Health Policy 125 (2021) 393–405

Contents lists available at ScienceDirect

Health Policy

journal homepage: www.elsevier.com/locate/healthpol

Health assessment for migrants and asylum seekers upon arrival and while hosted in reception centres: Italian guidelines

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ARTICLE INFO

Article history:
Received 14 February 2020
Received in revised form
15 December 2020
Accepted 17 December 2020

Keywords:
Guidelines
Migrants
Asylum seekers
Public health
Healthcare needs assessment
Prevention and control

ABSTRACT

Background: During 2016–17, national guidelines were developed in order to provide evidence-based recommendations on health assessments for migrants and asylum seekers upon their arrival in Italy.
Methods: Scientific literature published between 2005 and 2016 was searched in different databases. A free search was also performed on international organizations' websites in order to identify additional relevant documents. A multidisciplinary panel discussed the resulting evidence and formulated recommendations.
Results: Evidence-based recommendations were formulated: signs and symptoms of specific diseases should to be actively searched for active TB, malaria, STI, intestinal parasites, diabetes, anaemia. In case of other health conditions (latent TB, HIV, HBV, HCV, STI, strongyloides, schistosoma, diabetes), testing should be offered to asymptomatic subjects coming from endemic areas or exposed to risk factors. Mass screening is recommended for anaemia and hypertension; a pregnancy test should be considered, while inclusion in cervical cancer screening and vaccination programs is recommended.

A modulated, progressive approach was developed, covering an initial evaluation during rescue operations, a full medical examination at first line reception stage and the referral to national health services during second line reception.
Conclusions: It is important to produce and periodically update guidelines on these issues and local peculiarities should be taken into account in their design and implementation. Guidelines can not only support economic sustainability, but also counteract stigmatization dynamics.

1. Introduction

Human mobility is a test case for the ability of National Health Systems to provide effective responses to emerging health needs. Such responses involve the capacity to manage complexities by means of a systemic approach, using standardised healthcare approaches and evidence-based public health practices, while avoiding fragmentation and ad hoc solutions.

Assuming this perspective, the aim of this paper is to present the development process and final recommendations of the Ital-

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https://doi.org/10.1016/j.healthpol.2020.12.010

ian Guidelines (GLs) "Health assessments for migrants and asylum seekers upon arrival and while hosted in reception centres" [1]. This is the first document published in 2017 within the agreement signed in 2015 between the National Institute for Health, Migration and Poverty (INMP), in collaboration with the Italian National Institute of Health (ISS) and the Italian Society of Migration Medicine (SIMM). The Programme aimed at producing clinical-organizational guidelines on health protection, care and assistance for migrant populations.

The guidelines are focussed on infectious diseases and chronic-degenerative conditions, as well as on special conditions such as pregnancy; it does not address migrants' mental health issues, as these are covered in a separate national GL [2].

1.1. Context

In 2014, a survey involving experts from EU/EEA countries and Switzerland found that screening programs on newly arrived migrants and asylum seekers, as well as their implementation, varied across countries, suggesting the need for evidence-based recommendations on this topic [3]. Another study, focussed on infectious diseases services for asylum seekers and refugees, highlighted a lack of standardisation in health assessments, data collection, transfer of health-related information and coordination among European first-entry, transit, and destination countries [4]. In recent years, this clear fragmentation of practices encouraged many public health institutions to work in this field [5–11].

This need was felt also in Italy, especially in light of two major developments. On one side, the peak of migrants and asylum seekers' arrivals recorded in 2011 during the so-called Ärab Spring (almost 65,000) that further increased to approximately 170,000 people in 2014 and to 181,000 in 2016. As a consequence, the reception system passed from 3000 places in the first decade of this century to over 22,000 places in 2013, and then to almost 205,000 persons received in July 2017 [12].

On the other side, Legislative Decree n. 142 of 2015 [13] was introduced: this was meant to institutionally manage the flow of asylum seekers (still numerically marginal if compared to the overall stock of migrants living in Italy) through a renewed reception system, which assumed the impossibility to consider Italy simply as a transit country under EU Dublin III Regulation [14]. In this context, it was crucial to define evidence-based health protocols tailored to the various reception phases, in order to offer effective health protection to migrants and asylum seekers and to avoid the rise of speculations and prejudices.

1.2. Healthcare: from rescue to reception

These GLs intended to operate in a context where healthcare is provided at every stage of the Italian reception pathway for migrants and asylum seekers: from rescue at sea, to placement, up to integration. In particular, during rescue operations at sea, a very initial medical evaluation is provided by the Coast Guard on board the ship, and a certificate of "free circulation" is released by the "Port, Airport and Border Health Offices" (USMAF - Ministry of Health). Health assistance is then offered at the dock or at the hotspots through a collaboration of USMAF with the Local Health Unit.

First-line reception is organized in governmental Centres/Hubs, at regional or interregional level. During this phase, lasting in principle from 1 week to 1 month after arrival, asylum seekers may apply for international protection; healthcare is provided by the reception centres themselves, sometimes in collaboration with the Local Health Unit, but without direct access to the National Health System (NHS).

Second-line reception is guaranteed through SIPROIMI, the reception system dedicated to beneficiaries of international protection and to unaccompanied children, while asylum seekers can only have access to Emergency Accommodation Centres (CAS Centri d'accoglienza straordinaria). While a new legislative decree is presently reviewing SIPROIMI which will be called SAI (Reception and Integration System), redefining the target population and the type of intervention, it remains that both beneficiaries of international protection and asylum seekers have the right to mandatory registration with the Italian NHS once they apply for international protection: from this moment they are entitled to have a General Practitioner or paediatrician and can receive health care within the Essential Levels of Care, on equal terms with Italian citizens.

1.3. Purpose of the guideline and recipients

While access to healthcare is therefore always guaranteed, the GL "Health assessments for migrants and asylum seekers upon arrival and while hosted in reception centres" responded to the need to standardize protocols for healthcare of migrants and asylum seekers with pathologies which may jeopardize their own and/or public health, but also to ensure prevention and health promotion within these fragile populations. Key objectives were:

- To promote clinical and organizational appropriateness, in the frame of valid and effective pathways;
- To prevent waste connected to unnecessary or unnecessarily-repeated health assessments;
- To prevent or contain defensive practices due to possibly unjustified scaremongering.

Target readers of the GLs are, primarily: decision makers; health managers; health professionals; researchers. In addition: migrant communities; politicians; social and legal workers; NGOs personnel; media workers.

2. Materials and methods

GLs production was initiated on the base of a priority setting activity. This was based on a consultation involving INMP National Network representatives, SIMM Board and Scientific Committee members and the Immigration and Health Groups spokespersons (55 persons totally). Each participant was asked to identify and rank 5 priority topics out of a list of 16, which was previously compiled based on a literature search [15]. At the end of the consultation, "health assessments for migrants and asylum seekers upon arrival and while hosted in reception centres" scored first among the submitted topics.

The Scientific Committee coordinating the development of the GLs was formed by representatives of the three institutions promoting GLs production and was supported by a technical group. The first tasks of the Scientific Committee were to form a multidisciplinary, multi-professional panel, and to identify relevant review question topics, based on a preliminary literature search. The panel was composed of independent experts and of representatives of scientific societies, national and international institutions and health organizations particularly involved in migrants' health protection. Each scientific society, institution and organization was asked to identify one person as his or her representative in the GLs panel. Independent experts were selected among those of proven excellence in the topics covered by the GLs. The following professional profiles were involved: infectious disease, gastroenterology/hepatology, dermatology, paediatrics/neonatology and hygiene/epidemiology specialists; guideline development methodologists; one member of migrants' associations, representing the

target population; one representative of cultural mediators in healthcare settings. Each member of the panel declared no conflict of interest. During 2016–17 the panel met twice: in the first meeting members were asked to frame the review questions, based on a number of topics proposed by the Scientific Committee, who then synthesised what emerged from the discussion for the follow of the process. During the second and last meeting, panel members discussed the synthesis of included documents and formulated recommendations.

Conditions, and related questions, covered by the GL included infectious diseases (tuberculosis, malaria, HIV, HBV, HCV, sexually transmissible infections, intestinal parasites), chronic-degenerative diseases (diabetes, anaemia, hypertension, cervical cancer), pregnancy and vaccinations. A particular attention was paid to general medical examinations upon arrival and throughout the reception pathway (Table 1).

The PICO process (Population, Intervention, Comparison, Outcome) was used to formulate the search questions. Migrants and asylum seekers intercepted by the Italian reception system in any situation (catchment population) were considered as the target population; comparison between strategies (screening *vs.* active seeking of signs and symptoms) was considered as the intervention/control; early identification of disease, infection or of a particular condition (pregnancy) was the outcome of interest.

2.1. Search strategy

ISS Documentation Centre developed the search strategy for each review question and consulted the bibliographic databases. Scientific literature was searched systematically in the following databases: Medline, Embase, Scisearch, Biosis and Pascal. After a preliminary pilot search aiming at balancing recall (sensitivity) and precision (specificity), a tailored search strategy was developed and performed for each question. The search strategies included both Medline and Embase subject headings (i.e. Mesh and Emtree terms, respectively) as well as free-text words related to the subject of the 15 GLs questions (Table 1). Duplicate citations due to databases overlap were removed during each query session and de-duplicated search results were exported to Microsoft Excel to facilitate further data analysis and management.

In order to identify potentially relevant documents not indexed in bibliographic databases, an additional free search was performed on the websites of international agencies and organizations active on GLs production, on Public Health and on migration related issues.

Strategies applied to search scientific literature databases are available for consultation in Supplementary material S1.

2.2. Eligibility criteria for studies inclusion

The literature search was restricted to English and Italian documents published from 2005 to 2016. Only secondary literature was selected, in particular Systematic Reviews with or without meta-analysis and GLs, as these documents are ranked at the top of the hierarchy of evidence. Consensus Conference and Position papers were included only if based on a systematic search of the literature.

Publications needed to be related to the target population of newly arrived migrants, and to the condition covered by each question.

Documents were included only if they met the above-mentioned eligibility criteria, and after a quality assessment.

2.3. Selection and quality assessment of studies

Quality assessment was carried out using the PRISMA checklist [16] for systematic reviews and the AGREE II [17,18] instrument for GLs. PRISMA checklist was originally designed for reporting, but it may also be used for quality assessment.

The Scientific Committee identified nine Literature Reviewers: five doctors in speciality training in Hygiene and Preventive Medicine, one student with a degree in Medicine and Surgery and three researchers. A team of epidemiology and GLs development experts properly trained the Literature Reviewers. The training included a course on Bäsic methods in epidemiologyänd three meetings dedicated to the stages of guidelines development and to internationally used methodological tools; the latter had a focus on PRISMA and AGREE checklists, used for quality assessment.

Each paper was assigned to two reviewers, working independently: they assessed title and abstract, and then the full text, against the eligibility criteria. Later on, they independently assessed the methodological quality of each included study. Any disagreement between the two reviewers was solved through a discussion between them. If this was not possible, a senior researcher stepped in to solve the disagreement.

Consensus conferences were not evaluated through a checklist, but in terms of overall quality, with particular attention to the methodology used for the systematic review of literature.

2.4. Data extraction and synthesis

Relevant information from the included studies was extracted by one reviewer and checked by another. ISS experts provided two different extraction forms, one for systematic reviews and one for GLs. The first form included the following data: bibliographic reference, PRISMA quality assessment, study objectives, literature selection and evaluation, characteristics of the population, interventions, comparators, outcomes, results, conclusions, limitations identified by the authors and any comments from the reviewer. Information extracted from GL included bibliographic reference, research institution, AGREE assessment, search strategy, GL development methodology, target population, whom the GL is intended for, recommendations for each GL question and other possibly relevant data for each question.

A Writing Committee was formed by members of the Scientific Committee, of the Technical Group and of the three promoting institutions. Using the data extraction forms filled in by the reviewers, it produced the narrative synthesis of the included studies, for each GLs question.

2.5. Web platform

In order to share all documents used and produced throughout the GLs development process, a dedicated platform was created on the INMP website. Panel members and all those involved in GL production had access to it at any time. This also ensured the transparency of the process. The space was organized in sections, one for each question, containing the output of the literature search, study selection, quality assessment, data extraction and narrative synthesis. GLs drafts were located in a separate folder.

2.6. Formulation and grading of the recommendations

Based on the synthesis of the literature, the writing committee produced a first draft of the recommendations.

Evidence for each review question was presented during the final meeting of the panel. Recommendations proposed by the writing committee were discussed, until an agreement was reached. A formal vote was foreseen in the event of a disagreement; this procedure, however, was not used, as a clear agreement among panel members emerged during the discussion. After the panel meeting, the writing committee summarized what emerged from the dis-

Table 1
Guideline questions.

Q1 –	Which triage tools (e.g. SIEVE, START, SORT, CESIRA, MIMMS, SATS, etc.) are indicated to identify health conditions requiring urgent attention in migrants and asylum seekers upon their arrival?
Q2 –	Is a general medical examination of all migrants and asylum seekers indicated at the beginning of the reception pathway? Does any tool (protocols and checklists) exist to assess migrants and asylum seekers' health - including physical trauma outcomes - during a general medical examination?
Q3 –	Which is the indicated strategy for early identification of tuberculosis and of latent tuberculosis infection in migrants and asylum seekers during the reception pathway?
Q4 –	Which is the indicated strategy for early identification of malaria in migrants and asylum seekers during the reception pathway?
Q5 –	Is an HIV screening programme indicated for migrants and asylum seekers during the reception pathway?
Q6 –	Is an HBV screening programme indicated for migrants and asylum seekers during the reception pathway?
Q7 –	Is an HCV screening programme indicated for migrants and asylum seekers during the reception pathway?
Q8 –	Which is the indicated strategy for early identification of STIs in migrants and asylum seekers during the reception pathway? Is a syphilis screening programme indicated?
Q9 –	Is a parasitological stool test indicated as screening for intestinal parasites in migrants and asylum seekers during the reception pathway? Is a Strongyloides screening programme indicated? Is a Schistosoma screening programme indicated?
Q10 –	Is a diabetes screening programme indicated for migrants and asylum seekers during the reception pathway?
Q11 –	Is an anaemia screening programme indicated for migrants and asylum seekers during the reception pathway?
Q12 –	Is arterial hypertension screening via blood pressure measurement indicated for migrants and asylum seekers during the reception pathway?
Q13 –	Should a pregnancy test be offered to all migrant and asylum seeking women of reproductive age upon their arrival in Italy?
Q14 –	Is offering early cervical cancer screening indicated for migrant and asylum seeking women during the reception pathway?
Q15 –	Is an active offer of mandatory and recommended vaccinations indicated for migrants and asylum seekers during the reception pathway?

Table 2
Recommendations grading system.

Grade of recommendation	Definition
a	At least 1 high quality document (SR quality = high and/or GL score = 6–7)
b	At least 1 document of satisfactory quality (SR quality = satisfactory and/or GL score = 4–5); or at least 3 consistent low quality documents (SR quality = low and/or GL score = 1–3
c	At least 1 or 2 low quality documents (SR quality = low and/or GL score = 1–3
panel	No evidence in literature, but panel considered appropriate to add details, or to adapt the recommendation to the Italian context.

SR: Systematic Reviews.

cussion, and sent the emended document for final approval to the panel.

Based on the quality (from PRISMA or AGREE) and consistency of the studies supporting each recommendation, a 3-level rating system for grading the strength of recommendations was developed (Table 2). An additional level of grading, defined as ‘panel recommendation’, was introduced: this was applied when, even in absence of specific evidence from the literature, the panel considered appropriate to add details, or to adapt the recommendation to the Italian context.

The included consensus conferences, all of high quality, did not participate in the assignment of the grade, but were consistent with the recommendations and were used to further support them.

2.7. Review and public consultation

The GLs draft remained publicly available online for three weeks, in order to receive comments and suggestions from experts and the public. The review process was supported by the INMP website (https://www.inmp.it/ita/Rete-Nazionale/Linee-Guida-Salute-Migranti) and was advertised on the websites of the other two involved institutions. The resulting comments were considered by the panel, and a part of them was accepted and included in the final text. The GLs were also submitted to four Referees: one pneumologist, one epidemiologist, one public health specialist and one moral philosopher. They were asked to assess the readability and clarity of the text and the feasibility of recommendations. Again, as for experts and the public, some comments from the referees were accepted and included in the final text.

3. Results

The systematic literature search produced 1059 documents meeting the eligibility criteria; based on titles and abstracts, 155 documents were selected for perusal of the full text. This led to a further selection of 48 documents, out of which 39 were used as a base for recommendations (the other nine being included as eligible, but not useful in terms of content).

For each question, Table 3 presents the full recommendations (and their grading) resulting from the summary of literature described below; the reference to supporting documents are indicated at the end of each of them in curly brackets.

3.1. Triage tools

With regard to triage tools related to newly arrived migrants or asylum seekers, no GL or systematic review was found.

3.2. Medical examination

With regard to medical examination, based on the systematic literature review three GLs were included [6,19,20].

All documents highlight the importance of an early medical examination for an accurate collection of the patient’s medical history (with particular reference to previous health conditions, medications taken, any allergies, vaccinations and risk factors such as alcohol, smoking and drugs) and family and social history (also in relation to migration path). As the detection of signs and symptoms is concerned, the three GLs recommend the search for possible presence of cough, fever, weight loss, night sweats, respiratory and abdominal disorders, splenomegaly, diarrhoea, itching, skin lesions or rash; they recommend also an evaluation of visual acuity and of the oral cavity, of nutritional status and symptoms of anaemia, cervical, axillary and inguinal lymphadenopathies and a cardiorespiratory examination. The importance of cultural mediators is emphasized, in consideration of the difficulties experienced by many migrants and asylum seekers in their relationship with health workers. See Table 3 for recommendations.

Table 3
List of recommendations for each review question (the reference to supporting documents and Grading are indicated at the end of each recommendation in curly brackets).

Triage tools (Question 1)
Regarding triage tools, no document was found.
Medical examination (Question 2)
R2.1 – During medical examination, particular attention should be paid to medical, family and social history. Further, signs and/or symptoms suggestive of specific diseases – tuberculosis, malaria, STIs, parasitosis, anaemia and diabetes – should be detected early, in order to provide timely access to care {[6,19,20] (Grade A)}.
R2.2 – Medical examination should include a nutritional assessment, a cardio-respiratory exam, visual and auditory acuity tests, a careful skin inspection to detect possible ectoparasitosis (frequently found in recently arrived migrants and asylum seekers) and a search for any signs of trauma and/or torture {[6,19,20] (Grade A)}.
R2.3 – In consideration of the setting, all health workers should have a comprehensive understanding of the epidemiological context in countries of origin and transit. In addition, health workers should be trained in a culturally competent approach, and should receive adequate psychological support in order to manage emotionally stressful situations and avoid burnout {[6,19,20] (Grade A)}.
R2.4 – The presence of cultural mediators in healthcare settings is recommended, in order to support the doctor-patient relationship {[6,19,20] (Grade A)}.
R2.5 – The use of ICT tools to record and make medical files available throughout the reception process, while safeguarding patients' data protection rights, is recommended (Panel's recommendation).

Tuberculosis (Question 3)
Active Tuberculosis
R3.1 – Active case finding for TB disease should begin immediately, during the first medical evaluation at the dock (or at any point of entry), and should continue throughout the reception pathway {[21,26–28] (Grade A)}.
R3.2 – In order to allow timely access to diagnosis and treatment, migrants and asylum seekers should receive adequate information on tuberculosis signs and symptoms and on its modes of transmission right from first line reception stage; due attention should be paid to the patient's language proficiency and to the adaptation of message contents and the formats to the appropriate cultural system {[23,25,27–29] (Grade A)}.
R3.3 – For patients with a cough persisting for more than 2 weeks, a chest x-ray is recommended, along with further diagnostic tests {[22,27,29]}. When an x-ray cannot be performed promptly (for example, during rescue operations), a rapid TB molecular test should be performed in order to identify cases and to implement appropriate isolation measures {[26,27] (Grade B)}.
R3.4 – The use of TST or IGRA tests to identify active cases of TB disease is not recommended {[26] (Grade B)}.
R3.5 – Routine radiographic and/or microbiologic screening in asymptomatic individuals is not recommended {[22,25,27] (Grade B)}.
R3.6 – All persons with a confirmed diagnosis of tuberculosis should be guaranteed immediate and free access to treatment, continuity of care and follow up, with particular attention to those transferred to other reception centres (or to other countries) {[24] (Grade A)}.
Latent Tuberculosis Infection
R3.7 – TST or IGRA test (the latter being indicated particularly in cases of previous vaccination) should be offered to all asymptomatic subjects coming from high burden countries (TB incidence estimate >100/100.000) who are likely to be hosted in reception centres for at least 6 months {[5,6,21,26,29,37,38] (Grade A)}.
R3.8 – TST test is recommended for children aged <5 years {[19,39] (Grade A)}.
R3.9 – Subjects with positive TST (diameter ≥10 mm) or IGRA test should undergo a chest x-ray (as well as further diagnostic tests, if necessary) in order to rule out TB disease. A diameter of ≥5 mm is considered as clinically relevant in cases of serious malnutrition and of HIV seropositivity {[19,29,39] (Grade A)}.
R3.10 – Therapy for latent tuberculosis infection should be offered to all persons with a positive TST or IGRA test and a negative x-ray, in order to prevent new cases {[19,26] (Grade A)}.

Malaria (Question 4)
R4.1 – Signs and/or symptoms suggestive of malaria (particularly fever) should be detected early - right from the rescue phase and throughout the reception pathway - in migrants and asylum seekers who reportedly lived in or travelled through areas with a high malaria burden {[5,6,19,40] (Grade A)}.
R4.2 – Health workers involved in evaluating migrants during rescue operations and throughout the reception pathway should be trained in recognizing malaria and severe malaria signs and symptoms, so to avoid diagnostic and therapeutic delays {[5,6] (Grade A)}.
R4.3 – Hemoscopy should be promptly offered as initial diagnostic procedure to subjects with malaria signs and/or symptoms. Rapid tests are a valid alternative for symptomatic patients, as these are easy to use and can be resorted to even during rescue operations and first line reception {[5,19,40] (Grade A)}.
R4.4 – A diagnosis of malaria in presence of splenomegaly and/or thrombocytopenia should be considered during investigations on individuals who report having lived or travelled through countries with a high malaria burden; these two conditions, in fact, are predictors of the disease even in the absence of symptoms {[40] (Grade B)}.
R4.5 – Patients with a confirmed diagnosis of malaria should be referred to a specialist. Cases of Plasmodium falciparum malaria or severe non-falciparum malaria should be guaranteed an immediate access to care: their clinical conditions, in fact, may rapidly deteriorate, especially in the case of children, pregnant women and immunosuppressed subjects {[19] (Grade A)}.

HIV (Question 5)
R5.1 – During second line reception, all migrants and asylum seekers should be offered clear and complete counselling on HIV infection, on AIDS and on the possibility of receiving effective treatment. This information should be provided using a culturally sensitive approach, possibly in the individual's mother tongue, and through the collaboration of a cultural mediator {[5,19,42] (Grade A)}.
R5.2 – An HIV test should be offered to all subjects aged ≥16 years and coming from countries with a high HIV burden (HIV prevalence estimates >1 %); to pregnant and breastfeeding women; to those who, during counselling, report having been exposed to risk factors (past blood or blood product transfusions, drug addiction, multiple sexual partners or history of sexual abuse/violence); and to those with STI or tuberculosis co-infections {[5,6,19,43–45] (Grade A)}.
R5.3 – An HIV test should also be offered to children aged <16 years in presence of individual risk factors (seropositive mothers, early sexual activity, history of sexual abuse/violence) and/or having STI or tuberculosis co-infection {[6,19] (Grade A)}.

Hepatitis B (Question 6)
R6.1 – During second line reception, screening for HBV infection should be offered to all migrants and asylum seekers coming from countries with an HBsAg prevalence of >2 % and, regardless of their country of origin, to subjects having risk factors (HIV infection, past blood or blood product transfusions, drug addiction, multiple sexual partners, sexual abuse, close family members with HBV infection and undergoing immunosuppressive therapy), as well as to pregnant women {[5,6,47–49,51,52] (Grade A)}.
R6.2 – Screening should include HBsAg, HBcAb and HBsAb testing {[5,19,49,53] (Grade A)}.
R6.3 – HBsAg positive individuals should be referred to a specialist for further diagnostic evaluation and treatment, if needed {[19,50] (Grade A)}.

Hepatitis C (Question 7)
R7.1 – During second line reception, screening for HCV infection should be offered to all migrants and asylum seekers coming from countries with an HCV prevalence of >3 %; and, regardless of their country of origin, to subjects at risk (with HIV infection, past blood or blood product transfusions, drug addiction, abnormal liver function tests, practices foreseeing skin perforation for non-therapeutic reasons) {[5,6,19,49,52] (Grade A)}.
R7.2 – Screening should include anti-HCV testing {[5,6,19] (Grade A)}.
R7.3 – Anti-HCV positive subjects should undergo further viral load evaluation (quantitative HCV-RNA); in case of positive result, they should be referred to a specialist for further diagnostic evaluation and treatment, if needed {[5,6,19,50] (Grade A)}.

Table 3 (*Continued*)

Sexually transmitted infections (Question 8)

R8.1 – During medical examinations at reception centres, STI signs and symptoms (vaginal, cervical or urethral discharge, genital or oral warts, rash, inguinal lymphadenopathy) should be carefully searched for in recently arrived migrants and asylum seekers. Symptomatic subjects should undergo a specialist evaluation {[6,19,54] (Grade A)}.

R8.2 – During the examination, the doctor should provide adequate counselling on sexual health and on STI prevention measures {[19,54] (Grade A)}.

R8.3 – During second line reception, asymptomatic subjects with risk factors (multiple partners, new partners, recent STI, sexual violence) should be offered diagnostic tests for Chlamydia trachomatis and Neisseria gonorrhoeae, based on a first pass urine PCR, or preferably on a vaginal swab in the case of women {[6,19,54] (Grade A)}

R8.4 – During second line reception, a blood test for syphilis is recommended for all subjects aged ≥16 years and coming from high HIV burden countries (HIV prevalence estimates of >1 %); and for those who, after adequate counselling, believe they have been exposed to risk factors {[6,19,54] (Grade A)}.

R8.5 – For children aged <16 years, a syphilis test should be offered in presence of individual risk factors (seropositive mother, early sexual activity, sexual abuse/violence) or of other STIs {[19,54] (Grade A)}.

Intestinal parasites (Question 9)

R9.1 – During medical examinations and throughout the reception pathway, the presence of symptoms such as diarrhoea, abdominal pain, nausea, vomiting, itching and haematuria (including a history of the same) should be considered as being suggestive of intestinal parasites {[19) (Grade A)}.

R9.2 – During clinical investigations, the detection of eosinophilia should be considered as a possible indirect marker of helminths {[19,55,56]} (Grade A).

R9.3 – In presence of signs or symptoms compatible with intestinal parasites and/or with eosinophilia, stool microscopy should be offered to detect any intestinal parasite {[6,19,56] (Grade A)}.

R9.4 – During second line reception, a blood test is recommended for migrants and asylum seekers having lived or travelled in countries endemic for strongyloidiasis and schistosomiasis, even if asymptomatic. Subjects not recently treated and positive for Strongyloides stercoralis and Schistosoma spp should be considered as having an active infection and must be treated {[19,55,56] (Grade A)}.

Diabetes (Question 10)

R10.1 – At first line reception, level diabetes should be investigated for, by collecting a careful medical history and by searching for signs/symptoms of the disease. In symptomatic patients, a fasting blood glucose test is recommended {[7,19] (Grade A)}.

R10.2 – During second reception, glycaemic screening is recommended in asymptomatic subjects aged ≥35 years, coming from countries with a high prevalence of diabetes (the Indian subcontinent, the Middle East, North Africa and Sub-Saharan Africa) and with specific risk factors (hypertension, hyperlipidemia, family history of diabetes), in order to ensure timely diagnosis and treatment take up {[5,19] (Grade A)}.

R10.3 – All migrants and asylum seekers should receive information on disease prevention, possible complications and healthy diet and lifestyles, in an individualized and culturally sensitive manner {[57] (Grade A)}.

Anaemia (Question 11)

R11.1 – It is recommended that signs and/or symptoms of anaemia are considered right from the initial medical examination, in order to allow prompt access to treatment {[7,19,58] (Grade A)}.

R11.2 – Complete blood count should be offered to all migrants and asylum seekers as part of their health assessment {[7,19,58] (Grade A)}.

Hypertension (Question 12)

R12.1 During medical examination in reception centres, all migrants should be checked for hypertension by measuring their arterial blood pressure {[19] (Grade A)}.

Pregnancy (Question 13)

R13.1 – Pregnancy should be immediately ascertained in migrant and asylum seeking women, in order to activate the dedicated reception pathway. Right from the initial medical examination, a pregnancy test should be offered to women in reproductive age, in consideration of the risk of having been victim of sexual violence during their journey {[19] (Grade A)}.

R13.2 – In the event of a pregnancy, migrant and asylum seeking women must be guaranteed the same services foreseen by the Italian National Health Service for all women in that condition, taking into account their preference in terms of their health providers and cultural mediators' gender {[19] (Grade A)}.

[5pt] *Cervical cancer (Question 14)*

R14.1 – Early diagnosis of cervical cancer must be guaranteed to migrant and asylum seeking women aged 25–64 years, by means of their enrolment in local public screening programs {[7,19] (Grade A)}.

R14.2 – It is recommended that the interventional setting is respectful of cultural values, experiences and individual preferences, including, whenever possible, women's preference in terms of their health providers and cultural mediators' gender {[5,7] (Grade A)}.

Vaccinations (Question 15)

R15.1 – During second line reception, unvaccinated children (0–14 years) or those with uncertain vaccination records should be offered vaccinations according to the national schedule, as per their age {[5–7,19,59] (Grade A)}.

R15.2 – Adults having no or uncertain vaccination history should be offered the following vaccinations: polio, measles, mumps, rubella, chickenpox (except for pregnant women), diphtheria, tetanus, pertussis, HBV (for all screened adults testing negative on blood markers) {[5–7,19,52,59–61] (Grade A)}.

3.3. Tuberculosis

3.3.1. Active tuberculosis

With regard to tuberculosis disease, five systematic reviews [21–25], four GLs [6,26–28] and two consensus conferences [29,30] were provided by the literature review.

Many of the included documents [23,25,27–29] stress the need to offer migrants and asylum seekers adequate information on the aetiology, symptoms and mode of transmission of the disease, together with the administration of diagnostic tests and/or treatment. During medical examination, the search for signs and symptoms on all migrants and asylum seekers is recommended by four GLs: Public Health Agency of Canada [26], WHO [27], CDC [28] and Italian consensus conference [29]; HPSC GL [6] and Zenner et al. [22] recommend to restrict screening to high-risk populations (prevalence ≥40/100.000). For those patients with a persistent cough lasting longer than 2 weeks, a chest x-ray is recommended, along with further diagnostic tests [26,27,29]; whereas x-ray [22,25,27] and TST/IGRA [26] are not recommended as first line screening test. According to the Arshad et al.'s systematic review [24], in order to be fully effective, screening should be part of an integrated case management within the framework of a directly observed treatment (DOT) programme. See Table 3 for recommendations.

3.3.2. Latent tuberculosis infection

Literature search for Latent Tuberculosis Infection (LTI) produced seven systematic reviews [21,31–36], seven guidelines [5,6,19,26,37–39] and one consensus conference [29].

Four GLs [6,26,37,38], the Italian Consensus Conference [29] and Sanneh and Al-Shareef's systematic review [21] recommend screening all migrants and asylum seekers from highly endemic countries (NICE [37]: >150 cases per 100,000; WHO [38] and CC:

>100 cases per 100,000; HPSC [6] and Sanneh and Al-Shareef [21]: >40 cases per 100,000; PHA [26]: >30 per 100,000).

Australian GL [19] recommends offering LTI test to all migrants and asylum seekers aged ≤35 years, preferably within one month of their arrival in Australia. CDC GL [39] recommends screening all new arrivals for which a similar test cannot be documented at departure.

Most included documents suggest IGRA and TST to assess the presence of LTI. NICE [37], PHA [26] and CDC [39] GLs suggest using one or the other indistinctly. According to the WHO GL [38], both TST and IGRA can be used in high and middle-income countries, while TST in recommended in low- and middle-income countries. Campbell et al. [32] and Nienhaus et al. [35]'s systematic reviews consider IGRA as best choice, and preferable in cases of past vaccination (Australasian Society for Infectious Diseases ASID [19]). On the contrary, Sanneh and Al-Shareef's systematic review [21], NICE GL [37], Italian Consensus Conference [26] and, only for children <5 years old, Australian [19] and CDC [39] GLs suggest the use of TST.

According to Australian [19] and CDC [39] GLs and to Italian Consensus Conference [29], patients positive to TST or INGRA should be referred to specialist TB services and undergo chest x-ray and any other diagnostic test to exclude active TB. In these documents TST is considered as positive with an induration of ≥10 mm, or ≥5 mm in conjunction with severe malnutrition, HIV infection or immunosuppression.

The importance of treating positive migrants and asylum seekers is underlined in 2 GLs (ASID [19] PHA [26]) and in the Italian Consensus Conference [29], where LTI treatment is suggested for migrants ≤35 years or for HIV co-infected. See Table 3 for recommendations.

3.4. Malaria

With regard to malaria, a total of five guidelines [5,6,19,40,41] were included.

All documents recommend the search of malaria signs or symptoms in all migrants and asylum seekers travelling from, or having transited through, an endemic area; and the screening of symptomatic subjects. ASID GL [19] recommends screening also for asymptomatic individuals coming from endemic regions whereas, according to CDC GL [40] and Stauffer et al. [41], migrants and asylum seekers from sub-Saharan Africa should receive presumptive treatment or screening during medical examination within 3 months from arrival. CDC GL stresses the importance of considering the diagnosis of malaria in presence of splenomegaly and/or thrombocytopenia, as these are predictors of the disease even in the absence of symptoms.

Regarding the test of choice, GLs from ASID [19], CDC [40] and Canada [5] recommend blood smear microscopy and/or rapid diagnostic tests (RDT). See Table 3 for recommendations.

3.5. HIV

The literature review on HIV infection provided one systematic review [42] and six GLs [5,6,19,43–45].

All the selected GLs recommend an HIV test to be offered to all newly arrived adolescents and adults coming from high prevalence countries or exposed to risk factors; and to all pregnant women. ASID [19] and HPSC [6] GLs recommend an HIV test also for unaccompanied children exposed to specific risk factors or with co-infections, such as other sexually transmitted infections or tuberculosis.

ASID [19] and the Canadian Medical Association [5] GLs and Alvarez-del Arco et al.'s systematic review [42] stress the need of an adequate counselling, in order to provide clear and complete information on HIV infection, on AIDS and on the possibility of receiving effective treatment. See Table 3 for recommendations.

3.6. HBV

Regarding hepatitis B, two systematic reviews [46,47], seven GLs [5,6,19,48–51] and two consensus conferences [52,53] were included.

HPSC [6], CDC [49,51], MoH of Singapore [48] and the Canadian Medical Association [5] GLs, the Italian consensus conference [52] and Rossi et al.'s systematic review [47] all agree on recommending HBV screening for all migrants and asylum seekers coming from high or medium endemic countries (HBsAg prevalence ≥2 %), for those with specific risk factors and for all pregnant women. GLs by ACID [19] and NICE [50] recommend the identification of dedicated therapeutic pathways in case of positivity. See Table 3 for recommendations.

3.7. HCV

The summary of evidence related to hepatitis C screenings for newly arrived migrants and asylum seekers included one systematic review [46], five GLs [5,6,19,49,50] and one consensus conference [52].

ASID [19], HPSC [6], and the Canadian Medical Association [5] GLs and the Italian consensus conference [52] recommend HCV screening for all newly arrived migrants and asylum seekers coming from endemic countries (chronic HCV prevalence ≥3 %) or exposed to risk factors. American CDC GL [49] recommends routine screening for refugees born between 1945 and 1965, for those exposed to identified risk factors or co-infections, as in the case of U.S. general population.

On the contrary, no screening limitation is foreseen by NICE [50], which recommends testing all newly arrived migrants and asylum seekers.

The only included systematic review [46] concludes that there is no evidence of cost-effectiveness for HCV screening among migrants and asylum seekers. See Table 3 for recommendations.

3.8. Sexually transmitted infections (STDs)

Three GLs were included with regard to sexually transmitted infections [6,19,54].

CDC [54] recommends to evaluate newly arrived migrants and asylum seekers for all STDs: a thorough medical history, physical examination and search for symptoms, signs or lesions consistent with these diseases is suggested. For specific asymptomatic infections, laboratory testing is recommended. For chlamydia and gonorrhoea, nucleic acid amplification tests are recommended for female migrants and asylum seekers having risk factors. For syphilis, nontreponemal testing should be offered routinely to all persons aged 15 or more and to children if at risk.

The Australian GL [19] recommends health examination for STIs in adults with particular risk factors, and/or with symptoms consistent with a STI. As for children, the GL suggests syphilis serology in unaccompanied and separated children and screening for other STIs, including HIV and syphilis, if there are clinical concerns of sexual abuse.

According to the Irish GL [6], all sexually active migrants and asylum seekers from countries with an HIV prevalence of >1 % should be offered a full sexual health assessment, with test for syphilis, *Chlamydia trachomatis* and *Neisseria gonorrhoeae*. Sexual health screenings should be offered to sexually active migrants and asylum seekers from countries with an HIV prevalence rate of ≤1 %, as appropriate for their sexual history. See Table 3 for recommendations.

3.9. Intestinal parasites

With regard to intestinal parasites, four GLs were selected [6,19,55,56]

The Canadian [55], Australian [19] and American [56] GLs recommend Strongyloides and Schistosoma screening of migrants and asylum seekers newly arriving from highly endemic countries (Southeast Asia and Africa for Strongyloides and Africa for Schistosoma). Symptoms search and the subsequent tests for intestinal parasites are recommended in three documents [6,19,55]. All selected GLs also underline that migrants and asylum seekers with eosinophilia should be tested for Strongyloides and Schistosoma, as eosinophilia is a possible marker of these two infections. Serology is recommended as the appropriate screening test [19,55] and stool microscopy in case of presence of symptoms and/or eosinophilia [6,19,56]. All the included literature agrees on the fact that positive patients have to be treated. See Table 3 for recommendations.

3.10. Diabetes

Based on the systematic literature search, four GLs were included in relation to diabetes [5,7,19,57].

ASID [19] and CDC [7] GLs recommend searching for signs and symptoms of the disease as soon as possible during the reception pathway. ASID [19] and Canadian Medical Association [5] GLs recommend glycaemia testing in persons aged ≥35 years and coming from high prevalence countries, or with specific risk factors. NICE [57] suggests to provide information on disease prevention through healthy eating and lifestyles, and on possible complications. See Table 3 for recommendations.

3.11. Anaemia

Based on the systematic literature search, four GLs were included in relation to anaemia [5,7,19,58].

ASID GL [19] and the two CDC documents [7,58] recommend evaluating any risk factor or sign and symptom of nutritional deficiency during medical anamnesis. The same documents recommend a blood count for all migrants and asylum seekers; regarding the blood count, the Canadian GL [5] recommends to restrict the blood count to women of reproductive age and to children aged 1–4 years). See Table 3 for recommendations.

3.12. Hypertension

Regarding hypertension, two GLs were selected [7,19].

Both ASID [19] and CDC [7] recommend checking for hypertension in newly arrived migrants; pressure control is restricted to migrant aged ≥18 years in CDC document [7]. See Table 3 for recommendations.

3.13. Pregnancy

Only ASID [19] gives recommendations on ascertaining pregnancy in newly arrived migrants and asylum seekers. The GL recommends evaluating the possible pregnancy status in women of fertile age and offering them the test, if appropriate. In addition, pre-natal and perinatal care must be guaranteed to pregnant women by female health personnel and cultural mediators, in line with the protocols of the Australian Health System. See Table 3 for recommendations.

3.14. Cervical cancer

Three GLs were selected in relation to cervical cancer [5,7,19].

All three documents recommend offering screening for cervical cancer through Papanicolaou test to migrant and asylum seeker women: Australian and the Canadian GLs [5,19] restrict screening to sexually active women. CDC GL [7] stresses the importance of carrying out the screening within an appropriate and culturally sensitive context, since many women may have suffered sexual violence or experienced other traumatic events. See Table 3 for recommendations.

3.15. Vaccinations

Seven GLs [6,7,19,59–61] and one consensus conference [52] were included, based on the systematic review.

GLs from Australia (ASID and Australian Government) [19,59], American CDC [7], Ireland [6] and Canada [5] recommend a catch-up immunization strategy which takes into account previous vaccinations only if documented. In absence of valid documentation, immunization should be carried out according to the country vaccination schedule; serological tests are not considered as needed, with the exception of hepatitis B and rubella in women of reproductive age, in which it is appropriate to carry out an antibody titre (ASID also recommends chickenpox test for people aged >14 years). The New Zealand GL [60] recommends HBV vaccination for non-immune, and chickenpox, measles, mumps and rubella (MMR) vaccinations; it additionally focuses on tuberculosis, recommending vaccination of children with risk conditions. NICE [61] recommends an initial assessment of the immunological status of migrants and asylum seekers arriving in the country, discussing with them or their parents (in the case of children) the possibility of any other vaccination. The Italian consensus conference [52] deals with prevention, diagnosis and treatment of hepatitis B and C: it recommends HBV screening and vaccination for migrants and asylum seekers at risk, including persons originating from high prevalence areas, drug addicts, partners of infected individuals and persons affected by chronic liver diseases. See Table 3 for recommendations.

3.16. Diversified approaches to diseases/conditions

For each question, the literature review pointed to effective approaches for timely identification of health needs: these approaches included active case finding (based on signs/symptoms of disease); testing offered to asymptomatic members of given groups; mass screening; or integration into routine national health services. The choice was based on epidemiological considerations (like the endemic level in the country of origin or exposure to specific risk factors), availability and sustainability of treatment/care and ethical consideration. In particular, active case finding of signs/symptoms of disease (symptomatic cases) is recommended for tuberculosis disease, malaria, sexually transmitted diseases, intestinal parasites, diabetes, anaemia and pregnancy. Testing (screening) should be offered to asymptomatic individuals coming from endemic areas or exposed to specific risk factors for the following conditions: latent TB infection, HIV, HBV, HCV, syphilis, chlamydia, gonorrhoea, strongyloides, schistosoma, diabetes. Mass screening of all asymptomatic migrants and asylum seekers is recommended for anaemia and hypertension. Cervical cancer screening and vaccination programs should be offered to migrants and asylum seekers after integration into the Italian Health System, through the same age-specific programs offered to the Italian population. For each considered infection/pathology/condition, the referral of the migrant or asylum seeker to the dedicated diagnostic-therapeutic path is recommended, if required.

Furthermore, during the whole reception pathway emphasis needs to be put on the linguistic and socio-relational dimension of care in the various intervention settings; therefore contents and

forms of messages should be adapted to migrants and asylum seekers' cultural reference systems. It is also necessary that social and health workers are adequately trained in a transcultural approach and receive adequate psychological support when dealing with emotionally stressful situations.

3.17. Continuity of care, prevention and health promotion across all reception phases

After drafting the recommendations, and for their easy implementation, each of them was located at the appropriate stage of the reception pathway (rescue at sea, first and second line reception): the aim was to propose continuity of care and guidance for the standardization of local protocols. Therefore, based on evidence of effectiveness and on opportunities provided by the setting, a modulated, progressive approach was proposed.

In particular, during the rescue phase the GL recommends a medical evaluation of signs and symptoms indicative of clinical conditions requiring urgent health assistance or care: as a consequence, it was deemed appropriate that during this phase attention is paid to signs and symptoms of conditions such as tuberculosis disease, malaria, ectoparasitosis, intestinal parasites, and anaemia.

During first line reception, medical examination takes place in a more protected context and with the availability of more time: therefore, it is possible to have a counselling session and evaluate personal and family medical history for chronic and/or infectious diseases, drug history, trauma. In addition, the search for signs and symptoms should be performed at this time, in order to identify the possible presence of tuberculosis disease, malaria, ectoparasitosis, sexually transmitted diseases, intestinal parasites, diabetes, anaemia and hypertension. In this phase pregnancy should be ascertained and pregnant women should be referred to the dedicated reception pathway.

During second line reception, the NHS takes charge of migrants and asylum seekers: as a consequence, at this stage they can be offered screening tests and vaccinations. In particular, an active investigation of diseases/infections (latent TB infection, HIV, HBV, HCV, syphilis, chlamydia, gonorrhoea, strongyloides, schistosoma, diabetes), even in subclinical forms, should be performed: specific screening procedures are offered to asymptomatic subjects, according to epidemiological criteria (high endemicity) and/or to the assessment of risk exposure. Primary prevention is provided to children through vaccinations, according to the national schedule; some vaccinations are also recommended for adults. Mass screening is recommended for complete blood count, and women aged 25–49 should be included in local cervical cancer screening programmes.

Table 4 summarizes GLs recommendations for timely and appropriate identification of health needs, locating them within the Italian reception pathway.

4. Discussion

The present GLs are conceived as a tool to be primarily offered to decision-makers, reception centres managing bodies and social and health workers. Its aim is to promote effective and appropriate health assessments on migrants and asylum seekers upon arrival in Italy and during the subsequent reception phases, in order to avoid uncertainty and variability of practices at regional and local level.

These GLs are, to the best of our knowledge, the first document produced on this important topic with this methodological rigour in Italy; in addition, similar documents are generally focused on infectious diseases, while the present GLs deal with a broader spectrum of conditions, addressed by a multidisciplinary panel including also civil society organizations. The originality of the document lies also on the fact that it provides a complete schedule for medical assessments tailored to the different phases of the Italian reception pathway. This implies that, for the same health condition, the recommended approach may differ according to the specific reception phase.

In addition to the assessments related to specific health conditions, the GLs stress that, at each phase of the pathway, any individual diagnosed with pathological conditions should be guaranteed access to a suitable treatment. Moreover, a constant relationship between health personnel and migrants and asylum seekers should be established in order to allow effective counselling on most frequent diseases, their risk factors and prevention measures. Healthcare workers should receive an adequate training on the epidemiological situation in migrants' countries of origin and transit, and on signs and symptoms of specific diseases (such as malaria or diabetes). Furthermore, they should be trained on a culturally competent approach, which takes into consideration patient's language proficiency and cultural system. At some occasions they should be assisted by interpreters and cultural mediators. They should also receive adequate psychological support in order to manage emotionally stressful situations and to avoid burnout. In this regard, although these GLs are focussed on newly arrived migrants and asylum seekers, their recommendations provide useful indications also for health personnel working with settled migrant communities.

A similar document, limited to infectious diseases, was published by ECDC in 2018 [11]. On most of the considered infectious diseases, the two documents recommend similar measures, except for tuberculosis and hepatitis C. With regard to tuberculosis, the present GLs suggest the use of x-ray only for symptomatic patients, whereas ECDC recommends, with low grade of evidence, to "offer active TB screening using chest x-ray soon after arrival for migrant populations from high-TB incidence Countries". In fact, most supporting literature considers a pre-entry screening approach: this is applicable to many developed countries but not to Italy, where the majority of migrants and asylum seekers arrives outside planned flows, with costs of health screenings being borne by the NHS. Furthermore, Italian epidemiological data show a low prevalence of active tuberculosis among newly-arrived migrants and an increased incidence after the first 2 years of stay, which makes mass screening poorly cost-effective [29,[62–64]. With regard to hepatitis C, the Italian GLs recommend testing for people coming from countries with a prevalence rate higher than 3 %; while ECDC is more restrictive, using 2 % as cut-off line for testing. The two documents adopt similar ethical approaches, recommending that any screening and vaccination should be voluntary, confidential, non-stigmatising and performed for the benefit of the patient; screening procedures must be followed by care and treatment, when requested. Moreover, both documents recommend the removal of individual, community and health system barriers, so that migrants can have full access to screening, vaccination and treatment.

4.1. Implementation and implications for healthcare services

For the GLs to be fully effective, their recommendations have to be implemented on the ground, overcoming structural and organizational barriers that are often source of social and geographical health inequalities. A specific barrier to implementation in Italy is due to the decentralization of the Italian Public Health System that took place in the framework of a constitutional reform that led to the shift of many competences, including health, from the central State to the Regions, since 2001: this often creates an uneven application of national indications and of guidelines, also in the case of migrants' health [66]. As a preliminary step in the implementation process, therefore, and in consideration of the fact that State

Table 4
Early identification of health needs during the reception pathway: summary chart.

	RESCUE AND INITIAL CARE	FIRST RECEPTION	SECOND RECEPTION
Purpose of health assessment	**Initial medical evaluation:** presence of signs and symptoms indicative of clinical conditions requiring emergency/urgent care	**Medical examination:** medical history and active search for signs and/or symptoms indicative of specific diseases	**Registration with the Italian National Health Service:** primary prevention (vaccinations) and secondary prevention, including active detection of diseases, even in subclinical forms, through specific screening procedures
Medical history		Personal and family **medical history** of chronic and/or infectious diseases, drug history, trauma, pregnancy	
			Presence of risk factors for HIV, HBV, HCV, STI (past transfusions, TD, multiple sexual partners, sexual abuse, accidental contact)
Clinical examination	**Detection of signs and/or symptoms**: • cough lasting for ≥2 weeks (TB) • fever, splenomegaly (malaria) • skin inspection (ectoparasitosis) • diarrhoea, abdominal pain, nausea, vomiting, itching • signs and/or symptoms of anaemia	**Detection of signs and/or symptoms**: • cough lasting for ≥2 weeks (TB) • fever, splenomegaly (malaria) • skin inspection for the identification of ectoparasitosis • vaginal, cervical or urethral secretions, dysuria, genital and oral ulcers, skin rash, inguinal lymphadenopathy (STIs) • diarrhoea, abdominal pain, nausea, vomiting, itching, current or past haematuria (parasitosis) • signs and/or symptoms of diabetes • signs and/or symptoms of anaemia • blood pressure measurement	
Screening tests			**Screening:** • complete blood count for all migrants and asylum seekers • inclusion of women aged 25–49 in local cervical cancer screening programmes **Epidemiological criteria (high endemicity) and/or exposure to risk factors:** • TST/IGRA for asymptomatic migrants and asylum seekers from countries with TB incidence >100/100,000 • HIV test for migrants and asylum seekers aged ≥16 years and coming from countries with prevalence >1 %; for pregnant or breastfeeding women; and for persons (including children) exposed to risk factors or with co-infections (other STIs or TB) • HBsAg, HBcAb and HBsAb serology for migrants and asylum seekers coming from countries with HBV prevalence >2 %, and/or with risk factors, or pregnant women • HCV test for migrants and asylum seekers coming from countries with prevalence >3 % and/or persons with risk factors • diagnostic tests for Chlamydia trachomatis and Neisseria gonorrhoeae infections, based on PCR test from urine or on cervicovaginal swabs of asymptomatic persons with STI risk factors • syphilis serology for persons aged ≥16 years, coming from high HIV-endemic areas and/or exposed to risk factors; for minors <16 years with individual risk factors or with other STIs • *Strongyloides stercoralis* and *Schistosoma spp* serology for migrants and asylum seekers having lived or travelled in endemic areas • fasting blood glucose for migrants and asylum seekers aged ≥35 years, coming from countries with high diabetes prevalence and with specific risk factors
Vaccinations			**Unvaccinated children (0–14 years) or those with uncertain or unknown vaccination status** Vaccinations as from the national schedule in force, and according to their age **Adults with uncertain or no vaccination history:** • polio • measles, mumps, rubella, chickenpox, excluding pregnant women • diphtheria, tetanus, pertussis • HBV for the entire adult population screened and negative for serological markers

and Regions share legislative competence on health, the Permanent Conference for Relations between the State, the Regions and the Autonomous Provinces of Trento and Bolzano approved the GLs as National Italian Guidelines in May 2018 [65]. Subsequent, government changes, bringing different political approaches to migration and reception and the related legislative modifications, did not fully support a comprehensive implementation strategy at national level. Noteworthy, however, is that during 2018–2020 the Ministry of Health promoted and implemented the national project "Footprints" (Training of Public Health personnel for the definition of Regional Coordination Plans for Migrants' Health, and the creation of a community of practice) [67] aimed at strengthening regional coordination systems for migrants' health and pushed for GLs implementation across Italian Regions.

At regional level, transposition of the approved National GLs into a regional act would add force to their recommendations, by giving the occasion to adapt the national protocols to the regional health system: some Regions produced specific contextualization acts just before (Marche, Sicily, Sardinia Regions) and after (Lazio and Tuscany Regions) the formal approval of the GLs, introducing implementation monitoring mechanisms in some cases. The Italian Society of Migration Medicine launched a monitoring exercise looking, among other items, also at how the GLs have been transposed at regional level (initial results awaited in December 2020).

A limit to the applicability of these GLs lies in the dynamics of the migratory phenomenon, which entail ongoing reviews: for example, the burden of different conditions considered in countries of origin of migrants and asylum seekers may rapidly change. The need for frequent updates is also due to possible modifications and improvements in diagnostics, with a consequent evolution of the related literature.

In conclusion we suggest that GLs, in addition to be based on a systematic literature review in order to identify evidence-based, effective and appropriate health assessments for migrants upon their arrival and while hosted in reception centres, should additionally consider a targeted approach for each health condition, based on the country of origin and transit or on exposure to specific risk factors; on the availability and sustainability of treatment/care; and on ethical considerations related to the screening procedures (i.e. be voluntary, confidential and non-stigmatizing). We recommend also that each health assessment be related to a specific phase of the reception pathway, in order to avoid unnecessarily repeated assessments and to guarantee effective prevention and continuity of care.

Finally, the following "*take home messages*" can be addressed to policy-makers:

- it is important to produce and periodically update GLs on these issues (research dimension);
- it is essential to disseminate and implement these guidelines taking into account the organizational and management peculiarities of local health services (management dimension of health services);
- GLs have to be supported by training programs targeting health professionals in order to increase their clinical and cultural competence (dimension of welfare quality);
- tools such as these GLs are useful not only to improve clinical appropriateness of interventions, but also to promote economic sustainability and to counter stigmatization and discrimination dynamics (social impact dimension).

Author statement

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Funding

This work was supported by the National Institute for Health, Migration and Poverty (INMP), as part of the Collaboration Agreement among INMP, National Institute for Health (ISS) and Italian Society of Migration Medicine (SIMM) (3rd July 2015) aimed at developing the Program "Guidelines on health protection and on social and health care for migrant populations". The funding source had no involvement in the study design, analysis, interpretation of data, writing of the report or decision to submit the article for publication.

Declaration of Competing Interest

The authors report no declarations of interest.

Acknowledgements

The authors would like to acknowledge all the people involved in the GL development and finalization, who contributed as follow.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.healthpol.2020.12.010.

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