as based on a priori definitions, were measured. Hazardous alcohol use was defined as >20 g/day for women and >40 g/day for men, based on the drinking categories identified by WHO and the European Medicines Agency (EMA, 2010). AUDs were based on the official diagnostic criteria as defined by the *Diagnostic and statistical manual of mental disorders* and ICD-10 (APA, 1994 and 2013; WHO, 2016). Associations between RUS-AUDIT scores and outcomes were determined by ROC curves, looking at the prediction characteristics of the RUS-AUDIT – specifically, at the ability of the screening test to correctly identify participants with hazardous use or AUDs (sensitivity) and to correctly identify participants without hazardous use or AUDs (specificity). As part of the ROC analysis, Youden's index was calculated to give information on the performance of the RUS-AUDIT and to assist in selecting the best cutoff values, taking into account the trade-off between sensitivity and specificity.

Additional analyses were carried out to determine if the three RUS-AUDIT items on drinking behaviours specific to the Russian Federation (excessive drunkenness, frequent hangovers, going to bed clothed because of intoxication) that were added on the basis of the pre-studies would improve the psychometric properties. While all three items correlated highly with the full scale, replacing the current items with the new ones or adding them to the full scale did not yield any significant improvement in the psychometric properties.

Finally, all possible combinations of three of the 13 RUS-AUDIT items [286] were tested for prediction of the full RUS-AUDIT, as for prediction of hazardous use and AUDs as specified above. Additionally, combinations were tested for the first 10 RUS-AUDIT items only, excluding the three extra items added for the validation study.

All predictive analyses were conducted separately for men and women in order to determine sex-specific cutoff scores, as risk levels associated with alcohol use are known to vary by sex (Lange et al., 2019).

3. RESULTS OF THE VALIDATION STUDY

3.1 Demographic characteristics of the sample

A total of 2173 respondents from nine regions were approached to take part in the study; of these, 143 (6.6%) refused to participate. Of the remaining 2030 respondents, two did not fall within the required age range and six had no entry on sex in the interview forms. Thus, the final sample size was 2022. The sample was almost evenly split by sex: 986 women (48.8%) and 1036 men (51.2%). The mean age was 41.9 years, ranging from 18 to 96. Regional distribution was fairly equal: 879 rural respondents (43.5%) and 1143 urban respondents (56.5%) (Table 3).

TABLE 3. Regional distribution of the overall sample

Region	Rural	Urban	Total	%
Republic of Bashkortostan	89	105	194	9.6
Republic of Tatarstan	100	111	211	10.4
Amur Oblast	148	155	303	15.0
Astrakhan Oblast	129	160	289	14.3
Vologda Oblast	0	199	199	9.8
Tomsk Oblast	100	103	203	10.0
Chelyabinsk Oblast	192	161	353	17.5
Moscow City	-	149	149	7.4
Moscow Oblast	121	-	121	6.0
Total	**879 (43.5%)**	**1143 (56.5%)**	**2022**	**100.0**

Out of the full sample, a total of 1513 respondents (74.8%) reported alcohol use during the past year; of these, 1497 had valid RUS-AUDIT scores and were used as the main sample for the RUS-AUDIT descriptive and inferential statistics. In general, the RUS-AUDIT proved to be easy to administer as part of the study, with only a small proportion of missing values (1.1%).

3.2 Good consistency and performance as a scale

Internal consistency of the RUS-AUDIT was good, with a Cronbach's alpha of 0.842, which is a good performance for a short test. All 10 items contributed to the scale and removal of any item resulted in a lower Cronbach's alpha value. Principal component analyses showed that the first item of the test explained 49.1% of the variance and none of the factor loadings were lower than 0.594.

3.3 Excellent predictive values in ROC analysis for various outcomes

The RUS-AUDIT had good psychometric properties for both sexes and predicted all the chosen outcomes, which are conceptualized as follows.

A. Hazardous alcohol use was based on the EMA thresholds for the lowest risk categories (consumption of 20+ g/day for women and 40+ g/day for men).

B. Problem drinking was used as an operational definition to denote a risk level on the RUS-AUDIT scale sufficient to initiate brief interventions at PHC level. This definition was based on certain test items of the CIDI module for AUDs – specifically, when a person was scoring on any of the test items assessing the following:

- health problems related to your drinking
- family or friends objecting to your drinking
- collapse of relationship with loved ones due to your drinking
- financial difficulties due to alcohol
- attack on or injury to another person while intoxicated
- problems with the police (drink–driving, accident)
- reduced time for (or abandonment of) important activities (work or leisure)
- a disease (e.g. liver disease, stomach problems) or psychological problems (depression, anxiety) due to drinking.

These CIDI items correspond with broader problems associated with alcohol use and some AUD symptoms, which partly meet the CIDI criteria for AUDs.

C. AUDs were based on ICD-10 definitions of harmful use of alcohol and alcohol dependence, using the relevant modules of the World Mental Health Survey Initiative version of CIDI (WHO WMH CIDI), as used in the large European study of alcohol in PHC (Rehm at al., 2015).

The AUC was greater than 0.83 in all models, and 74–94% of patients' outcome scores were correctly predicted. As anticipated, sex-specific thresholds were necessary for correct prediction of all outcomes, as using nonspecific thresholds resulted in very few women being identified.

Table 4 shows the threshold values, proportions of correctly predicted respondents, and sensitivity and specificity rates obtained when selecting the model with the best prediction characteristics. The best thresholds for hazardous drinking and problem drinking were selected based on Youden's index, while AUDs and alcohol dependence were selected based on accuracy and specificity. Overall, the RUS-AUDIT was slightly more accurate in its predictions for women than for men.

TABLE 4. Prediction characteristics of the RUS-AUDIT for different outcomes, by sex

Outcome (criterion for selection)	Threshold score on RUS-AUDIT		AUC (95% CI)		Correctly classified (*n*, %)[a]		Sensitivity (%)		Specificity (%)	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
Hazardous drinking[b]	5	9	0.964 (0.926–1.000)	0.919 (0.892–0.946)	543 (78.9)	596 (73.7)	100.0	98.2	78.6	71.8
Problem drinking[b]	6	10	0.831 (0.772–0.890)	0.857 (0.828–0.887)	301 (78.8)	476 (78.7)	74.3	67.3	79.9	89.4
AUDs (as defined in ICD-10)[c]	10	14	0.872 (0.820–0.925)	0.838 (0.805–0.872)	348 (91.1)	488 (80.7)	48.3	51.0	99.1	94.4
Alcohol dependence (as defined in ICD-10)[c]	11	17	0.936 (0.904–0.967)	0.879 (0.844–0.913)	360 (94.2)	528 (87.3)	57.6	47.6	97.7	97.1

a For hazardous drinking, *n* = 1497 (688 women, 809 men); for the other three criteria, *n* = 987 (382 women, 605 men).

b Selected based on Youden's index.

c Selected based on accuracy and specificity.

3.4 Alternative test items to capture Russian drinking patterns

Analysis of the three additional RUS-AUDIT items on drinking patterns specific to the Russian Federation – excessive drunkenness, frequent hangovers and going to sleep dressed because of intoxication – showed that they correlated highly with the full scale (Annex 2). However, replacing the current test item on heavy episodic drinking with one of these three new or adapted items did not improve the full scale (the alternative Cronbach's alpha scores were 0.833, 0.840 and 0.830, respectively).

Nevertheless, these alternative items had a high predictive value for alcohol dependence and other outcomes that might require interventions, even though the RUS-AUDIT score was relatively low and AUD criteria were not met. Given that these questions had not been used before in brief interventions, it was not possible to assess their effectiveness. It was decided, therefore, not to include them in the final version of the tool. Still, they may be used in the development of AUD scales for research purposes.

Accordingly, the final country-validated version of the RUS-AUDIT for use in Russian PHC facilities has a total of 10 test items (Table 5). In order to conduct the test, health-care professionals are advised to use a separate show card with a table to convert volumes of alcoholic beverages into standard drinks (Table 6). The conversion table is not only a support instrument for health-care workers, helping them to count standard drinks and to calculate the right items score – it can also be used as part of a brief intervention, to explain to patients how different alcoholic beverages contain different amounts of alcohol and to help them to better estimate and understand their own use and the associated risks.

TABLE 5. RUS-AUDIT (full validated version for the interview)

1. How often do you drink alcoholic beverages?

Never	0	Once a month or less	1	2–4 times a month	2	2–3 times a week	3	4 times a week or more 4

2. How many alcoholic drinks (standard drinks (SDs)) do you drink on a typical day when you drink?
[An SD contains 10 g of ethyl alcohol. The table shows examples of one SD.]
If on a typical day you drink several different alcoholic beverages, then add up the number of SDs.
[Interviewer – Show a colour chart of the conversion of volumes of alcoholic beverages into SDs.]

A small glass of wine or sparkling wine, 100 ml Alcohol 12–13%	**Half a glass of beer, 250 ml** Alcohol 4.5–5%	**A glass of fortified wine, 60 ml** Alcohol 16–22%	**A small glass of strong alcohol, 30 ml** Alcohol 40%	
				

[Interviewer – Specify how much alcohol the respondent consumes. Use the table below to convert volumes of alcoholic beverages into SDs. Indicate the number of SDs and record the scores.]

Wine or sparkling wine	Beer	Fortified wine	Strong alcohol	
Up to 250 ml	Up to 650 ml	Up to 170 ml	Up to 80 ml	**1–2 SDs** 0
251–450 ml	651–1200 ml	171–300 ml	81–140 ml	**3–4 SDs** 1
451–660 ml	1201–1750 ml	301–430 ml	141–210 ml	**5–6 SDs** 2
661–970 ml	1751–2500 ml	431–640 ml	211–300 ml	**7–9 SDs** 3
More than 970 ml	More than 2500 ml	More than 640 ml	More than 300 ml	**10 SDs or more** 4

3. How often do you consume at least 1.5 litre of beer, or at least 180 ml of strong alcohol, or at least a bottle of wine or champagne (750 ml) within 24 hours?

Never	0	Less than once a month	1	Monthly	2	Weekly	3	Daily or almost daily	4

4. How often in the past 12 months have you been unable to stop drinking alcohol once you have started to drink?

Never	0	Less than once a month	1	Monthly	2	Weekly	3	Daily or almost daily	4

5. How often over the past 12 months did you not do what was normally expected of you because of alcohol?

Never	0	Less than once a month	1	Monthly	2	Weekly	3	Daily or almost daily	4

6. How often over the past 12 months did you need to drink in the morning to recover after drinking the night before (to hangover-drink)?

Never	0	Less than once a month	1	Monthly	2	Weekly	3	Daily or almost daily	4

7. How often in the past 12 months have you felt guilt or regret after drinking?

Never	0	Less than once a month	1	Monthly	2	Weekly	3	Daily or almost daily	4

8. How often over the past 12 months have you been unable to recall what happened the day before because you were drinking?

Never	0	Less than once a month	1	Monthly	2	Weekly	3	Daily or almost daily	4

9. Did your drinking cause injury to you or other people?

Never	0	Yes, more than 12 months ago	2	Yes, during the last 12 months 4

10. Has someone close to you, or a relative, friend or doctor, ever worried about your drinking or advised you to drink less?

Never	0	Yes, more than 12 months ago	2	Yes, during the last 12 months 4

Write down the total score _____
Maximum score is 40.

TABLE 6. Table for conversion of volumes of alcoholic beverages into standard drinks (SDs)

How many alcoholic drinks (standard drinks) do you drink on a typical day when you drink?

A standard drink (SD) contains 10 g of ethyl alcohol. The pictures show examples of one SD. If on a typical day you drink several different alcoholic beverages, then add up the number of SDs.

A small glass of wine or sparkling wine, 100 ml Alcohol 12–13%	**Half a glass of beer, 250 ml** Alcohol 4.5–5%	**A glass of fortified wine, 60 ml** Alcohol 16–22%	**A small glass of strong alcohol, 30 ml** Alcohol 40%	
				

You can use the table below to convert ml of alcoholic beverages into SDs.

Wine or sparkling wine	**Beer**	**Fortified wine**	**Strong alcohol**	
Up to 250 ml	Up to 650 ml	Up to 170 ml	Up to 80 ml	**1–2 SDs**
251–450 ml	651–1200 ml	171–300 ml	81–140 ml	**3–4 SDs**
451–660 ml	1201–1750 ml	301–430 ml	141–210 ml	**5–6 SDs**
661–970 ml	1751–2500 ml	431–640 ml	211–300 ml	**7–9 SDs**
More than 970 ml	More than 2500 ml	More than 640 ml	More than 300 ml	**10 SDs and more**

To answer question no. 2 of the RUS-AUDIT, use the conversion table to change volumes of alcoholic beverages into SDs. Select the alcohol type and volume of the drink; then circle the corresponding number of SDs and points.

If on a typical day you drink different alcoholic beverages, then select all volumes of the alcoholic beverages consumed, add up the number of SDs, and mark the corresponding score.

3.5 Identification of an effective short version of the RUS-AUDIT

A short version of the RUS-AUDIT (RUS-AUDIT-S), consisting of three items drawn from the full version, was proposed to minimize screening time in PHC settings. In order to identify the best short version, all possible combinations of three items of the full RUS-AUDIT were selected and analysed using various statistical approaches. Sensitivity of models to changes in the parameters (sensitivity analysis) was run for all combinations, including the three alternative items added to cover distinctively Russian drinking patterns. A combination of three items with the highest correlation with the full scale was then selected: items 3, 9 and 10 proved to be the best combination to predict the score of the full RUS-AUDIT (Table 7). The Pearson correlation with the RUS-AUDIT as a whole was 0.923 with 85.3% of variance explained. The RUS-AUDIT-S proved to be significantly better than the commonly used AUDIT-C (which combines the first, second and third test items), including for separating risk levels for women and men.

TABLE 7. RUS-AUDIT-S (short validated version for the interview)

1. How often do you consume at least 1.5 litre of beer, or at least 180 ml of strong alcohol, or at least a bottle of wine or champagne (750 ml) within 24 hours?									
Never	0	Less than once a month	1	Monthly	2	Weekly	3	Daily or almost daily	4

2. Did your drinking cause injury to you or other people?					
Never	0	Yes, more than 12 months ago	2	Yes, during the last 12 months	4

3. Has someone close to you, or a relative, friend or doctor, ever worried about your drinking or advised you to drink less?					
Never	0	Yes, more than 12 months ago	2	Yes, during the last 12 months	4

Write down the total score _____ *Maximum score is 12.*

The combination of three items selected for the RUS-AUDIT-S proved to be the best average predictor of all tested outcomes: hazardous use, problem use, AUDs – harmful use or alcohol dependence according to ICD-10, alcohol dependence or alcohol abuse according to DSM-IV or AUDs as defined in DSM-V. For the RUS-AUDIT-S, some results were predicted even better than with the full RUS-AUDIT.

As some previous large studies in the Russian Federation had used the AUDIT-4 (Shin et al., 2012), all possible combinations of four items were tested as well. The combination used in the AUDIT-4 did not score better than the RUS-AUDIT-S for any of the outcomes. In fact, not only did it perform worse than the three-item combination of RUS-AUDIT-S (items 3, 9 and 10), but the best average four-item combination of the RUS-AUDIT (items 1, 3, 9 and 10) yielded better results than the AUDIT-4.

The RUS-AUDIT-S, consisting of items 3, 9 and 10 of the full RUS-AUDIT, is recommended as the best and most effective short version of the test (see Table 7).

3.6 Applying RUS-AUDIT and RUS-AUDIT-S in PHC

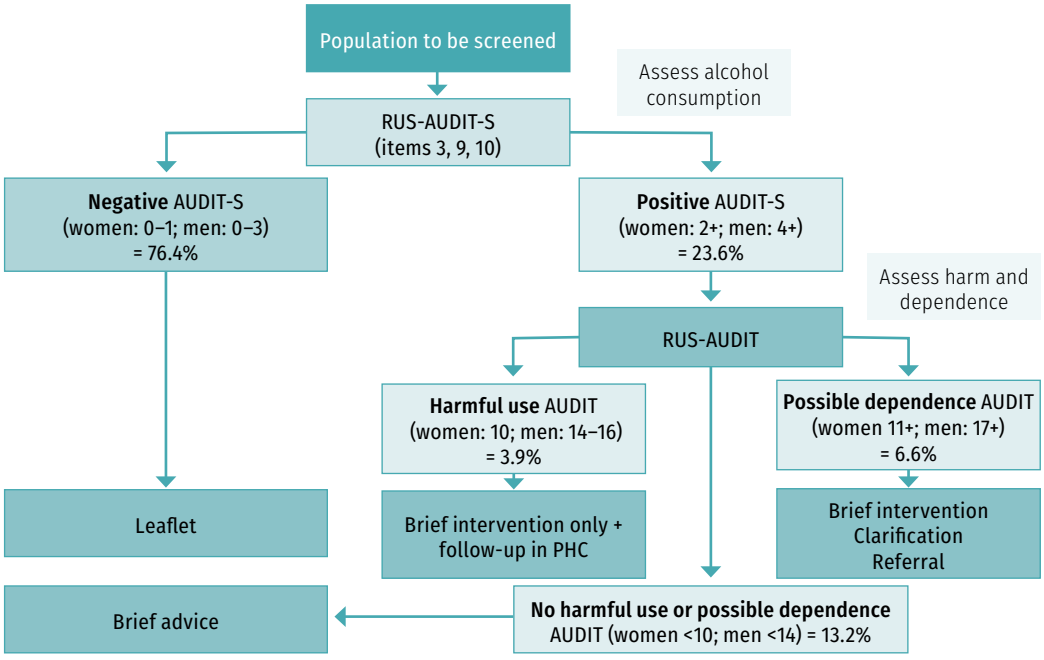
The following are procedural suggestions for potential use of the RUS-AUDIT and RUS AUDIT-S in PHC settings in the Russian Federation. The suggested steps follow generally accepted rules for use of SBIs (WHO, 2006a):

- screening for level of alcohol use and detection of hazardous and harmful drinking should happen at PHC level;
- the most efficient method is to screen with a short screening instrument and to determine further steps on the basis of the result of the first screening; and
- the result of the first screening should determine different levels of intervention, ranging from distribution of educational materials to recommendation of a specialist consultation (in the context of the Russian Federation, with a narcologist).

The thresholds were determined on the basis of the sensitivity and specificity of the RUS-AUDIT and RUS-AUDIT-S, which were calculated on the basis of testing across a large sample of PHC patients. As the sample was large and covered very different regions, we anticipate that the thresholds will apply across the Russian Federation. While we can give evidence-based thresholds for different interventions, the exact implementation should be informed by local considerations.

Fig. 3 gives an overview of one of several possible applications that use both the full and the short versions, as summarized in one algorithm. When patients who use alcohol visit a PHC facility, they are screened at least yearly with the short test – RUS-AUDIT-S. If the result is negative (below the suggested cutoff), the patient receives general information about the consequences of alcohol use, such as an educational leaflet on the effects of alcohol. If the result is positive (above the suggested cutoff), the patient is screened further with the full 10-item version of the RUS-AUDIT in order to detect the specific risk level and so place the patient in the appropriate risk group with the appropriate interventions. Patients with a high risk of alcohol dependence receive a brief intervention and might be referred, with their consent, to a narcologist for further counselling. Patients with scores below the suggested cutoff for harmful use and alcohol dependence receive brief advice on reducing alcohol consumption and their individual risks and an educational leaflet about the effects of alcohol. Patients with the risk of harmful use of alcohol and without signs of possible alcohol dependence receive a brief intervention and follow-up at PHC level.

FIG. 3. A possible application algorithm combining RUS-AUDIT-S and RUS-AUDIT at PHC level



In order to facilitate screening, it is suggested that a coloured show card of standard drinks with an integrated conversion table of beverage volumes is used; this can help health workers to convert volumes of alcoholic beverages into standard drinks when asking question 2 of the RUS-AUDIT (Table 6).

Table 8 gives an overview of how the study sample was distributed across the various thresholds of the full RUS-AUDIT and the RUS-AUDIT-S. It shows that the vast majority of screened patients (77.3% of women and 67% of men) are likely to score in the first two risk levels of lower risk and hazardous use and therefore to require only a brief intervention in the form of a leaflet and brief advice. The proportion of individuals with hazardous use among men and women was similar (almost 18%), but providing brief advice for this group to reduce their alcohol consumption should not represent a major burden for PHC workers. The most intensive efforts by PHC workers would be needed for only 0.9% of women and 6.4% of men with harmful alcohol use, and for individuals with potential alcohol dependence (3.9% of women and 8.9% of men), who may require further consultation by a narcologist. It is important to note that this refers only to current drinkers – that is, individuals who had consumed alcohol in the past 12 months. The overall distribution therefore suggests that the anticipated workload for PHC services is reasonable and manageable and that introducing the RUS-AUDIT and its empirically established thresholds will not overwhelm the system.

TABLE 8. Sex-specific cutoffs of the RUS-AUDIT and RUS-AUDIT-S, showing risk levels, interventions and distribution of the study sample

Risk level	Intervention	RUS-AUDIT				RUS-AUDIT-S			
		Score		Number and percentage of sample		Score		Number and percentage of sample	
		Women	Men	Women	Men	Women	Men	Women	Men
Lower risk	Leaflet	0–4	0–8	523 (77.3%)	542 (67.0%)	0–1	0–3	572 (83.1%)	571 (70.6%)
Hazardous use	Brief advice	5–9	9–13	123 (17.9%)	143 (17.7%)	2–4	4–6	80 (11.6%)	135 (16.7%)
Harmful use	Brief intervention and monitoring in PHC	10	14–16	6 (0.9%)	52 (6.4%)	5	7	12 (1.7%)	41 (5.1%)
Possible dependence	Further assessment, possible referral to specialist	11+	17+	27 (3.9%)	72 (8.9%)	6+	8+	24 (3.5%)	62 (7.7%)

The overall results of the RUS-AUDIT validation process were reported to the PAB, discussed and approved by the board, and published. During this meeting, the experiences and reflections of the regional coordinators and interviewers were presented, alongside the lessons learned from use of the adapted test in the field. After discussion of the data, a general agreement on and understanding of the role of PHC services and workers in lowering alcohol-associated risks were reached. The first-hand experiences of the Russian Federation in validating the AUDIT raised interest in other countries of the WHO European Region, and some representatives from these countries attended the meeting as observers, eager to learn about test adaptation and validation with a view to applying the knowledge when adapting and/or validating the AUDIT in their own settings.

Meanwhile, the results of the RUS-AUDIT validation process have been undergoing peer review, and various substudies (Bunova et al., 2021; Neufeld et al., 2021a), the protocol (Rehm et al., 2020) and the main results have been accepted for publication in peer-reviewed journals (Neufeld et al., 2021d).

SUMMARY OF THE MAIN CONCLUSIONS OF THE RUS-AUDIT VALIDATION

1. The final validated RUS-AUDIT for use in PHC settings consists of 10 items, which work well as a scale. Internal consistency of the RUS-AUDIT was good (Cronbach alpha: 0.842).
2. The three additional items on drinking patterns specific to the Russian Federation may be used for further research purposes but were not included in the final scale (Annex 2).
3. The RUS-AUDIT-S is a short version consisting of items 3, 9 and 10 of the full RUS-AUDIT; it predicts the full scale well, with a Pearson correlation of 0.923 and 85.3% of variance explained.
4. The RUS-AUDIT is a short and easy-to-apply test that requires minimal preparation by healthcare workers; it possesses good psychometric and excellent predictive qualities, with an AUC higher than 0.83 for all chosen outcomes.
5. The selected thresholds of the RUS-AUDIT and RUS-AUDIT-S will not significantly overburden PHC facilities if SBI is introduced as a routine procedure in the Russian Federation, as only about one in every 10 patients screened will require some form of monitoring and further follow-up.

4. LESSONS LEARNED FROM THE RUS-AUDIT VALIDATION PROJECT

As an international and interdisciplinary project, the RUS-AUDIT validation study involved various experts and stakeholders and offered various lessons to be learned both from the initial stage of the study protocol development and from the various steps of the RUS-AUDIT construction and adaptation, data collection and analysis. There were also important discussions that took place within the PAB.

4.1 Overall reflections on the validation project and its success

The PAB demonstrated the effectiveness of multiple stakeholder involvement: steering implementation of the validation study at all stages; ensuring its success in fulfilling all stated objectives; and securing consensus and cooperation of experts from different fields of medicine and from national public health institutions at federal and regional levels and international organizations, under the guidance of the Ministry of Health of the Russian Federation and WHO.

Overall, the validation study provided WHO and national partners with a unique experience of joint collaboration and application of best practices in the validation of instruments in the field of health care.

The validation study in the regions of the Russian Federation showed that organizational commitment is crucial, and all involved, including physicians, nurses, medical assistants, administrative staff and referral institutions, should be part of the implementation.

4.2 Specific reflections on the performance of the RUS-AUDIT as an interview tool in PHC facilities

Overall, the RUS-AUDIT performed well as a screening instrument in PHC settings in the Russian Federation, both in terms of its usability and the kind of interviewer training needed in order to screen with the RUS-AUDIT and in terms of its psychometric properties as a scale.

Specific reflections on the validation study can be summarized as follows.

- Overall, the RUS-AUDIT received positive feedback from both interviewers and respondents in the study. The tool was seen as an effective screener for alcohol, easy and quick to use and to comprehend.
- Thorough interviewer training, interviewers' and coordinators' commitment to good scientific practice, and anonymity and confidentiality of the interview situation allowed for the best possible alcohol assessment in the context of PHC facilities. While it is well known that alcohol use is always underreported in surveys and screenings, the RUS-AUDIT data showed that the amount of missing values was generally quite low. This was probably due to well-organized module-based training of interviewers, which was specifically developed and tailored to the needs of the validation study; to the availability of a practical manual containing essential information and practical tips for interviewers; and to an instant feedback loop between interviewers in the field, regional coordinators and trainers, and the core study coordination team, which allowed any data collection issues to be identified and fixed very quickly.
- The well-planned and coordinated organizational efforts, following the study protocol that had been developed, helped to overcome various challenges in the field and to ensure a standardized approach that was adopted by all regions of the Russian Federation involved in the study.

- On the practical level of screening, the study revealed and confirmed a number of issues related to the perception and comprehension of test items. During training of the interviewers, one major challenge was related to quantification of standard drinks needed for item 2 of the AUDIT, on volume of alcohol typically consumed. This required a detailed explanation and highlighting of case examples. The interviewers learned to work with supporting materials such as a conversion table to help them to calculate standard drinks; they also used various case examples in order to learn how to work with the conversion table, to count standard drinks, and to assign test scores to the relevant test item. Overall, this part of the training did not take much time and the conversion table was generally well received by both interviewers and, later, participants.

- During the fieldwork, interviewers noted that the main challenges occurred at the beginning of the study and were mainly related to calculation of standard drinks, explanation of a "typical day" to respondents with heavy episodic drinking that occurred over several days, the somewhat challenging and unfamiliar formulation of the third test item, and sensitive questions that might cause personal embarrassment in both interviewers and participants. One of the specific challenges for some interviewers was also the limited working time allocated for other duties. Some of these issues were addressed through the development of personal interviewing skills as part of the training. Others required a more detailed consultation with trainers. Difficulties with calculation of standard drinks and the "typical day" of drinking were addressed through case examples during the training and specific guidance on this was given as part of the interviewer manual.

- During assessment of the results and ongoing data collection, the most frequent issue concerned incorrect calculation of standard drinks and total RUS-AUDIT score, especially at the beginning of the study. However, it was possible to fix this issue quickly during the ongoing fieldwork and as part of the individual feedback loop for every interviewer.

- As of today, there is no official national definition of "hazardous alcohol use" in the Russian Federation. If such a concept is ever introduced, its definition should be specific to drinking patterns that are typically found in the Russian Federation and are relevant at the general population level – namely, relatively long periods of abstention, followed by occasions of heavy episodic drinking, intoxication and hangover, which may cause problems for individuals and those close to them. To date, conventional definitions of hazardous alcohol use found in the scientific literature have been based on continuous (almost daily) alcohol use, which is not prevalent in the Russian Federation. Accordingly, an additional concept of "problem drinking" was used as an operational definition in the study to denote a certain risk level, which was positioned lower than harmful use or possible alcohol dependence in the outlined continuum of harms and suggested levels of intervention. The subsequent statistical analysis distinguished problem drinking as a separate risk category with specific thresholds for risks and suggested interventions.

Overall, the validation study revealed that one of the great challenges of the RUS-AUDIT was correct assessment of standard drinks consumed on a typical day of drinking. Both the quantification of standard drinks and comprehension of the term "typical drinking day" proved to be problematic in several pre-studies as well as in the main validation study. This issue must be taken into account when training health professionals to use the RUS-AUDIT as a screening instrument and should also be reflected in the relevant training materials. On the other hand, the RUS-AUDIT-S, the short version of the tool, has dispensed with this potentially problematic and time-consuming test item and offers a shorter and much easier-to-use item combination, which has been shown to predict outcomes as well as the full version of the test.

4.3 General lessons learned from the RUS-AUDIT validation study for the WHO European Region

Other countries in the WHO European Region that might wish to adapt the AUDIT to the specific needs and challenges of their local health-care systems and to validate it as the WHO-developed and recommended screening instrument for alcohol use may find the experiences outlined here useful. The specific lessons to be learned are summarized in the list below, together with technical considerations for experts who prepare their own adaptation or validation studies of the AUDIT or who consider implementing the RUS-AUDIT in their own settings to assess alcohol use and related risks in Russian-language populations.

- Consider forming a project advisory board for joint discussions of the study design and of critical issues in planning, data collection and data analysis and for joint and interdisciplinary interpretation of results.
- Develop a clear study protocol encompassing all necessary study steps as early as possible, preferably involving a range of stakeholders and institutions to gain different perspectives on screenings and the current needs of the health-care system.
- Consider conducting preliminary studies (pre-studies) as part of the initial problem analysis, especially if a rapid review of existing literature on the AUDIT in a given setting yields mixed and inconclusive results.
- Since the main aim of the AUDIT is to stratify current drinkers according to their risk level and to offer them appropriate interventions based on their risk level and, if possible, in line with local lower-risk drinking guidelines, summarize already existing guidelines and definitions.
- Prepare recommendations on appropriate risk levels and interventions as offered by and/or possible within the health-care system.
- Conduct a mapping exercise of the system, if necessary, to identify specific areas and services where SBIs (as well as potential referrals) can be carried out as part of a continuum of care for people with risky drinking patterns and potential AUDs.
- Consider adding or adapting AUDIT test items to capture specific drinking behaviours and related risks as relevant within the local setting; conduct statistical method validation of the resulting scale in order to see how the new items contribute to the scale and if they are helpful in predicting outcomes.
- Consider using assistive devices such as conversion tables to help convert volumes of alcoholic beverages into standard drinks as part of the second AUDIT item, if the concept of standard drinks is not familiar and used within a given setting. Test the feasibility of such assistive devices as part of the pilot studies.
- Conduct all translation procedures in line with existing WHO operational procedures on translation and adaptation of instruments; invest in piloting different versions of the instrument in various settings where it is planned to use the final AUDIT.
- Consult a range of experts (preferably an expert panel or a specially formed advisory board) and discuss specific methods of test validation; discuss and select a specific mode of validation and the instruments needed for this (for instance, in order to draw a comparison with a “gold standard”).
- Invest in thorough training of interviewers, preferably following a standardized module-based training approach

- Ensure that there are various feedback loops and good coordination of interviewers and data collection procedures on the ground.
- Minimize the time between data collection and data entry and ensure that there is individualized feedback to interviewers so that any data issues can be detected and fixed as early as possible.
- Consider conducting the pilots and the validation study in different regions and settings, if it is planned to use the AUDIT in diverse settings.
- Assess the need for a short version of the test; identify the best item combination as part of the statistical analysis.
- Consider if any adaptation is needed to produce a self-administered form of the test; the principal idea is that the AUDIT should be delivered as a screening interview by a trained health-care worker or another trained professional, depending on the setting.
- Develop support and training materials for PHC and other health workers who need to be trained to use the AUDIT as part of screening procedures.

5. RECOMMENDATIONS FOR USE OF THE RUS-AUDIT IN THE RUSSIAN FEDERATION

The full version (RUS-AUDIT, 10 items) and the short version (RUS-AUDIT-S, three items) have been demonstrated to detect individuals with hazardous and harmful alcohol consumption. Accordingly, both versions, with their associated cutoffs derived from the validation study, can be used as short, reliable and valid screening tools in PHC settings in the Russian Federation.

Moreover, use of the tests can be explored in other settings, beyond the field of health care and wherever screening for risky use of alcohol is recommended. For instance, the AUDIT is currently recommended as part of occupational screening procedures in the "public health promotion packages" of corporate programmes to improve the health of the working population, as prepared by the Russian Ministry of Health (Ministry of Health of the Russian Federation, 2019).

As demonstrated by the results of the validation study, the RUS-AUDIT and the RUS-AUDIT-S:

- facilitate practical and short screening for alcohol use in PHC settings;
- are understood by patients and easy to use in the form of an interview by health professionals;
- do not require a lot of time and other resources for training (especially the RUS-AUDIT-S);
- work well as scales and have good psychometric properties, including prediction of AUDs with high precision; and
- may be considered for introduction in PHC-level practice beyond dispanserization (for example, in routine general practice, to assess alcohol use risks and provide relevant brief interventions), and as a tool to ensure appropriate referral of patients with risk of dependence syndrome to specialized narcology services.

Following the overall lessons learned from the study and in light of existing evidence of the effectiveness of this type of intervention, health-care providers at PHC level should routinely ask about alcohol consumption. In doing so, as explained in section 3.6, they can use the full and/or the short version of the RUS-AUDIT as a standard screening tool to establish levels of risk. Once the risk level has been determined, they can either give brief advice and provide an intervention (if trained to do so) or, if an AUD is suspected, offer a referral for further assessment and specialist support.

The most important properties and potential application areas of the RUS-AUDIT and its short version are summarized in Table 9.

TABLE 9. Overview of the main properties and potential application areas of the RUS-AUDIT and RUS-AUDIT-S

RUS-AUDIT	RUS-AUDIT-S
• A 10-item version of the test, which requires use of a coloured show card to convert volumes of alcohol to standard drinks and minimal interviewer training to assess and calculate standard drinks on a typical drinking day. • Allows for nuanced stratification of current drinkers into different risk levels and offers the possibility of targeted interventions as per risk level. • Can assess risk levels of alcohol use and may be used as a link for further referral and diagnostic assessment. • Can be used by preventive medicine specialists and other specially trained health workers in polyclinics, health centres and other settings where health workers have time for screening and can provide targeted interventions.	• A three-item short version of the test, which requires no further assistive devices and very little training. • Allows for binary classification of current drinkers into lower risk and possible AUD for further evaluation and interventions. • Can assess risk of AUDs and may be used as a link for further referral and diagnostic assessment. • Can be used by health workers, including mid-level health professionals, in polyclinics and other PHC settings and as part of dispanserization procedures to detect possible AUDs and to refer patients for further assessment and evaluation.

While neither version of the test requires more than minimal training to conduct a screening, implementation of the specific test version should always consider the specific setting where the screening is to be carried out. It is reasonable to suggest that the RUS-AUDIT, the 10-item version, should be used only by trained health-care workers who have time and resources to deliver brief interventions for alcohol as part of the screening procedure and therefore need a more detailed assessment of risk level. Also, use of the show card and conversion table for calculating standard drinks as part of the 10-item version of the test can be a useful entry point for delivering a brief intervention – as a way for health workers to start the often uneasy conversation about alcohol use and its consequences, by educating patients about how they can count the amount they consume, and to dispel myths about the harmlessness of alcohol as part of their diet. Health-care providers may consider delivering these screening and intervention procedures as part of an integrated package that includes other risk factors.

For all these reasons, this study offers grounds for further consideration of use of the RUS-AUDIT and its short version in the Russian Federation. In addition, the study suggests further areas for potential review. For example, the validation results have implications for the way alcohol is currently addressed as a risk factor in the health-care system of the Russian Federation. The distribution of risk in the analysed sample of more than 2000 people from 20 PHC facilities in nine Russian regions shows that, while there is a large proportion of people who drink at low levels or abstain from alcohol altogether, there is also a significant proportion of individuals who drink at hazardous levels and who, though not meeting any diagnostic criteria for AUDs, would benefit from brief interventions at PHC level. This shows that alcohol needs to be addressed at PHC level, that different levels of intervention may be required, and that a clear algorithm is needed for referral to specialized care professionals (narcologists, in the Russian context). At the same time, considering that there may be different entry points in the system to address alcohol consumption, it would be helpful to have a mapping of existing services, referral mechanisms and existing laws that regulate referral. Further consideration and analysis are needed of any barriers that may deter people, through fear of being penalized, from talking to health professionals about their alcohol consumption.

Overall considerations and potential next steps and recommendations that stem from the evidence of the study can be summarized as follows.

- Possible implementation settings should be explored, in particular for the RUS-AUDIT-S, as a short, simple screening instrument that requires no specific training and has been shown to be highly effective in identifying possible risks of AUDs. The risks and benefits of this screening should also be explored.
- An integrated approach and specific implementation algorithms for brief and other interventions at PHC level should be developed that are based on the sex-specific cutoffs of the RUS-AUDIT for different risk levels. Necessary referral and re-referral pathways for patients with potential AUDs for further assessment, analysis and follow-up in PHC and specialized services should be identified.
- Consideration should be given to specific capacity-building measures for health-care professionals at different levels and in different settings, to increase patients' knowledge of alcohol and to dispel the most common myths about alcohol, including its alleged health benefits as part of balanced diets. Specific measures should be taken to give training in skills related to SBIs for alcohol, addressing alcohol as a broad risk factor for health and well-being (not limited to AUDs alone) and the issue of stigmatization of people with AUDs.
- Consideration should be given to adapting the RUS-AUDIT and the RUS-AUDIT-S as self-assessment questionnaires and to developing a digital application for assessment of alcohol use (including more intuitive assessment of standard drinks) and evaluation of risk levels.
- To facilitate use of the RUS-AUDIT in routine PHC practice, a manual for health-care workers should be developed, giving instructions on how to use the RUS-AUDIT and support tools (such as conversion tables and/or digital applications) for alcohol use and risk level assessment. Training materials for use of the RUS-AUDIT in SBI, specific to the Russian Federation, should be developed further, based on the training materials that were developed for use in the study.

Further recommendations that could be considered include the following.

- The way in which alcohol is currently addressed in the health-care system, including specialized narcology care, could be documented as part of a system-mapping exercise that would highlight the different paths followed by patients with different risk levels. The current interfaces between PHC and narcology could be identified and consideration given to conducting a special assessment of the needs of the different services and the barriers that hinder interaction between them.
- The need for changes in the law concerning patients diagnosed with AUDs in the health-care system could be explored in order to overcome specific barriers that prevent people with risky alcohol use who do not want to be registered as narcological patients from seeking help. It is important to ensure that narcological monitoring and registration procedures and the stigma associated with alcohol use do not become a barrier to screening in PHC facilities and that there is a continuum of care.
- Consideration could be given to developing and introducing national lower-risk guidelines in line with the RUS-AUDIT stratification of risk levels; these could be implemented within a comprehensive framework of action in the health system to raise awareness of the overall health risks of alcohol use. Although the most recent evidence clearly shows that there is no safe level of drinking, the idea that individual risk increases with increasing consumption and, in particular, with episodes of heavy drinking seems to be particularly relevant

in the Russian context. Such drinking guidelines could be developed on the basis of the RUS-AUDIT study validation data and used in PHC settings as part of SBI procedures to explain the risk continuum and overall health impacts of alcohol; they could also be integrated in relevant screening modules for risk factors, including nutrition.

Introduction of the RUS-AUDIT and RUS-AUDIT-S as part of SBI in Russian PHC facilities requires appropriate support with regulatory backup and training, which should be based on the study materials that were developed specifically for the Russian context. In particular, it seems necessary that Russian regulatory documentation should include definitions of hazardous and/or problematic alcohol use as defined by the RUS-AUDIT cutoff points and risk levels; appropriate standard operating procedures, referral/counter-referral practices and information flow between PHC and specialized care (as well as community settings, where applicable) should also be specified.

As one of the next steps in RUS-AUDIT implementation in the Russian Federation, it is suggested that an organizational evaluation of the health-care system should be carried out; this should consider the degree to which its structures, internal communication mechanisms, resources, leadership and organizational culture facilitate adoption of the RUS-AUDIT. As part of this, there should be further investigation of the degree to which the RUS-AUDIT meets the system's needs and fits in with its established procedures in the course of implementing SBI for alcohol. For instance, what would need to be done for RUS-AUDIT screening procedures and results to be included in health records, thereby facilitating individualized monitoring and targeted follow-up procedures? Depending on health system capacities and tasks at PHC and other levels, the risk categories selected for further interventions and the types of intervention offered could be defined by national authorities.

Another area that is yet to be explored is use of the RUS-AUDIT as part of digitalization of the Russian health system. To facilitate implementation of brief interventions as a cost-saving routine in PHC and other health settings and to ensure availability of comparable data, the possibility of administering the RUS-AUDIT as a digital tool could be explored. Use of mobile applications as tools to deliver screening and, potentially, brief interventions for alcohol would reduce the time required for screening and potentially ensure accuracy of self-reported alcohol consumption, which in turn might increase the effectiveness of the relevant interventions.

The training materials developed for the validation study and the professional personnel involved in the study could be useful, at both federal and regional levels, in developing and organizing further training for SBI and creating specific tools and materials for application of the RUS-AUDIT. Capacity-building and continuous provision of training and support to tailor interventions to overcome the barriers experienced by individuals are key elements in achieving a sustained implementation, and for this reason it is vital that the measures needed to make this happen are considered for the future.

6. CONCLUSION: TOWARDS IMPLEMENTATION OF SBIs AS PART OF A CONTINUUM OF CARE

Alcohol consumption and the burden it imposes on individuals, families, communities and societies present some of the greatest health and societal challenges in the Russian Federation and other countries of the WHO European Region. Alcohol is a broad risk factor for communicable and noncommunicable diseases, mental health, maternal and child health, injuries and many more, all of which extend well beyond the scope of the narcology setting (WHO, 2020). Alcohol use has been identified as a causal factor for more than 200 diseases, health conditions and injuries, including the most common causes of deaths such as cardiovascular diseases and cancers (Rehm et al., 2017).

Alcohol harm hits the most vulnerable hardest and exacerbates existing health inequalities, as is evidenced by the fact that that similar levels of alcohol consumption cause greater harm to the health of more deprived individuals (Collins, 2016; Probst et al., 2020; WHO, 2018a).

Provision of SBI for alcohol at PHC level has been recognized as an effective strategy to educate patients about the risks of alcohol use and the different risk levels, to reduce individual risk, and to take preventive measures before the health and social consequences of risky use become pronounced and require more specialized and costly intervention (Babor et al., 2001). However, the success of such an approach depends on various factors, including the availability of a good and easy-to-use screening instrument, which is accepted by health-care workers and patients alike. It is for this reason that the availability of the adapted and validated RUS-AUDIT opens up opportunities for scaling up implementation of SBI in PHC settings in the Russian Federation.

Construction, adaptation and validation of the RUS-AUDIT and its short version, the RUS-AUDIT-S, followed a rigorously developed methodological framework. The results presented in this report stem from the largest AUDIT country validation study that has, to our knowledge, ever been undertaken. The validated short and long forms of the AUDIT, the established thresholds and the analysed sample distribution – not to mention the knowledge gained in the course of the validation process – provide a solid foundation for implementing SBIs for AUDs in the Russian health-care system. The entire validation exercise, and the RUS-AUDIT itself as its end product, will be instrumental in achieving not only a further reduction in risky levels of drinking and AUDs in the Russian Federation but also, potentially, an overall reduction in alcohol per capita consumption at the population level – one of the national public health strategic priorities. Introducing routine screening practices for alcohol use at the level of PHC facilities, alongside routine screening for tobacco use, physical inactivity and unhealthy dietary behaviours, will further raise awareness of alcohol as a leading risk factor for diseases and premature mortality that goes far beyond the scope of narcology services. Health professionals have a key role to play in raising their patients' awareness of the enormous contribution of alcohol to premature mortality, not least from very common causes of death such as cardiovascular and digestive diseases, cancers and injuries.

Reduction of alcohol use and AUDs at the population level has not only been set as the specific target of the Russian Federation's national goal to reduce alcohol consumption and alcohol-attributable harms and so increase life expectancy; it is also a key element in the country's new strategy to prevent NCDs, in which reduction of alcohol use was conceived as a specific target (Neufeld et al., 2020a). Today, the

Russian Federation's per capita consumption is lower than that of several western European countries, thanks to the various alcohol control measures that have been introduced; yet its alcohol-attributable fractions for all-cause mortality are almost four times higher than in these other countries (Khaltourina & Korotayev, 2015; Nemtsov, Neufeld & Rehm, 2019; Neufeld & Rehm, 2013; Neufeld et al., 2020b; WHO, 2019 and 2021c). Implementing SBIs at the level of PHC facilities and improving access to early interventions for people who may have AUDs but are not willing to reach out to narcology services for help seems one of the key elements in reducing alcohol-attributable mortality in the Russian Federation and so closing this gap.

REFERENCES

Anderson P, Cremona A, Paton A, Turner C, Wallace P (1993). *The risk of alcohol. Addiction.* 88(11):1493–508. doi:10.1111/j.1360-0443.1993.tb03135.x.

Angus C, Latimer N, Preston L, Li J, Purshouse R (2014). *What are the implications for policy makers? A systematic review of the cost-effectiveness of screening and brief interventions for alcohol misuse in primary care.* Front Psychiatry. 5:114. doi:10.3389/fpsyt.2014.00114.

APA (1994). *DSM IV: diagnostic and statistical manual of mental disorders, 4th edition.* Arlington (VA): American Psychiatric Association.

APA (2013). *Desk reference to the diagnostic criteria from DSM-5. Arlington (VA): American Psychiatric Association* (https://www.appi.org/Products/DSM-Library/Desk-Reference-to-the-Diagnostic-Criteria-From-DSM, accessed 25 May 2021).

Auditscreen.org (2021). *AUDIT: translations* (https://auditscreen.org/translations, accessed 25 May 2021).

Babor TF (2010). *Alcohol: no ordinary commodity: research and public policy, 2nd edition.* New York (NY): Oxford University Press (https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199551149.001.0001/acprof-9780199551149, accessed 25 May 2021).

Babor TF, Higgins-Biddle JC (2001). *Brief intervention for hazardous and harmful drinking: a manual for use in primary care.* Geneva: World Health Organization (https://apps.who.int/iris/handle/10665/67210, accessed 24 May 2021).

Babor TF, Higgins-Biddle JC, Robaina K (2016). *The Alcohol Use Disorders Identification Test, adapted for use in the United States: a guide for primary care practitioners.* Rockville (MD): Substance Abuse Mental Health Services Administration/Center for Substance Abuse Treatment (https://sbirt.webs.com/USAUDIT-Guide_2016_final-1.pdf, accessed 25 May 2021).

Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro M (2001). *AUDIT: the Alcohol Use Disorders Identification Test: guidelines for use in primary care, 2nd edition.* Geneva: World Health Organization (https://apps.who.int/iris/handle/10665/67205, accessed 24 May 2021).

Babor TF, Robaina K (2016). *The Alcohol Use Disorders Identification Test (AUDIT): a review of graded severity algorithms and national adaptations.* Int J Alcohol Drug Res. 5:17–24. doi:10.7895/ijadr.v5i2.222.

Bagnardi V, Rota M, Botteri E, Tramacere I, Islami F, Fedirko V et al. (2015). *Alcohol consumption and site-specific cancer risk: a comprehensive dose-response meta-analysis.* Br J Cancer. 112(3):580–93. doi:10.1038/bjc.2014.579.

Balashova AA (2017). *Rol immunno-vospalitelnykh izmeneniy v otsenke kharaktera alkogolnogo porazhenija pecheni. Torasemid SR v lecheniji otechno-astsiticheskogo sindroma pri tsirroze pecheni [The role of immune inflammatory changes in the evaluation of liver damage due to alcohol. Torasemid SR in the treatment of edematous ascitic syndrome in cirrhosis]* [dissertation]. Moscow: Peoples' Friendship University of Russia (in Russian) (http://dissovet.rudn.ru/web-local/prep/rj/index.php?id=17&mod=dis&dis_id=1662, accessed 25 May 2021).

Barry KL, Blow FC, Willenbring ML, McCormick R, Brockmann LM, Visnic S (2004). *Use of alcohol screening and brief interventions in primary care settings: implementation and barriers.* Subst Abus. 25(1):27–36. doi:10.1300/J465v25n01_05.

Boffetta P, Hashibe M (2006). *Alcohol and cancer. Lancet Oncol.* 7(2):149–56. doi:10.1016/S1470-2045(06)70577-0.

Boitsov SA, Drapkina OM, Kalinina AM, Ipatov PV, Vergazova EK, Gambaryan MG et al. (2017). *Organizatsija provedenija dispanserizatsiji opredelennykh grup vzroslogo naselenija. Metodicheskije rekomendatsiji po prakticheskoi realizatsiji prikaza Minzdrava Rossiji ot 26 oktjabrja 2017 g. №869н [Organization of conducting dispanserization of certain adult groups. Guidance on practical implementation of Order of the Ministry of Health of the Russian Federation of 26 October 2017* No. 869н]. Moscow: Ministry of Health of the Russian Federation (in Russian) (http://docs.cntd.ru/document/556623052, accessed 25 May 2021).

Boitsov SA, Ipatov PV, Kalinina AM, Vergazova EK, Tkacheva ON, Gambaryan MG et al. (2015). *Organizatsija provedenija dispanserizatsiji opredelennykh grup vzroslogo naselenija. Metodicheskije rekomendatsiji po prakticheskoi realizatsiji prikaza Minzdrava Rossiji (36ан) [Organization of conducting dispanserization of certain adult groups. Guidance on practical implementation of Order of the Ministry of Health of the Russian Federation (36ан)].* Moscow: Ministry of Health of the Russian Federation (in Russian) (http://docs.cntd.ru/document/420265578, accessed 25 May 2021).

Boitsov SA, Vylegzhanin SV, Gambaryan MG, Gulin AN, Yeganyan RA, Zubkova II et al. (2013). *Metodicheskiye rekomendatsiji "Organizatsija provedenija dispanserizatsiji i profilakticheskikh medicinskikh osmotrov vzroslogo naselenija" [Guidelines "Organization of conducting dispanserization and preventive medical examination of adult population"].* Moscow: Ministry of Health of the Russian Federation (in Russian) (http://www.garant.ru/products/ipo/prime/doc/70229844, accessed 25 May 2021).

Broholm K, Galluzzo L, Gandin C, Ghirini S, Ghiselli A, Jones L et al. (2016). *Good practice principles for low risk drinking guidelines.* Helsinki: National Institute for Health and Welfare (THL) (http://urn.fi/URN:ISBN:978-952-302-734-3, accessed 25 May 2021).

Bunova A, Neufeld M, Ferreira-Borges C, Bryun E, Fedeeva E, Gil A et al. (2021). *The Russian translations of the Alcohol Use Disorders Identification Test (AUDIT): a document analysis and discussion of implementation challenges.* Int J Alcohol Drug Res. 9(1):20–30. doi:10.7895/ijadr.

Bush K, Kivlahan DR, McDonell MB, Fihn SD, Bradley KA (1998). *The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test.* Arch Intern Med. 158(16):1789–95. doi:10.1001/archinte.158.16.1789.

Collins SE (2016). *Associations between socioeconomic factors and alcohol outcomes.* Alcohol Res. 38(1):83–94. PMID: 27159815.

Cook S, De Stavola B, Saburova L, Kiryanov N, Vasiljev M, McCambridge J et al. (2011). *Socio-demographic predictors of dimensions of the AUDIT score in a population sample of working-age men in Izhevsk, Russia.* Alcohol Alcohol. 46(6):702–8. doi:10.1093/alcalc/agr076.

Drapkina OM, Drozdova LY, Kalinina AM, Ipatov PV, Yegorov VA, Ivanova YE (2019). *Organizatsija provedenija profilakticheskogo medicinskogo osmotra i dispanserizatsiji opredelennykh grup vzroslogo naselenija. Metodicheskije rekomendatsiji po prakticheskoi realizatsiji prikaza Minzdrava Rossiji ot 13 marta 2019 g. №124н [Organization of conducting preventive medical screening and dispanserization of certain adult groups. Guidance on practical implementation of Order of the Ministry of Health of the Russian Federation of 13 March 2019 No. 124н]. Moscow: Ministry of Health of the Russian Federation (in Russian)* (http://mpmo.ru/content/2019/10/Metodicheskie-rekomendatsii-po-poryadku-provedeniya-PMO-i-D.pdf, accessed 25 May 2021).

EMA (2010). *Guideline on the development of medicinal products for the treatment of alcohol dependence.* London: European Medicines Agency (https://www.ema.europa.eu/documents/scientific-guideline/guideline-development-medicinal-products-treatment-alcohol-dependence_en.pdf, accessed 31 March 2021).

Ewing JA (1984). *Detecting alcoholism. The CAGE questionnaire.* JAMA. 252(14):1905–7. doi:10.1001/jama.252.14.1905.

Gamboa D, Jørgenrud B, Bryun EA, Vindenes V, Koshkina EA, Nadezhdin AV et al. (2020). *Prevalence of psychoactive substance use among acutely hospitalised patients in Oslo and Moscow: a cross-sectional, observational study.* BMJ Open. 10(9):e032572. doi:10.1136/bmjopen-2019-032572.

Gornyi BE, Kalinina AM, Bunova AS, Drapkina OM (2018). *Metodologicheskiye aspekty vyjavlenija lits s riskom pagubnogo potreblenija alkogolja v khode dispanserizatsiji vzroslogo naselenija: problemy and vozmozhnyje puti ikh reshenija [Methodological aspects of detecting individuals with the risk of harmful alcohol use in the course of dispanserization of adults: problems and possible solutions].* Prev Med. 21(2):11–14 (in Russian).

Griswold MG, Fullman N, Hawley C, Arian N, Zimsen SR, Tymeson HD et al. (2018). *Alcohol use and burden for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016.* Lancet. 392(10152):1015–35. doi:10.1016/S0140-6736(18)31310-2.

Heather N (2007). *A long-standing World Health Organization collaborative project on early identification and brief alcohol intervention in primary health care comes to an end.* Addiction. 102(5):679–81. doi:10.1111/j.1360-0443.2007.01844.x.

Holland CL, Pringle JL, Barbetti V (2009). *Identification of physician barriers to the application of screening and brief intervention for problem alcohol and drug use.* Alcohol Treat Q. 27(2):174–83. doi:10.1080/07347320902784890.

Johnson M, Jackson R, Guillaume L, Meier P, Goyder E (2011). *Barriers and facilitators to implementing screening and brief intervention for alcohol misuse: a systematic review of qualitative evidence.* J Public Health (Oxf). 33(3):412–21. doi:10.1093/pubmed/fdq095.

Khaltourina D, Korotayev A (2015). *Effects of specific alcohol control policy measures on alcohol-related mortality in Russia from 1998 to 2013.* Alcohol Alcohol. 50(5):588–601. doi:10.1093/alcalc/agv042.

Kohn R, Saxena S, Levav I, Saraceno B (2004). *The treatment gap in mental health care. Bull World Health Organ.* 82(11):858–66. PMID: 15640922.

Lange S, Shield K, Monteiro M, Rehm J (2019). *Facilitating screening and brief interventions in primary care: a systematic review and meta-analysis of the AUDIT as an indicator of alcohol use disorders.* Alcohol Clin Exp Res. 43(10):2028–37. doi:10.1111/acer.14171.

Leon DA, Saburova L, Tomkins S, Andreev E, Kiryanov N, McKee M et al. (2007). *Hazardous alcohol drinking and premature mortality in Russia: a population based case-control study.* Lancet. 369(9578):2001–9. doi:10.1016/S0140-6736(07)60941-6.

Lundin A, Hallgren M, Balliu N, Forsell Y (2015). *The use of Alcohol Use Disorders Identification Test (AUDIT) in detecting alcohol use disorder and risk drinking in the general population: validation of AUDIT using schedules for clinical assessment in neuropsychiatry.* Alcohol Clin Exp Res. 39(1):158–65. doi:10.1111/acer.12593.

Mathew TA, Yanov SA, Mazitov R, Mishustin SP, Strelis AK, Yanova GV et al. (2009). *Integration of alcohol use disorders identification and management in the tuberculosis programme in Tomsk Oblast, Russia.* Eur J Public Health. 19(1):16–8. doi:10.1093/eurpub/ckn093.

Ministry of Health of the Russian Federation (2019a). *Klinicheskije rekomendatsiji po diagnostike i lecheniju alkogolnoi zavisimosti [Clinical recommendations on diagnosis and treatment of alcohol dependence].* Moscow: Ministry of Health of the Russian Federation (in Russian) (https://psychiatr.ru/download/4251?view=1&name=%D0%9A%D0%A0+%D0%B0%D0%B-B%D0%BA%D0%BE%D0%B3%D0%BE%D0%BB%D1%8C%D0%BD%D0%B0%D1%8F+%D0%B7%D0%B0%D0%B2%D0%B8%D1%81%D0%B8%D0%BC%D0%BE%D1%81%D1%82%D1%8C.pdf, accessed 25 May 2021).

Ministry of Health of the Russian Federation (2019b). *"Ukrepleniye obshchestvennogo zdorov'ya" ["Strengthening public health"].* Moscow: Ministry of Health of the Russian Federation (https://minzdrav.gov.ru/poleznye-resursy/natsproektzdravoohranenie/zozh, accessed 25 May 2021).

Nemtsov A, Neufeld M, Rehm J (2019). *Are trends in alcohol consumption and cause-specific mortality in Russia between 1990 and 2017 the result of alcohol policy measures?* J Stud Alcohol Drugs. 80(5):489–98. PMID: 31603746.

Neufeld M, Bunova A, Ferreira-Borges C, Bryun E, Gil A, Gornyi B et al. (2021a). *The Alcohol Use Disorders Identification Test (AUDIT) in the Russian language: a systematic review of validation efforts and application challenges.* Research Square (https://www.researchsquare.com/article/rs-154267/v1, accessed 25 May 2021). doi:10.21203/rs.3.rs-154267/v1.

Neufeld M, Bunova A, Fadeeva E, Nadezhdin A, Tetenova E, Vyshinsky K et al. (2021b). *Translating and adapting the Alcohol Use Disorders Identification Test (AUDIT) for use in the Russian Federation: a multicenter pilot study to inform validation procedures.* 10.6084/m9.figshare.14888427

Neufeld M, Bunova A, Gornyi B, Ferreira-Borges C, Gerber A, Khaltourina D et al. (2020a). *Russia's national concept to reduce alcohol abuse and alcohol dependence in the population 2010–2020: which policy targets have been achieved?* Int J Environ Res Public Health. 17(21):8270. doi:10.3390/ijerph17218270.

Neufeld M, Ferreira-Borges C, Bunova A, Gornyi B, Fadeeva E, Koshkina E et al. (2021c). *Capturing Russian drinking patterns with the Alcohol Use Disorders Identification Test: an exploratory interview study in primary healthcare and narcology centers in Moscow.* 10.6084/m9.figshare.14888385

Neufeld M, Ferreira-Borges C, Gil A, Manthey J, Rehm J (2020b). *Alcohol policy has saved lives in the Russian Federation.* Int J Drug Policy. 80:102636. doi:10.1016/j.drugpo.2019.102636.

Neufeld M, Rehm J (2013). *Alcohol consumption and mortality in Russia since 2000: are there any changes following the alcohol policy changes starting in 2006?* Alcohol Alcohol. 48(2):222–30. doi:10.1093/alcalc/ags134.

Neufeld M, Rehm J, Bunova A, Gil A, Gornyi B, Rovira P et al. (2021d). *Validation of a screening test for alcohol use, the Russian Federation.* Bull World Health Organ. 2021;99:496–505. doi:10.2471/BLT.20.273227.

Probst C, Kilian C, Sanchez S, Lange S, Rehm J (2020). *The role of alcohol use and drinking patterns in socioeconomic inequalities in mortality: a systematic review.* Lancet Public Health. 5(6):e324–e332. doi:10.1016/S2468-2667(20)30052-9.

Rathod SD, Roberts T, Medhin G, Murhar V, Samudre S, Luitel NP et al. (2018). *Detection and treatment initiation for depression and alcohol use disorders: facility-based cross-sectional studies in five low-income and middle-income country districts.* BMJ Open. 8(10):e023421. doi:10.1136/bmjopen-2018-023421.

Rehm J, Allamani A, Della Vedova R, Elekes Z, Jakubczyk A, Landsmane I et al. (2015). *General practitioners recognizing alcohol dependence: a large cross-sectional study in 6 European countries.* Ann Fam Med. 13(1):28–32. doi:10.1370/afm.1742.

Rehm J, Gmel GE Sr, Gmel G, Hasan OSM, Imtiaz S, Popova S et al. (2017). *The relationship between different dimensions of alcohol use and the burden of disease: an update.* Addiction. 112(6):968–1001. doi:10.1111/add.13757.

Rehm J, Lange S (2019). *The use of the Alcohol Use Disorders Identification Test (AUDIT) in general population surveys: a systematic scoping review.* Toronto: Centre for Addiction and Mental Health (CAMH).

Rehm J, Neufeld M, Yurasova E, Bunova A, Gil A, Gornyi B et al. (2020). *Adaptation of and protocol for the validation of the Alcohol Use Disorders Identification Test (AUDIT) in the Russian Federation for use in primary healthcare.* Alcohol Alcohol. 55(6):624–30. doi:10.1093/alcalc/agaa067.

Rehm J, Room R, Taylor B (2008). *Method for moderation: measuring lifetime risk of alcohol-attributable mortality as a basis for drinking guidelines.* Int J Methods Psychiatr Res. 17(3):141–51. doi:10.1002/mpr.259.

Reinert DF, Allen JP (2007). *The alcohol use disorders identification test: an update of research findings.* Alcohol Clin Exp Res. 31(2):185–99. doi:10.1111/j.1530-0277.2006.00295.x.

Saunders JB, Aasland OG, Babor TF, de la Fuente JR, Grant M (1993). *Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption – II. Addiction.* 88(6):791–804. doi:10.1111/j.1360-0443.1993.tb02093.x.

Shellenberger S, Seale JP, Harris DL, Johnson JA, Dodrill CL, Velasquez MM (2009). *Applying team-based learning in primary care residency programs to increase patient alcohol screenings and brief interventions.* Acad Med. 84(3):340–6. doi:10.1097/ACM.0b013e3181972855.

Shield KD, Parry C, Rehm J (2013). *Chronic diseases and conditions related to alcohol use.* Alcohol Res. 35(2):155–73. PMID: 24881324.

Shin S, Livchits V, Connery HS, Shields A, Yanov S, Yanova G et al. (2013). *Effectiveness of alcohol treatment interventions integrated into routine tuberculosis care in Tomsk, Russia.* Addiction. 108(8):1387–96. doi:10.1111/add.12148.

Shin S, Livchits V, Nelson AK, Lastimoso CS, Yanova GV, Yanov SA et al. (2012). *Implementing evidence-based alcohol interventions in a resource-limited setting: novel delivery strategies in Tomsk, Russia.* Harv Rev Psychiatry. 20(1):58–67. doi:10.3109/10673229.2012.649121.

Sousa VD, Rojjanasrirat W (2011). *Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: a clear and user-friendly guideline.* J Eval Clin Pract. 17(2):268–74. doi:10.1111/j.1365-2753.2010.01434.x.

WHO (2006a). *Screening and brief intervention for alcohol problems in primary health care.* Geneva: World Health Organization (http://www.who.int/substance_abuse/activities/sbi/en, accessed 25 May 2021).

WHO (2006b). *WHO Collaborative Project on Identification and Management of Alcohol-related Problems in Primary Health Care: report on phase IV: development of country-wide strategies for implementing early identification and brief intervention in primary health care.* Geneva: World Health Organization (https://apps.who.int/iris/handle/10665/43519, accessed 25 May 2021).

WHO (2009). *Process of translation and adaptation of instruments. Management of substance abuse.* Geneva: World Health Organization (https://www.who.int/substance_abuse/research_tools/translation/en, accessed 25 May 2021).

WHO (2012). *European action plan to reduce the harmful use of alcohol 2012–2020.* Copenhagen: WHO Regional Office for Europe (https://www.euro.who.int/__data/assets/pdf_file/0008/178163/E96726.pdf, accessed 25 May 2021).

WHO (2014). *Lexicon of alcohol and drug terms published by the World Health Organization.* Geneva: World Health Organization (https://www.who.int/substance_abuse/terminology/who_lexicon/en, accessed 25 May 2021).

WHO (2016). *International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10).* Geneva: World Health Organization (https://icd.who.int/browse10/2016/en, accessed 25 May 2021).

WHO (2017a). *Tackling NCDs: "best buys" and other recommended interventions for the prevention and control of noncommunicable diseases.* Geneva: World Health Organization (https://apps.who.int/iris/handle/10665/259232, accessed 25 May 2021).

WHO (2017b). *WHO alcohol brief intervention training manual for primary care. Copenhagen: WHO Regional Office for Europe* (http://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/publications/2017/who-alcohol-brief-intervention-training-manual-for-primary-care-2017, accessed 31 March 2021).

WHO (2018a). *Global status report on alcohol and health 2018. Geneva: World Health Organization* (https://www.who.int/publications/i/item/9789241565639, accessed 7 June 2021).

WHO (2018b). *WHO launches SAFER alcohol control initiative to prevent and reduce alcohol-related death and disability [press release]. 28 September 2018.* Geneva: World Health Organization (https://www.who.int/substance_abuse/safer/launch/en, accessed 25 May 2021).

WHO (2019). *Alcohol policy impact case study: the effects of alcohol control measures on mortality and life expectancy in the Russian Federation. Copenhagen: WHO Regional Office for Europe* (https://www.euro.who.int/en/publications/abstracts/alcohol-policy-impact-case-study-the-effects-of-alcohol-control-measures-on-mortality-and-life-expectancy-in-the-russian-federation-2019, accessed 25 May 2021).

WHO (2020). *Fact sheet on the SDGs: alcohol consumption and sustainable development.* Copenhagen: WHO Regional Office for Europe (https://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/publications/2020/fact-sheet-on-the-sdgs-alcohol-consumption-and-sustainable-development-2020, accessed 25 May 2021).

WHO (2021a). *The RUS-AUDIT validation study protocol: adapting and validating the Alcohol Use Disorders Identification Test (AUDIT) in the Russian Federation.* Copenhagen: WHO Regional Office for Europe ([URL to be added]).

WHO (2021b). *Diagnostic categories and terms. Geneva: World Health Organization* (https://www.who.int/substance_abuse/terminology/diagnostic_categories/en, accessed 25 May 2021).

WHO (2021c). *Making the European Region SAFER: developments in alcohol control policies, 2010–2019.* Copenhagen: WHO Regional Office for Europe (https://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/publications/2021/making-the-european-region-safer-developments-in-alcohol-control-policies,-20102019-2021, accessed 25 May 2021).

Wutzke SE, Shiell A, Gomel MK, Conigrave KM (2001). *Cost effectiveness of brief interventions for reducing alcohol consumption.* Soc Sci Med. 52(6):863–70. doi:10.1016/s0277-9536(00)00189-1.

Yakovleva TV, Vylegzhanin SV, Boitsov SA, Kalinina AM, Ipatov PV (2014). *Dispanserizatsija vzroslogo naselenija Rossijskoi Federatsiji: pervyij god realizatsiji, opyt, rezultaty, perspektivy [Regular medical examination of adults in the Russian Federation: first year implementation: lessons learned, results and perspectives].* Soc Asp Popul Health. 38(4):1–17 (in Russian).

Yanov SA, Bokhan NA, Mathew T, Shin S, Greenfield S, Shields A et al. (2009). *Chuvstvitel'nost' i specifichnost' skrining-testa "AUDIT" pri vyjavlenii rasstrojstv v rezul'tate upotreblenija alkogolja sredi bol'nyh tuberkulezom legkih [Sensitivity and specificity of the AUDIT screening test in detecting alcohol use disorders in pulmonary TB patients].* Siberian Bulletin of Psychiatry and Narcology. 4:34–6 (in Russian).

ANNEX 1. TERMS OF REFERENCE FOR THE PROJECT ADVISORY BOARD

Goals and objectives of the RUS-AUDIT Project Advisory Board (PAB) – AUDIT adaptation and validation in the Russian Federation

Goal. To provide advice to WHO and the Ministry of Health of the Russian Federation on implementation of the project "AUDIT adaptation and validation in the Russian Federation, RUS-AUDIT".

The PAB represents the main organizations and stakeholders involved in prevention of harmful use of alcohol in the Russian Federation:

- the Ministry of Health of the Russian Federation
- the National Narcology Research Center (a branch of the V.P. Serbsky Medical Research Center for Psychiatry and Narcology)
- the National Medical Research Center for Therapy and Preventive Medicine
- the Higher School of Public Health Management, I.M. Sechenov First Moscow State Medical University (Sechenov University)
- the Moscow Research and Practical Centre for Narcology
- the Federal Research Institute for Health Organization and Informatics of the Ministry of Health of the Russian Federation
- the WHO Country Office in the Russian Federation
- the WHO Regional Office for Europe/WHO European Office for the Prevention and Control of Noncommunicable Diseases.

Particular **objectives** of the Advisory Board:

1. to monitor progress of the project implementation in accordance with the agreed action plan, to review limitations in this process, and to advise on how to address them;
2. to review results of the systematic review and expert interviews of patients and health-care workers about use of the AUDIT in the Russian Federation;
3. to provide expert views on changes to the AUDIT as part of the adaptation and validation protocol;
4. to facilitate access to data, ethical approval and information required for the project, including validation procedures;
5. to advise on steps to address potential consequences of the revised AUDIT for implementation of brief interventions in primary health care (PHC) and to improve collaboration between PHC and narcology care;
6. to facilitate coordination and collaboration of institutions involved in validation of the adapted tool and future brief interventions;
7. to facilitate development of the plan and agreed procedures for joint publication of project materials in the English and Russian languages;
8. to participate in preparation and review of the final project report prepared for WHO country/regional offices based on consensus of the PAB in Moscow (in the absence of consensus, the conflicting positions will be reflected in the final report);
9. to participate in joint English-language international publications based on standard scientific authorship criteria (each publication will be shared with all PAB members, allowing two weeks for comments); and
10. to disseminate information about the project approved by PAB members.

The PAB will meet every three months (four times a year).

The PAB will have its secretariat in the WHO Country Office in the Russian Federation.

ANNEX 2. ADDITIONAL ITEMS USED IN THE VALIDATION STUDY BUT NOT INCLUDED IN THE FINAL TOOL

11.1. Please recall a situation within the last three months when you drank the maximum amount of alcohol. Indicate which types of drink you consumed and in what quantity.

_____ml beer (4.5–5%)	_____ ml wine or sparkling wine (12–13%)	_____ ml strong alcohol (40%)	Other _____ ml _____ %

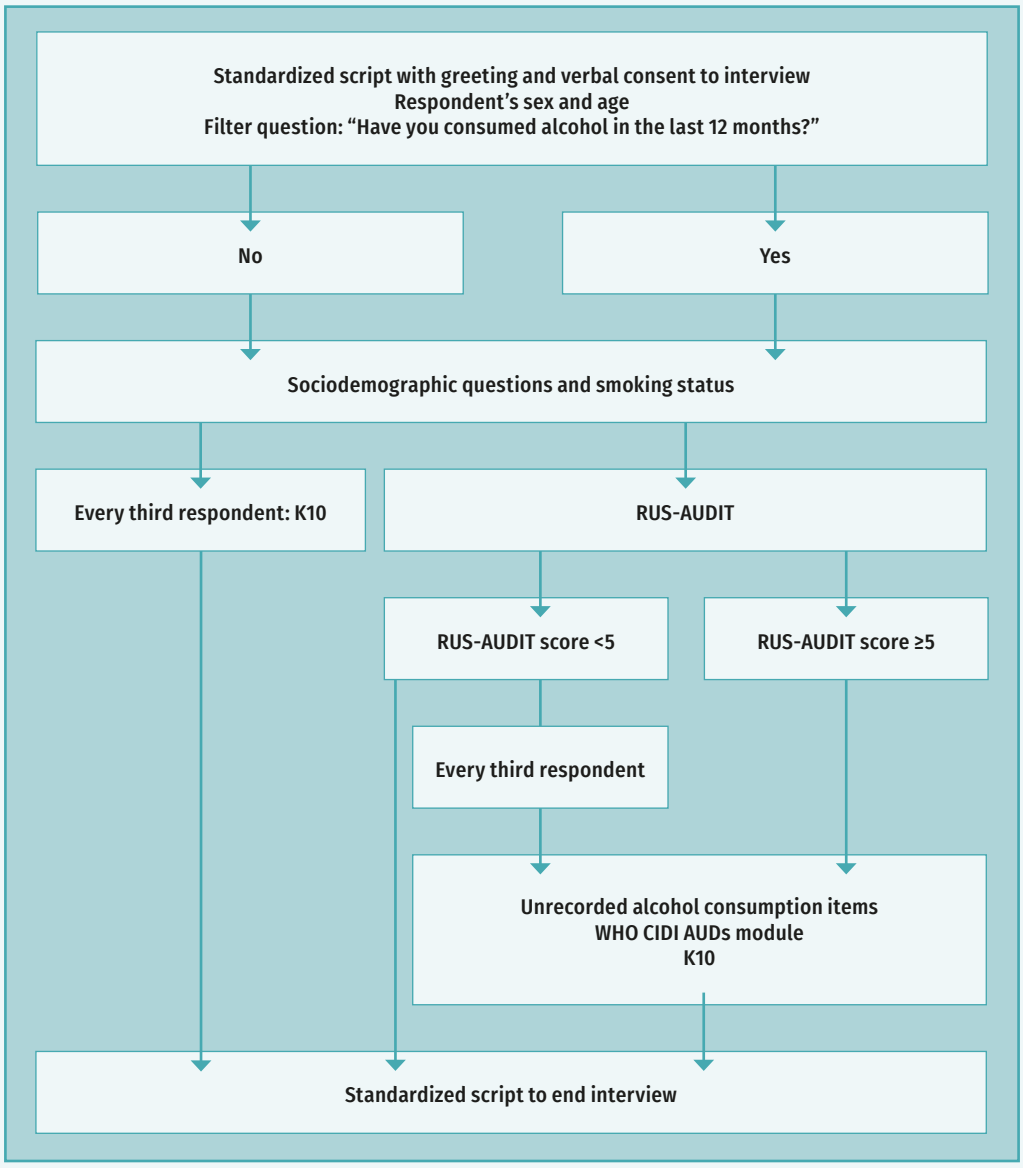
11.2. How often in the past three months have you drunk so much alcohol that you had a hangover the next day?

Interviewer – Write down the respondent's quantitative answer in an open form.

11.3. How often over the past three months have you had so much to drink that you went to bed without undressing?

Interviewer – Write down the respondent's quantitative answer in an open form.

ANNEX 3. FLOWCHART SHOWING THE INTERVIEW PROCESS USED IN THE RUS-AUDIT VALIDATION STUDY



ANNEX 4. OVERVIEW OF TRAINING MODULES AND ACTIVITIES OF INTERVIEWER TRAINING

Time	Topics and activities	Description of learning activities	Materials needed
10 minutes	Introduction Goal and objectives of the training Training rules Overview of training programme	Trainers and participants introduce themselves. Trainers explain goals and objectives of the training, discuss and agree on training rules, and provide an overview of the programme.	Training slides
20 minutes	Basic facts on alcohol and continuum of alcohol use. Screening and brief intervention (SBI) for alcohol Main ideas of screening	Trainers introduce participants to the basic facts on alcohol and the alcohol use risk pyramid, explain the main ideas behind SBI for alcohol use, and introduce the AUDIT as one of the most frequently used screening instruments.	Training slides, interview manual
20 minutes	Overview of the RUS-AUDIT project	Trainers explain the goal and purpose of the validation study and the most important details of sampling and inclusion criteria and sampling quota, and introduce the flowchart of the interview. Recruitment of study participants is explained, as well as data collection procedures, quality control and ethical aspects of the study.	Training slides, interview manual, interview flowchart
10 minutes	Questions and discussion		
10 minutes	Break		
30 minutes	Basic introduction of the interview as a method and main interviewing techniques	Trainers introduce the interview as a method. The most common dos and don'ts of interviewing are discussed, based on examples, including the role of the interviewer and the most common biases. The main interviewing techniques are introduced.	Training slides, interview manual

Time	Topics and activities	Description of learning activities	Materials needed
20 minutes	Overview of the instruments Detailed explanation of the sociodemographic form	Trainers introduce the main tally sheet and the first section of the main indicators and the sociodemographic form.	Training slides, interview manual, tally sheet, interview flowchart
10 minutes	Questions and discussion		
40 minutes	Break		
40 minutes	Detailed explanation of the RUS-AUDIT form and role play Exercises to calculate standard drinks with the show card	Trainers introduce and explain the RUS-AUDIT form and the show card with standard drinks. Participants learn to transform drinking volumes into standard drinks and scores with the help of the show card.	Training slides and interview manual, tally sheet, show card, role play materials
10 minutes	Questions and discussion		
15 minutes	Detailed explanation of the unrecorded alcohol form and role play	Trainers introduce the form on unrecorded alcohol consumption and explain the differences in subtypes of unrecorded alcohol and supervise a role play.	Training slides, interview manual, tally sheet
15 minutes	Detailed explanation of the K10 form and role play	Trainers introduce the K10 and supervise a role play.	Training slides, interview manual, tally heet
15 minutes	Detailed explanation of the CIDI module for alcohol use disorders (AUDs) and role play	Trainers introduce the AUDs CIDI module and supervise a role play.	Training slides, interview manual, tally sheet
10 minutes	Questions and discussion		
10 minutes	Break		
15 minutes	Explanation of the interviewer journal	Trainers introduce the interviewer journal and explain how to monitor quotas and generate unique interview codes for each participant.	Training slides, interview manual, interview journal, tally sheet, interview flowchart
40–60 minutes	Role plays and practical skills development Assessment and feedback	Role plays in groups (participant, interviewer and observer) following the interview script. Individual assessment and feedback for each training participant and final evaluation.	Interview manual, tally sheet, show card, role play materials, feedback and assessment sheet
20 minutes	Open questions and discussion	Trainers summarize the results of the training and discuss logistical details of data collection with the interviewers and coordinators.	

THE WHO REGIONAL OFFICE FOR EUROPE

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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