KCE REPORT 321

Federaal Kenniscentrum voor de Gezondheidszorg
Centre Fédéral d'Expertise des Soins de Santé
Belgian Health Care Knowledge Centre

SEXUALLY TRANSMITTED INFECTIONS IN PRIMARY CARE CONSULTATIONS: DEVELOPMENT OF AN ONLINE TOOL TO GUIDE HEALTHCARE PRACTITIONERS

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GOOD CLINICAL PRACTICE

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CEBAM assessors:	The methodological quality of the original KCE guideline 310 (2019)[1] was assessed by Dirk Ramaekers, Martine Goossens, Annelies Van Raemdonck
Acknowledgements:	We would like to thank all healthcare practitioners, patients' representatives, members of the GDG, members of the National Guideline Centre (UK), and KCE colleagues who tested the intermediate versions of the tool, and who, thanks to their constructive comments, helped us to improve the readability and user-friendly use of the tool.

We also thank Mrs Christiana Nöstlinger (Institute of Tropical Medicine) for the revision of the German version of the tool and Mrs Murielle Mendez (Kaleido Ostbelgien) and Mr Nicolas Breuer (Ministerium der Deutschsprachigen Gemeinschaft) for the support they provided in finalizing this version.

Reported interests:

Membership of a stakeholder group on which the results of this report could have an impact: Nicole Dekker (Guideline first line for Chlamydia and HIV)

Holder of intellectual property (patent, product developer, copyrights, trademarks, etc.): Christiana Nöstlinger (Advice for HIV screening for the first line – Steekkaart), Sandra Van den Eynde (Products of Sensoa, e.g. Praat over seks – methodiek)

Fees or other compensation for writing a publication or participating in its development: Sarah Swannet (Guideline on HIV for first line), Heleen Van Mieghem (Guideline on the care for the patient living with HIV for first line)

A grant, fees or funds for a member of staff or another form of compensation for the execution of research: Sarah Swannet (Guideline HIV for first line)

Participation in scientific or experimental research as an initiator, principal investigator or researcher: Christiana Nöstlinger (PI of the Belgian Study 'HERMETIC'), Elizaveta Padalko (Promotor of a PhD on optimization of samples for diagnosis of STI)

Payments to speak, training remuneration, subsidised travel or payment for participation at a conference: Tania Crucitti (FWO fees to take part to congresses; fees from the European Society for Infection Diseases in Obstetrics and Gynaecology – ESIDOG – for training sessions), France Laurent (symposium on vaccination for travelling), Christiana Nöstlinger (Participation to European meetings – EMIS, ECOC), Karen Smets (Conferences about STIs for Domus Medica)

Presidency or accountable function within an institution, association, department or other entity on which the results of this report could have an impact: Christiana Nöstlinger (Project Coordinator of HIVSAM project – Prevention and promotion of the sexual health in Sub-Saharan African Migrants in Flanders; Subsidies from Minister of Health)

Layout: Ine Verhulst

Disclaimer:

- **The experts and stakeholders were consulted during the development of the instrument. Their comments were discussed during meetings.**
- **This report has been approved by common assent by the Executive Board.**
- **Only the KCE is responsible for errors or omissions that could persist. The policy recommendations are also under the full responsibility of the KCE.**

Publication date: 26 November 2019

Domain: Good Clinical Practice (GCP)

MeSH: Practice Guidelines; Primary Health Care; Sexually Transmitted Diseases; Neisseria gonorrhoea; Syphilis; Chlamydia trachomatis; Hepatitis, Viral, Human; HIV

NLM Classification: WA 110 Prevention and control of communicable diseases. Transmission of infectious diseases

Language: English

Format: Adobe® PDF™ (A4)

Legal depot: D/2019/10.273/60

ISSN: 2466-6459

How to refer to this document?

Jespers V, Stordeur S, Desomer A, Cordyn S, Cornelissen T, Crucitti T, Danhier C, De Baetselier I, De Cannière A-S, Dhaeze W, Dufraimont E, Kenyon C, Libois A, Mokrane S, Padalko E, Van Den Eynde S, Vanden Berghe W, Van Der Schueren T, Dekker N. Sexually Transmitted Infections in primary care consultations: development of an online tool to guide healthcare practitioners. Good Clinical Practice (GCP) Brussels: Belgian Health Care Knowledge Centre (KCE). 2019. KCE Reports 321. D/2019/10.273/60.

This document is available on the website of the Belgian Health Care Knowledge Centre.

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LIST OF ABBREVIATIONS

ABBREVIATION	DEFINITION
AGREE	Appraisal of Guidelines Research and Evaluation
BAPCOC	Belgian Antibiotic Policy Coordination Committee
BPG	Benzathine Penicillin G
CALD	Culturally And Linguistically Diverse
CDC	Centers for Disease Control and Prevention
CEBAM	Belgian Centre for Evidence-based Medicine
CMS	Content management system
EBP	Evidence-Based Practice
GDG	Guideline Development Group
GDPR	General Data Protection Regulation
HAV	Hepatitis A Virus
HCP	Health Care Practitioner
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
ICE	Ideas, Concerns, Expectations
ITM/IMT/ITG	Institute of Tropical Medicine (Institut de Médecine Tropicale – Instituut voor Tropische Geneeskunde)
IUSTI	International Union against Sexually Transmitted Infections
JSON	JavaScript Object Notation
LGV	Lymphogranuloma venereum
MSM	Men who have Sex with Men
NAAT	Nucleic Acid Amplification Test

NGC	National Guideline Centre
NIHDI (INAMI – RIZIV)	National Institute for Health and Disability Insurance (Institut National d'Assurance Maladie-Invalidité – Rijksinstituut voor Ziekte- en Invaliditeitsverzekering)
O'YES	Organization for Youth Education & Sexuality (previously SIDA'SOS)
PCR	Polymerase Chain Reaction
PDPT	Patient Delivered Partner Therapy
PEP	Post-exposure prophylaxis
PHP	Hypertext Pre-processor
PICO	Participants–Interventions–Comparator–Outcomes
PrEP	Pre-exposure prophylaxis
RPR	Rapid Plasma Reagin
SSMG	Société Scientifique de Médecine Générale
STI(s)	Sexually Transmitted Infection(s)
Trep	Treponemal
WSW	Women reporting exclusively female partners

SCIENTIFIC REPORT

1 INTRODUCTION

This document describes the steps that were followed to develop an online tool aiming to guide healthcare practitioners (HCPs) in their consultations related to sexually transmitted infections (STIs). This online guidance instrument or application is the translation of the KCE guideline 310[1] entitled 'Diagnosis and management of gonorrhoea and syphilis' together with the guideline developed by the Belgian Working group "Development of Primary Care Guidelines" (Werkgroep Ontwikkeling Richtlijn Eerste Lijn / Groupe de travail Développement de Recommandations de Première Ligne) related to the diagnosis and management of chlamydia.[2] The main objective is to guide the daily clinical practice of HCPs working in primary care.

A search for online 'interactive dynamic' instruments and 'static' sexual health consultation instruments resulted in finding abundant international guidelines and tools. The GDG members emphasised the need for a hands-on instrument, easy to use during a consultation, to guide HCPs in identifying which patient should be offered STI testing. Ideally, the tool guides the physician by identifying which test to perform for which patient, which treatment to prescribe in case of a positive test result and the best way to follow-up the patient and to trace the sexual partners, according to the patient's particular profile or the reason for his/her consultation. Concretely, the focus was on guiding the primary caregiver on the different steps in a sexual health consultation, for the detection and treatment of STIs. To be comprehensive and really useful for the HCPs, the management of the most frequent STIs not covered by the previously mentioned guidelines was also included, i.e. HIV and hepatitis A, B and C, without covering the whole range of STIs.

We decided to create a new instrument offering a clear overview of the different steps for STI testing in a sexual health consultation in primary care as well as to refer to other relevant Belgian information sources, such as the websites of dedicated associations (including O'YES[a] and Sensoa) and medical organisations (Domus Medica, SSMG).

The next chapters aim to describe the process followed to produce this online tool, structured into five steps:

1. Development of the scientific content that needs to be put in the online tool;
2. The choice of technical specifications required for the development and for the update of the tool;
3. The development of the tool integrating all information in 3 languages (French, Dutch and English);
4. A preliminary assessment of a draft version of the tool by KCE collaborators;
5. A test of the revised version of the tool by first line HCPs, patients' representatives and medical specialists (i.e. members of the GDG).

[a] SIDA'SOS was renamed O'YES (Organization for Youth Education & Sexuality) in August 2019

2 DEVELOPMENT OF THE SCIENTIFIC CONTENT

2.1 General approach and clinical research questions

This guidance document was developed owing to a multidisciplinary collaboration of practicing clinicians and KCE experts.[1] Guideline development and literature review expertise, support, and facilitation were provided by the KCE Expert Team. The roles assigned to the GDG for this guidance document were:

- To define the overall structure of the guidance instrument, in close collaboration with the KCE Expert Team and stakeholders;
- To provide feedback on the selection of tools and identify further relevant online material which may have been missed;
- To provide feedback on the content of the guidance;
- To provide feedback on the draft structure;
- To suggest ways for primary care dissimination.

We followed a combined approach integrating the recommendations and guidance from the gonorrhoea and syphilis guideline and the chlamydia guideline.[1] Therefore, gonorrhoea, syphilis and chlamydia recommendations are extracted from the respective guidelines whereas the recommendations on HIV and Hepatitis come from the retrieved guidance documents as presented in section 1.1.

Research questions were defined and translated into PICO (Table 1).

Table 1 – Research questions and PICO (Patients – Interventions – Comparators – Outcomes)

Research questions	
	Developing a sexual health consultation instrument for primary practice
Objective	To define the content and steps of a sexual health consultation in primary care
Research questions	How can opportunistic STI testing be offered? Which questions can be asked to identify risks for an STI? Which samples should be taken per anatomical site? Which diagnostic tests are to be performed for a pre-defined risk group?
Population	Included: Symptomatic or asymptomatic sexually active men and women (pregnant and non-pregnant), including adolescents Excluded: Children aged <15 years; victims of sexual abuse
Intervention	Included: STI consultation and interview guide for primary care Excluded: algorithm to identify the diagnostic tests
Comparator	No comparator
Outcomes	Included: algorithms to structure the sexual health consultation according to the initial reason to consult (related or unrelated to STI)
Study Design	Guidelines, reviews, algorithms in STI guides and STI tools used in first-line clinical setting or community-based settings
	Review of interventions for partner management
Objective	To determine strategies for the management of sexual partner(s) of patients with an STI diagnosis
Research questions	What are the steps in partner(s)' management? How are the patient's sexual contacts identified? What are the lookback periods? How is/are this/these partner(s) notified and managed?
Population	Included: Sexual partners of patients with confirmed diagnosis of an STI (symptomatic or asymptomatic), sexually active men and women (pregnant and non-pregnant), including adolescents
Intervention	Included: Interventions that describe the process of partner management, e.g. identifying contacts of a person infected with an STI and referral to a HCP for appropriate management
Comparator	No comparator
Outcomes	Included: patient initiated referral; provider initiated referral; dual referral; third party referral; testing reminders; patient delivered therapy; patient information; contact methods; anonymous contact tracing; health care referral; public health referral; barriers for referral; novel partner notification practices; partner notification plan; tools for partner referral; contract referral
Study design	Guidelines, reviews; tools; guidance documents for general practitioners

2.2 Search for guidelines, guidance instruments and quality appraisal

2.2.1 Search strategy

A first literature search performed in Medline focused on high quality guidelines and guidance documents covering the STI consultation and partner management. A second search targeting systematic reviews, health technology reports, STI algorithms and articles addressing STI risk factors was conducted in Medline, The Cochrane Database of systematic reviews (http://www.cochrane.org), and Embase (http://www.embase.com/), from 2005 until 11/01/2018. Further, grey literature was also searched and GDG members were consulted to identify relevant evidence that might have been missed during the search process.

2.2.2 Identification and selection of guidance documents

The full search strategy is detailed in the KCE guideline 310.[1] All documents retrieved providing guidance or algorithms useful for a sexual health consultation and for the management of partners in primary care are presented in Table 2 (and Appendix 1).

Table 2 – Overview of international and national guidance documents

Country	Format	Document title	Year
Belgium	Guidance	Domus Medica Praktijktool Seksueel Overdraagbare infecties: aanpak in de huisartsenpraktijk[3]	2017
	Instrument	Domus Medica Advies HIV-screening door huisartsen[4]	2017
	Guidance	Ghapro & Pasop Leidraad voor medische consultaties bij sekswerkers[5]	2014
	Instrument	Ghapro & Pasop samenvattingsschema uit leidraad[5]	2014
	Guidance	BAPCOC Guide belge de traitement anti-infectieux en pratique ambulatoire/Belgische gids voor anti-infectieuze behandeling in de ambulante praktijk en steekkaart[6]	2012
		BAPCOC Recommandations de traitements anti-infectieux en milieu hospitalier/Richtlijnen voor anti-infectieuze behandeling in ziekenhuizen[7]	2017
Netherlands	Guidance	NHG Standaard M82: Het SOA consult[8]	2013
	Instrument	NHG: Beslisboom soa-consult[8]	2013
	Guidance	Nederlandse Vereniging voor Dermatologie en Venereologie Multidisciplinaire Richtlijn Seksueel Overdraagbare Aandoeningen voor de 2e Lijn[9]	2018
UK	Guideline	BASHH National guideline for consultations requiring sexual history taking[10]	2013
	Guidance	BASHH CEG guidance on tests for sexually transmitted infections[11]	2015
Australia	Guideline	Australian sexually transmitted infection & HIV testing guidelines for asymptomatic men who have sex with men[12]	2014
	Guideline	Australasian contact tracing guidelines for primary care practitioners[13]	2011
	Instrument	Quick guide to STI testing. Who? Why? Which? What?[14]	2017
	Instrument	Quick reference to STI management[14]	2017
	Instrument	STI/HIV testing instrument Australia New South Wales[15]	2017
Europe	Guideline	European guideline for the organization of a consultation for sexually transmitted infections[16]	2012
US	Summary	CDC: Screening Recommendations and Considerations Referenced in 2015 STD Treatment Guidelines and Original Sources[17]	2015
	Summary	CDC: Pocket guide - Sexually transmitted diseases treatment guidelines[17]	2015
	Summary	CDC: Wall chart - Sexually transmitted diseases treatment guidelines[17]	2015
	Guideline	CDC and Prevention: Sexually Transmitted Diseases Treatment Guidelines[17]	2015
Canada	Guideline	Canadian guidelines on STIs[18, 19]	2010 & 2016

2.2.3 Quality appraisal

The quality of comprehensive STI guidelines[17-19] was assessed with the Appraisal of Guidelines Research and Evaluation (AGREE) II instrument (www.agreetrust.org) (see the supplement, section 6.1.1, of the KCE guideline 310[1]). No formal quality appraisal was performed for the guidance documents and online instruments.

2.3 Scientific content

A high number of international guides on how to perform a sexual health consultation were retrieved. Nevertheless, the Belgian experts emphasised the need for a Belgian instrument in Dutch and French to facilitate starting a conversation with the patient on their sexual health, identifying which test(s) to perform, how to treat the patient with an STI diagnosis and which follow-up needs to be offered. An English version was added to facilitate the conversation with non-Dutch or non-French speaking patients. The GDG preferred a Belgian instrument that follows a chronological order (Table 3).

Table 3 – Structure of the consultation

Questions to be answered
1. How to start a conversation about sexual health?
2. How to assess if the patient is ready for STI testing?
3. How to assess if the patient is at risk for an STI?
4. How to define which STI should be tested for?
5. Which is the correct sample for each STI?
6. How should the STI(s) be treated?
7. What is the correct follow-up of the patient (including test of cure)?
8. How far back in time should partners be traced?
9. How should partners be contacted?

For these reasons, the GDG members opted for the online instrument for an STI consultation proposed by the Australian New South Wales government: "STI/HIV testing instrument: easy as 1 2 3" updated in September 2017 (https://stipu.nsw.gov.au/wp-content/uploads/STI-HIV-Testing-Tool-online-version-1.pdf) as a basis to create the new online tool.

Additional reasons for choosing the Australian instrument were: the scope of this tool, its applicability to the Belgian situation, the clarity of presentation, its recent update and the yearly revision of the tool. This tool covers the following main topics: 'Starting a conversation about sexual health testing'; 'STI/HIV testing table (describing the patient and specific risk groups)'; 'How to test – Infection, specimen site and test type'; 'Contact tracing'.

2.3.1 How to start a conversation about sexual health

Starting a conversation on sexual health is perceived as difficult by HCPs. Although providing information on the diagnosis and treatment of STIs helps the primary care practitioners to decide which test(s) should be offered to which patient from a certain risk group, it does not guide him/her on how to breach the topic easily. Breaking the ice and starting a conversation about STI tests, is often perceived as one of the main barriers to perform testing. Moreover, the stakeholders feared that asking too many 'direct questions' would frighten the patient away. Therefore, the GDG members emphasised the need to give some examples of opening statements for defined groups with a risk of contracting STIs. As an example, a leaflet about talking about sexual health (praten over seksuele gezondheid) was recently developed by Domus Medica in collaboration with the Vlaamse Vereniging voor Seksuologen and the Sensoa Huisartsenstuurgroep.[20] The following steps guide the general practitioner breaching a sexual health conversation:

- Introduce the sexual health topic by explaining why you want to talk about sexual health, by asking permission, by referring to studies or literature, or by referring to another (fictional) patient.
- Stimulate the patient to open up based on the principle of ICE (ideas, concerns, expectations) and the biopsychosocial model.
- Summarise what the patient told you.
- Formulate a management approach.

We reviewed the retrieved guidance documents to identify the ways and opportunities that were suggested or used to introduce the sexual health topic (Table 4 and Appendix 2).

Table 4 – How to start a conversation about sexual health: Overview of guidance documents

Country	Guidance	Ways and opportunities on how to start a conversation
Belgium	Domus Medica[2]	✓ A consultation around prevention ✓ A consultation on sexual health ✓ A consultation on reproductive health ✓ A travel consultation
	Ghapro[5]	Opportunities for conversation with a sex worker (any gender or nationality). ✓ Self-medication or physical complaint ✓ Contraceptive advice ✓ Prevention aspects (no symptoms) ✓ Unprotected sex or risk contact ✓ Client with questions ✓ Follow-up after STI
Netherlands	NHG[8]	✓ Patient asking for STI information or testing possibly when partner had STI. ✓ STI complaints: urogenital or aspecific extra-genital. ✓ Proactively by practitioner in case of suspicion of STI: o young person contraceptive consult o sexual violence o known high risk such as MSM (Men having Sex with Men) o patient from high endemic STI – HIV[4] – hepatitis area[21]
	Guidance for the second line[9]	Patient with symptoms: ✓ Express your own discomfort breaching the topic ✓ Name the symptoms: “your symptoms could fit an STI. Would you like to be checked for an STI today? ✓ Explain why you are asking question on sexual practices.
Australia	NSW STI/HIV testing instrument[15]	✓ Young people (15–29 years): “STIs are very common among young people and they may not even know they have an STI. We encourage all sexually active young people to get tested regularly for STIs. Would you like a sexual health check-up today?”

		✓ Reproductive health consultations: "While you're here for contraception advice/cervical screening it's a good time to talk about other areas of sexual health, like having a sexual health check-up…" ✓ Travel consultations: "Some people take risks when they travel overseas and that includes having unprotected sex. If you like, we could do a sexual health check-up before you go and when you return." ✓ Hepatitis B vaccination: "Have you had a hepatitis B vaccination? It protects against an infection that can be sexually transmitted. Do you want to talk about this today?"
	Silver book[14]	✓ Young people (15–24 years): same as above ✓ Reproductive health consultations: same as above
US	CDC[17]	✓ Young women: <25 years and ≥ 25 if at increased risk ✓ Pregnant women ✓ Men in high prevalence settings ✓ MSM ✓ Persons with HIV
Canada	STI guideline[18, 19]	✓ Consultation contraception ✓ Sexual health related symptoms or questions ✓ Request for STI testing ✓ Prevention issues in general

The GDG identified additional opportunities to breach the topic: patient asking for a check-up; when the media talks about STIs; a consultation around relationship issues. Next, the preferred opening statements were suggested and finalized and examples for practitioners were provided in Table 5.

Table 5 – Examples of opportunities and opening statements

Examples of opportunities	Examples of opening statements
Young people	"STIs are very common among young people and they may not even know they have an STI. We encourage all sexually active young people to get tested regularly for STIs. Would you like a sexual health check-up today?"
Pregnant women	"It is recommended that every pregnant woman should be tested for HIV and syphilis infection. This is an important opportunity to have a sexual health check."
Sexual health questions including reproductive health consultation	"While you're here for contraception advice/cervical screening it's a good time to talk about other areas of sexual health, like having a sexual health check-up…"
Travel consultation	"Some people take risks when they travel overseas and that includes having unprotected sex. If you like, we could do a sexual health check-up before you go and when you return."
Hepatitis B vaccination	"Have you had a hepatitis B vaccination? It protects against an infection that can be sexually transmitted. Do you want to talk about this today?"
Partner has an STI	"I am sorry to hear your partner has a sexually transmitted infection. I suggest we test you today as well and perform a sexual health check-up; would that be something you would like done?"
MSM any occasion	"Did you know that STIs are very common among men who have sex with men? We encourage all sexually active MSM to get tested regularly for STIs. Would you like a sexual health check-up today?"
Patient asking for a check-up	"You are interested in a blood test to check-up on your health. Are you also thinking of STI tests? Is it OK if we talk about that?"
When the media talks about STIs	"Have you noticed the campaign on TV on STIs? Maybe you had some questions in that context that we can talk about today?"
Relationship questions e.g. divorce	"When starting a new relationship it is recommended to be tested for STIs before having sexual contact without condom. Is this something you would like to talk about?"

2.3.2 How to assess if the patient is ready for STI testing and if there is a need for testing

In the guidance documents a broad range of questions were suggested to assess the patient readiness and risk of having an STI. Questions varied from very general questions (e.g. How do you feel about having an STI test done today?) to very specific questions about a variety of sexual practices (see Appendix 3).

The GDG stressed the importance of trust allowing the patient to speak freely taking into account the long-term contact a practitioner has with his/her patient. Therefore, direct questions on sexual practices were voted against. Originally, during the development of the instrument, several types of questionnaires were tested, including a questionnaire with a sequential algorithm to determine the risk. Finally, it was decided to combine open and closed questions. In a first instance open questions are more appropriate to check on the readiness of the patient to talk about sexual behaviour and sexual health. It was also seen as important to inform the patient that he/she is welcome to discuss sexual health at a future moment. Closed and more direct questions were considered relevant to identify the risk related to specific sexual behaviour e.g. oral sex for pharyngeal infections. The main focus of these more direct questions was to discuss with the patient the (in)consistent use of condoms, particularly with a new partner. The GDG defined the following open and closed questions as guidance to assess readiness for STI testing (Table 6).

Table 6 – Sexual history questions for readiness and needs

Sexual history and behaviour questions	Examples
Ask open question about sexual behaviour to identify patient readiness and needs	"Is it ok to talk about having a sexual health check-up today?" "How do you feel about having an STI test done today?" "Would you be willing to have some STI tests done today?" "Most people find it difficult to talk about sex, contrary to what people think it is not easy to ask questions and find the right answers. Is that something you experience?" "Young people often have questions about their body and sex, do you have them and would you like to talk about this?" "Condoms are not that easy to use routinely; what are your experiences with them?" "Most people struggle to continue to have protected sex when the relation is no longer new; is this something you recognise?"
Ask closed questions to identify potential risk and which tests to perform	"You agreed to have STI tests performed (today); I would like to ask some questions about your sexual activity in order to decide what tests to do:" "When did you last have sex?" "Was it with a woman, a man, or both?" "When you had sex, was it vaginal, oral or anal sex?" "Did you use condoms? What did you use as protection?" "When did you last have sex with a different person(s)?" "Did you use condoms with all of them?" "Do you sometimes use drugs or other products to have better sex?"

2.3.3 How to define the patient's risk or risk group for an STI

The most common patient groups at risk encountered in the guidance documents were gathered into categories as shown in Table 7. Within the selection of guidelines and instruments, several groups were identifiable but not all of them were suitable for the Belgian context. For example, in the Australian instrument[15] a separate group is dedicated to the aboriginals and the Torres Strait Islander people, whereas in Belgium other links with high endemic regions prevail.

The comparison of the guidelines was useful to identify common groups for which a definition was agreed on by the GDG as presented in Table 8. The following points were taken into account while doing so:

- **Young people and adolescents:** The age range varied along the guidelines, mostly starting from an age of 15 up to 29 years. Within our GDG, the agreement was not to specify minimum age but a maximum age of 29 years. The Belgian experts preferred to determine the need for a sexual health consultation depending on the sexual activity of the adolescent rather than on a minimum age. The maximum age was put on 29 years in order to include the student population. Next to age, the aspect of serial monogamous relationships was emphasised by the GDG members. Adolescents potentially switch from one partner to another without being tested by the start of the relationship with a new partner (with an unknown serological status). With this Belgian instrument, the experts would like to facilitate the implementation of a regular sexual health consultation in the medical follow-up of adolescents. As soon as the adolescent has an unprotected sexual contact with a partner belonging to one of the other groups, s/he should be considered at the same risk level as the partner. Also a previous diagnosis of an STI would imply a risk.
- **Heterosexuals:** In consensus with the GDG, this group was restricted to heterosexuals engaged in a non-exclusively monogamous relationship, with unprotected oral, anal or vaginal intercourse and unknown STI status of the partner(s). Relationships at risk include: concurrent partners, multiple partners over a short time period, partner from a group at risk (sex worker, MSM, persons with a migration background, mobile populations, and travellers), or partners in an anonymous setting, new partners with unknown STI status. Within the group of heterosexuals, the people who spontaneously request STI testing were included. Women with an abortion in the past are also included in this group. Most important characteristics to keep in mind to identify the target group is the inconsistent use of a condom with a partner of whom the serological status is unknown, or the relationships with concurrent partners.
- **Pregnant women**: In Belgium, STI testing is advised during pregnancy in the first trimester as described by the KCE guideline 248.[22] The GDG members emphasised the need to retest a pregnant women with high risk sexual behaviour or at increased risk for an STI, even with a primary negative test result, in the third trimester of the pregnancy in order to avoid transmission to the foetus during delivery.
- **Persons with a migration background, mobile populations and travellers:** STI testing is important for those people originating, and travelling to and from STI endemic countries. The stakeholders advised to include persons with a migration background who had been living for a long time in Belgium but had never been tested for STIs.
- **MSM:** Most guidance documents mentioned MSM without further defining additional risk factors, however in the Australian guidelines more specific risk factors, such as multiple concurrent partners, drug use during sex, etc. were mentioned. All MSM may be at risk for an STI, but the GDG focused on the MSM with high risk behaviour. This is defined as: unprotected oral or anal sex with concurrent partners, multiple partners over a short time period, partners from another risk group (sex worker, mobile population, drug use), or with partners in an anonymous setting; taking Pre-exposure prophylaxis (PrEP), a recent HIV diagnosis, or an STI diagnosis in the past or taking Post Exposure Prophylaxis (PEP) in the past.

- **Women reporting exclusively female partners** (WSW) generally are at lower risk for acquiring STIs than women who have sex with men.[23] The risk to acquire STIs such as gonorrhoea, chlamydia or syphilis is lower and does not justify repeated screening tests. However, HPV (human papillomavirus) is common in WSW, just as it is in the general population. WSW also risk acquiring genital herpes and bacterial vaginosis and protozoal infections, specifically trichomonas.[17] WSW who do have male partners occasionally or who fit one of the other groups, may have to be regarded as belonging to this other group for what concerns the STI testing.
- **People who engage in sexual relationships for money (including sex worker, escort, sugar baby, sugar daddy, etc.):** In most guidance documents this group is often named sex workers, but a more general title was preferred by the Belgian stakeholders to avoid excluding persons who do not identify themselves as such.
- **Drug users sharing drug instruments (syringes and needles for injection, straw or rolled bill for snorting):** Sexually active people who injected or snorted drugs in the last 12 months. The lifestyle of people who inject or snort drugs may involve unprotected sexual contact.

Table 7 – Patient or patient groups at risk for STI: Overview guidance

Categories of patients at risk for an STI
Young people 15-29y[15]
Young people 15-34y with at least one risk factor[3]
Sexually active young person <25y[14]
Young women (15-24y)[18, 19]
Young men (20-29y)[18, 19]
Sexually active women (<25y)[17]
Patients aged 13-64y (only for patients with HIV)[17]
Pregnant women[3, 15, 18, 19]
MSM[3, 4, 8, 11, 14, 15, 17-19]
Sex workers (any gender)[3, 5, 8, 14, 15]
Sex workers and their clients[18, 19]
Commercial sex workers[11]
Exchanging sex for money or drugs[17]
IV drug use[3, 4, 11, 14, 15, 18, 19]
People (of any age) with … • New partner (serological status unknown)[3] • >2/multiple partners past 12/6 months (including swingers)[3, 8, 18, 19] • Inconsistent condom use[3, 17] • STI<12 months[3, 17] • Partner with STI[3, 8] • Asymptomatic people requesting STI testing[3, 14, 15] • Abortion, cervical surgery[3] • Partner of patient at risk[3]
Persons from sub-Saharan Africa and other high prevalence countries[4]
A sexually active person of a culturally and linguistically diverse (CALD) background OR A sexually active traveller returning from a CALD country OR Had a sexual partner of CALD background, e.g. from Asia, Africa[14] (CALD is only relevant for and used in Australia)
HIV/HBV high prevalence region[3]
Acquisition in endemic regions[8, 11, 18, 19]

Table 8 – Definitions of persons and groups at risk for STI

Group at risk	Definition
Young people and adolescents	Aged up to 29 years (no minimum age), with (or planning) unprotected oral, anal or vaginal intercourse and with two or more serial monogamous relationships.
Heterosexuals and WSW	In a non-exclusively monogamous relationship, with unprotected oral, anal or vaginal intercourse and unknown STI status of partner(s). Relationships at risk include: concurrent partners, multiple partners over a short time period, partner from a risk group (sex worker, MSM, persons with a migration background, mobile populations, travellers, drug use), **or** partners in an anonymous setting, new partners with unknown STI status.
Pregnant women	Pregnant women at any time of pregnancy.
Persons with a migration background, mobile populations and travellers	Patient or sex partner originates or travels to and from countries that are mostly affected by STIs.
MSM	All MSM with unprotected oral, or anal sex and unknown STI status of partner(s). Relationships and behaviours at high risk include: unprotected oral or anal sex with concurrent partners, multiple partners over a short time period, partner from another risk group (sex worker, persons with a migration background, mobile population, travellers, drug use), **or** with partners in an anonymous setting; taking Pre-Exposure Prophylaxis (PrEP), with a recent HIV diagnosis, **or** an STI diagnosis in the past or taking Post Exposure Prophylaxis (PEP) in the past.
People who engage in sexual relationships for money (including sex worker, escort, sugar baby…)	This category includes men and women who engage in the exchange of sexual activity for income, employment, goods (i.e. food, drugs), services, or housing. Young people, mostly students or single mums, do not consider themselves as sex workers but should be considered as having high risk sexual behaviours.
Drug users sharing drug instruments (syringes and needles for injection, straw or rolled bill for snorting)	Sexually active people who injected or snorted drugs in the last 12 months. The lifestyles of people who inject or snort drugs may involve unprotected sexual contact.

Source: KCE Guideline 310[1]

2.3.4 How to define which STI should be tested for by groups at risk

The STIs that are proposed for testing for each identified 'group at risk' (as in Table 8), are presented in Appendix 5 in Table 21. This summary table reviews the guidance documents for all STIs whereas the KCE guideline 310 defines the groups at risk for gonorrhoea and syphilis (recommendation 'who to test for gonorrhoea' section 3.2.3 and 'who to test for syphilis' section 3.13.4).[1] The Belgian guidance for the risk groups to be tested for hepatitis A, B and C is summarised in Table 22 (Appendix 6).

On the basis of both the reviewed guidance and KCE guideline 310, the GDG defined 'standard' tests (Table 9) for each risk group and other 'optional' tests. The optional tests are conditional and for example, depend on the knowledge of the immune status for hepatitis or HIV. Partner characteristics, belonging to another risk group, or originating from an STI endemic region, were also considered. Other points taken into account were:

- **Young people and adolescents:** Potential over-testing of syphilis e.g. testing every young person and adolescent has to be avoided.
- **Pregnant women:** Chlamydia and gonorrhoea testing should not be performed routinely in all women including pregnant women. In Belgium, STI testing for syphilis, Hepatitis B (if immune status is unknown) and HIV are strongly recommended in the first trimester of the pregnancy.[22] Chlamydia should be tested in pregnant women who are at increased risk, such as pregnant women younger than 25 years old or women with a history of sexually transmitted disease.
- **Persons with a migration background, mobile populations and travellers:** HIV testing is important for those people originating, and travelling to and from HIV endemic countries. The stakeholders advised to include persons with a migration background who had been living for a long time in Belgium and had never been tested for HIV. Indeed, for HIV testing the GDG suggested to follow the advice for practitioners as presented by Domus Medica (see Figure 1 in Appendix 4).[4] Patients with an HIV infection are often detected late. The longer the time between infection and testing, the more likely onwards transmission will take place with missed opportunities to stabilise and improve the health of the infected patient.
- **MSM:** Due to the increased hepatitis A infections in MSM in 2016-2017 in Europe, the GDG supported the idea to test for the immune status of hepatitis A in MSM. Testing for hepatitis A is to be performed together with testing for hepatitis B whenever the immune status is not known. Hepatitis C testing was advised in HIV positive MSM, MSM on PrEP, or for those performing traumatic sexual practices.
- **Drug users sharing drug instruments (syringes and needles for injection, straw or rolled bill for snorting):** Hepatitis C is to be performed as a standard and hepatitis B whenever the immune status is not known. An outbreak of hepatitis A was also reported in injecting drug users and although this group was considered as vulnerable it was not advised to test for hepatitis A.[24] Drug use is associated with high risk sexual behaviour and standard STI testing is therefore indicated.

Table 9 – Which infections should be tested for by groups at risk?

Groups at risk for STI	Which infection?
1. Young people	Standard tests: • Chlamydia (whenever positive and anal sex, test for Lymphogranuloma venereum (LGV)) • Gonorrhoea Unknown immune status Hep B add: • Hep B Sexual contact with partner from group 4 to 7 add: • HIV • Syphilis • Hep C
2. Heterosexuals and WSW	Standard tests: • Chlamydia (whenever positive and anal sex, test for LGV) • Gonorrhoea Unknown immune status Hep B add: • Hepatitis B Sexual contact with partner from group 4 to 7 add: • HIV • Syphilis • Hepatitis C
3. Pregnant women	Standard tests for all pregnant women: • Syphilis • HIV Unknown immune status Hep B add: • Hepatitis B Pregnant women <25 years and older pregnant women when she or her partner belongs to group 1, 2, 4, 5, or 6 add: • Chlamydia • Gonorrhoea
4. Persons with a migration background, mobile populations and travellers	Standard tests: • Chlamydia (whenever positive and anal sex, test for LGV) • Gonorrhoea • Syphilis Unknown immune status Hepatitis B add: • Hepatitis B

	Persons from Sub-Saharan origin or HIV status unknown add: • HIV Persons from endemic region for hepatitis C add: • Hepatitis C
5. MSM	Standard tests: • Chlamydia (whenever positive and anal sex, test for LGV) • Gonorrhoea • Syphilis • HIV Unknown immune status add: • Hepatitis B • Hepatitis A HIV positive, on PrEP, or performing traumatic sexual practices add: • Hepatitis C
6. People who engage in sexual relationships for money (including sex worker, escort, sugar baby…):	Standard tests: • Chlamydia (whenever positive and anal sex, test for LGV) • Gonorrhoea • Syphilis • HIV Unknown immune status add: • Hepatitis B HIV positive, on PrEP, snorting drugs, or performing traumatic sexual practices add: • Hepatitis C
7. Drug use with sharing of drug instruments (syringes and needles for injection, straw or rolled bill for snorting)	Standard tests: • Chlamydia (whenever positive and anal sex, test for LGV) • Gonorrhoea • Syphilis • HIV • Hepatitis C Unknown immune status add: • Hepatitis B

Source: KCE guideline 310[1]; WG Development of Primary Care Guidelines[2]; Sciensano: https://www.sciensano.be/en/health-topics/sexually-transmitted-disease-std/high-risk-groups; Domus Medica: https://domusmedica.be/richtlijnen/themadossiers/themadossier-seksueel-overdraagbare-infecties; O'YES: https://depistage.be/prise-de-risque/; European Centre for Disease Control: https://ecdc.europa.eu/en/publications-data/public-health-guidance-brief-hiv-hepatitis-b-and-c-testing-eueea; HIV reference centre Antwerp (HRC) Institute of Tropical Medicine https://www.itg.be/F/centre-reference-vih; https://www.itg.be/N/hiv-referentiecentrum; https://www.itg.be/E/hiv-reference-centre

2.3.5 *Which is the correct sample for each STI*

The scientific report of the KCE guideline 310[1] and the guideline for chlamydia provide the content for this part. The full details can be found in the respective guidelines. A summary is presented in Table 23 of Appendix 7. The sample to be taken for testing HIV and hepatitis is venous blood. The final guidance for the right sample is presented in Table 10.

Table 10 – The sample and STI test

Infection	Specimen collection site	Test and comments
Combined chlamydia / gonorrhoea	**Woman**: vaginal swab (self-taken first option; clinician-collected second option) OR first-void urine IF oral sex: throat swab IF anal sex: anorectal swab Women with high sexual risk behaviour: all three sites **Men**: Insertive position: Asymptomatic: First stream urine Symptomatic: First stream urine OR a urethral swab IF oral sex: throat swab IF anal sex: anorectal swab **MSM**: all three sites	Use combined Nucleic Acid Amplification Test (NAAT) test. NAAT may be negative in the first 2 weeks after risk contact Swabs for NAAT should be synthetic. Other materials (e.g. cotton wool, wood) might inhibit testing. Urine: The ideal time interval for time since last urinating to consider in providing a sample is 1 hour. First flow (first void) urine sample is preferred over midstream sample both for chlamydia and gonorrhoea. Urethra: collection is invasive requiring insertion of a swab 2–3 cm into the male urethral followed by two or three rotations to collect sufficient cells. Urine specimens are less invasive and are preferred over urethral specimens. Throat: the clinician uses a wooden tongue depressor to hold the tongue in place, and swabs the posterior nasopharynx and the tonsillar arches without touching the sides of the mouth. Do NOT pool specimens whenever more than one sample is taken. Chlamydia: A positive anorectal chlamydia should be tested for lymphogranuloma venereum (LGV) by genotyping in all men; in women only when presenting with proctitis symptoms.

Chlamydia (and LGV)	**Woman**: vaginal swab (self-taken first option; clinician-collected second option) OR first-void urine IF oral sex: throat swab IF anal sex: anorectal swab Women with high sexual risk behaviour: all three sites **Men**: Insertive position: First stream urine IF oral sex: throat swab IF anal sex: anorectal swab **MSM**: all three sites	Use NAAT test. NAAT may be negative in the first 2 weeks after risk contact Swabs for NAAT should be synthetic. Other materials (e.g. cotton wool, wood) might inhibit testing. Urine: The ideal time interval for time since last urinating to consider in providing a sample is 1 hour. First flow (first void) urine sample is preferred over midstream sample. Throat: the clinician uses a wooden tongue depressor to hold the tongue in place, and swabs the posterior nasopharynx and the tonsillar arches without touching the sides of the mouth. Do NOT pool specimens whenever more than one sample is taken. Chlamydia: A positive anorectal chlamydia should be tested for LGV by genotyping in all men; in women only when presenting with proctitis symptoms.
Gonorrhoea	**Woman**: vaginal swab (self-taken first option; clinician-collected second option) OR first-void urine IF oral sex: throat swab IF anal sex: anorectal swab Women with high sexual risk behaviour: all three sites **Men**: IF insertive position: • Asymptomatic: First stream urine • Symptomatic: Urethral swab IF oral sex: throat swab IF anal sex: anorectal swab **MSM**: all three sites	Use NAAT test. NAAT may be negative in the first 2 weeks after risk contact Swabs for NAAT should be synthetic. Other materials (e.g. cotton wool, wood) might inhibit testing. Urine: The ideal time interval for time since last urinating to consider in providing a sample is 1 hour. First flow (first void) urine sample is preferred over midstream sample both for chlamydia and gonorrhoea. Urethra: collection is invasive requiring insertion of a swab 2–3 cm into the male urethral followed by two or three rotations to collect sufficient cells. Urine specimens are less invasive and are preferred over urethral specimens. Throat: the clinician uses a wooden tongue depressor to hold the tongue in place, and swabs the posterior nasopharynx and the tonsillar arches without touching the sides of the mouth. Do NOT pool specimens whenever more than one sample is taken. Gonorrhoea: In case of suspicious symptomatic gonorrhoea take both a NAAT and culture before treatment is started.

Syphilis	Sample venous blood IF ulcer: swab (NAAT analysis only performed at the National Reference Centre – Sexually Transmitted Infections (NRC-STI) (Appendix 8)	Serology tests Serology can be negative up to 6 weeks after risk contact. Swabs for NAAT should be synthetic. Because final diagnosis is made on grounds of clinical picture AND laboratory results: • Communicate with laboratory all relevant information from the patient's history and clinical diagnosis regarding symptoms, stage of infection, and previous infection, HIV status, pregnancy, and risk behaviours. • After having sent samples to a laboratory, results could take 3 to 7 days. Make sure that the testing algorithm chosen by the laboratory is followed through (all diagnostic tests, including trep tests and non-trep tests are performed). If this is not clear, then discuss with laboratory. • If the results are difficult to interpret ask a colleague knowledgeable in syphilis for clarifications and / or refer.
HIV	Sample venous blood	HIV Ab/Ag serology test Serology can be negative up to 6 weeks after risk contact
Hepatitis A	Sample venous blood	Anti-HAV Ig-total
Hepatitis B	Sample venous blood	Serological tests: • Antigen HBsAg • Anti-HBs antibody • Anti-HBc antibody When HBsAg is positive, the patient needs further serological tests (2nd line).
Hepatitis C	Sample venous blood	Serological tests: • HCV antibody If the test is positive, refer to a hepatologist unless the patient is known and has been treated in the past (antibodies stay positive).

Source: KCE guideline 310[1]; WG Development of Primary Care Guidelines[2]; Sciensano: https://www.sciensano.be/en/health-topics/sexually-transmitted-disease-std/high-risk-groups; Domus Medica: https://domusmedica.be/sites/default/files/Advies_hiv-screening_door_huisartsen.pdf; https://domusmedica.be/richtlijnen/themadossiers/themadossier-seksueel-overdraagbare-infecties

2.3.6 How should the STI be treated

The treatment of gonorrhoea, syphilis, and chlamydia as defined in the guidelines is summarised in Table 11. A patient with a positive HIV test needs to be referred to an HIV Reference Centre as soon as possible for confirmation and initiation of antiviral treatment (Appendix 8). In case of a hepatitis A and/or B negative test, a vaccination has to be offered and performed. For a patient with an acute hepatitis infection, it is advised to refer to the 2nd line whenever abnormal liver tests are present. In case of an unknown chronic hepatitis B and C infection the patient is always referred to the 2nd line even when the liver tests are normal (Table 12).

For further information regarding chronic hepatitis B or C infections, see:

- Sciensano website: https://www.sciensano.be/en/health-topics/hepatitis-a-b-c-d-and-e#what-are-the-different-types-of-hepatitis, https://www.sciensano.be/fr/sujets-sante/hepatites-a-b-c-d-et-e/traitements#quel-traitement-pour-les-h-patites-virales-;
- For Flanders: https://www.zorg-en-gezondheid.be/hepatitis-b;
- WHO website: https://www.who.int/hepatitis/en/.

Table 11 – Which is the recommended treatment for each STI test?

Infection	First line Treatment
Chlamydia (and LGV)	**Men and non-pregnant women including young people** Urogenital, oropharyngeal: • Doxycycline 100mg orally twice daily for 7 days **OR** Azithromycin 1g orally Anorectal: • Doxycycline 100mg orally twice daily for 7 days Anorectal LGV infection OR anorectal chlamydia infection in a patient with HIV and unknown status of LGV • Doxycycline 100mg orally twice daily for 21 days **Pregnant women and breastfeeding women** • Azithromycine 1 g orally in a single dose
Gonorrhoea (uncomplicated gonorrhoea of the urethra, cervix, rectum and pharynx)	**Men and non-pregnant women including young people** • Dual therapy: Ceftriaxone 500 mg IM in a single dose AND azithromycin 2 g orally for all cases in a single dose **Pregnant women regardless of the site of infection** • Single therapy: Ceftriaxone 500 mg IM in a single dose for all cases **Person with allergy to Penicillin / Cephalosporin** • Referral to the second line to receive the most adequate treatment.
Co-infection gonorrhoea and chlamydia	**Men and non-pregnant women including young people** Urogenital or oropharyngeal infection: • Ceftriaxone 500 mg IM in a single dose AND azithromycine 2 g orally in a single dose Anorectal infection • Ceftriaxone 500 mg IM in a single dose AND doxycycline 100 mg twice a day orally for 7 days

	Anorectal LGV infection OR anorectal chlamydia infection in a patient with HIV and unknown status of LGV • Ceftriaxone 500 mg IM in a single dose AND doxycycline 100 mg twice a day orally for 21 days **Pregnant women** • Ceftriaxone 500 mg IM in a single dose AND azithromycine 1 g orally in a single dose **Person with allergy to Penicillin / Cephalosporin** • Referral to the second line to receive the most adequate treatment.
Syphilis	**Men and non-pregnant women including young people** *Early syphilis* Adults and adolescents with early syphilis (primary, secondary and early latent up to 1 year) including HIV positive patients: • First choice: Benzathine Penicillin G (BPG) 2.4 million units at once intramuscularly on day 1 • Second choice: Doxycycline 100 mg orally twice daily for 14 days (be aware of photosensitisation) *Late syphilis* Adults and adolescents with late syphilis (> 1 year), including HIV positive patients: • First choice: BPG 2.4 million units IM weekly for 3 consecutive weeks (day 1, day 8 and day 15) • Second choice: Doxycycline 100 mg orally twice daily for 28 days (be aware of photosensitisation) **Pregnant women** Referral to 2nd line for treatment and follow-up **In case of penicillin allergy** • When in doubt, first assess the risk of anaphylaxis. If patients have a history compatible with an IgE mediated allergy then alternative therapies (such as doxycycline) should be used. • Patients should also be referred for skin testing to confirm allergy and for consideration of penicillin desensitisation.

Table 12 – Hepatitis: information and treatment

Type of hepatitis	Information adapted from Sciensano	Treatment
Hepatitis A	Hepatitis A is a disease from which people can recover spontaneously and from which we acquire immunity. For most healthy people, the body eliminates Hepatitis A without medical treatment and the virus does not cause any severe illness. Deaths linked to Hepatitis A are rare.	No treatment
Hepatitis B	As with Hepatitis A, most healthy adults can rid their bodies of Hepatitis B without medicine. But those who cannot fight the virus themselves, 5 to 10% of adults develop chronic hepatitis that can lead to severe liver problems if it is not treated with antivirals.	Antiviral treatment
Hepatitis C	Contrary to Hepatitis B, a large proportion of people infected by Hepatitis C (70 to 80%) develop chronic hepatitis with the risk of complications (cirrhosis or liver cancer). The antiviral treatment is highly effective in eradicating the virus and thereby reduces the risk of liver cancer and other complications of chronic infections. In the event of cirrhosis, a liver transplant can be carried out.	Antiviral treatment

Source: Sciensano (https://www.sciensano.be/en/health-topics/hepatitis-a-b-c-d-and-e/treatments#what-treatment-is-there-for-viral-hepatitis-)

2.3.7 *The follow-up of a patient with an STI*

The follow-up of a patient with a positive test for an STI includes not only starting treatment. Other aspects to consider are: dealing with side-effects of the medication e.g. compliance issues may arise after vomiting or diarrhea; should the patient be evaluated after treatment e.g. is a test of cure necessary or is a referral indicated if the patient does not improve; how is the serology followed-up e.g. syphilis; and are any other STI test indicated. The conclusions for the follow-up and test of cure are summarized in Table 13.

Table 13 – Follow-up and test of cure

Infection	Follow-up	Test of cure

Chlamydia (and LGV)	**Anorectal positive test:**
	• perform genotyping test for LGV:
	  ○ Men: always
	  ○ Women: only when presenting with proctitis symptoms.
	Pregnant women with any positive test:
	• retest during the third trimester
	  ○ to prevent maternal postnatal complications
	  ○ to prevent chlamydial infection of the neonate
	The diagnosis of *chlamydia in pregnant women* should be communicated with the gynaecologist to ensure follow-up of adverse events of treatment and complications of the infection for the mother as well as the foetus or neonate.
		Test of cure should be performed when:
		• Rectal chlamydia infection
		• Rectal LGV infection
		• Pregnant women
		• Treatment with other drugs than recommended
		• Poor compliance
		• Persistence of symptoms
		Scheme of the test of cure
		NAAT four weeks after treatment completion; if positive refer to second line for further treatment.

Gonorrhoea	Patients should be **referred** to the second line at the time of **treatment failure**: • When first line treatment fails based on symptoms or laboratory testing • When the antibiotic sensitivity report indicates resistance to ceftriaxone and/or azithromycin **Pregnant women** with positive test: • retest during the third trimester to prevent maternal postnatal complications and gonococcal infection in the neonate The diagnosis of *gonorrhoea in pregnant women* should be communicated with the gynaecologist to ensure follow-up of adverse events of treatment and complications of infection for the mother as well as the foetus or neonate.	**Test of cure should be performed when:** • Suspicion of treatment failure • Pharyngeal infection • Treatment with other drugs than recommended • Co-infection with chlamydia • Pregnant women **Optional test of cure can be performed:** • to ensure eradication of infection • to identify emerging resistance

		Scheme of the test of cure If persistence of symptoms: 1. culture with antibiotic susceptibility of all the relevant anatomic sites 3-7 days after treatment completion; 2. If culture negative: supplement with NAAT 14 days after completion of treatment. When NAAT is positive refer to the 2nd line. If asymptomatic: 1. NAAT four weeks after treatment completion; 2. If positive perform culture with antibiotic susceptibility testing of all the relevant anatomic sites before referral to second line and starting further treatment.
Syphilis	**In case of a positive serology:** 1. Clinical and serological (non-trep Rapid Plasma Reagin (RPR)) follow-up should be performed • for early syphilis at three and six months • for late syphilis at three, six and 12 months 2. Referral is indicated when • recurrence of signs or symptoms • when RPR titres do not decrease four-fold within 6 months from day 1 of treatment for early syphilis (primary, secondary and early latent <1 year) • when RPR titres do not decrease four-fold within 12 months from day 1 of treatment for late syphilis (> 1 year) **In case of negative results (serum or PCR) in a suspected infected patient:** 1. Symptomatic patients with ulcer(s) treated for syphilis: • repeat serologic tests at 6 weeks after ulcer appearance to exclude diagnosis • optionally, perform serologic tests at 2 weeks after ulcer appearance to exclude diagnosis 2. Asymptomatic patients after an isolated high risk episode with exposure to syphilis: • repeat serologic test at 6 weeks (in all cases) • and at 12 weeks (optionally) after treatment according to laboratory procedures.	**See serology follow-up**

HIV	Performed by 2nd line	Performed by 2nd line
Hepatitis A, B, C	Hepatitis A and/or B: in case of a negative test, perform a vaccination Acute infection: referral to 2nd line whenever abnormal liver tests Chronic hepatitis B and C infections: always refer to 2nd line even when liver tests are normal. If pregnant woman: referral for control and follow-up	Performed by 2nd line

Source: KCE guideline 310[1]; WG Development of Primary Care Guidelines[2]; Sciensano: https://www.sciensano.be/en/health-topics/hepatitis-a-b-c-d-and-e/treatments; Domus Medica: https://domusmedica.be/sites/default/files/Advies_hiv-screening_door_huisartsen.pdf; https://domusmedica.be/richtlijnen/themadossiers/themadossier-seksueel-overdraagbare-infecties

2.3.8 How often should a patient with an STI be re-tested

The frequency of re-testing varied between the guidance documents, for some infections a specific time frame was suggested whereas for other infections the frequency of testing depended more on the assessment of the potential behaviour at risk. A summary is presented in 0.

For patients who have had an STI, the KCE guideline 310[1] stipulates to repeat testing every 3 to 12 months even when asymptomatic whenever high risk sexual behaviour is continued. Patients at increased risk for **gonorrhoea** are:

1. Sex worker of any gender
2. MSM with high risk sexual behaviour
    - unprotected sexual contacts in non-exclusively monogamous relationships
    - who are on PrEP
    - with a recent HIV diagnosis
    - with an STI diagnosis in the past
3. Adolescents and young people up to the age of 29 years who continue to have unprotected oral, anal or vaginal intercourse in non-exclusively monogamous relationships
4. Heterosexual patients who continue to have unprotected oral, anal or vaginal intercourse in non-exclusively monogamous relationships.

Patients at increased risk for **syphilis** are:

1. Sex worker of any gender
2. MSM with high risk sexual behaviour
    - unprotected sexual contacts (including deep kissing) in non-exclusively monogamous relationships
    - who are on PrEP
    - with a recent HIV diagnosis
    - with a syphilis diagnosis in the past

A negative syphilis result will act as a baseline for future testing.

2.3.9 Tracing partners of a patient with an STI

To stop the transmission of the STI between partners and towards new partners, it is important to identify sex partners of the patient diagnosed with an STI. The question is then how far in the past should partners be traced for a specific STI. A summary of the guidance documents is presented in Appendix 10.

The GDG stressed that partner identification is currently the weakest link in the chain of partner notification. An easy to apply approach was preferred. In first instance, the most recent partner or the last partner should be contacted. For patients with multiple partners, the number should be limited. The GDG agreed on 1 to 5 partners maximum whenever a patient knows the partners' identifiers. If the patient has a very high number of partners

then it may be appropriate to focus on the partners in the last month. The stakeholders agreed with this approach. In Table 14 a summary is given together with open questions to introduce the topic. Optionally, the GDG added a timeframe for each infection but only as an indication.

Table 14 – How to identify sexual partners

Identification of sexual partners	Opening statements
Guidance: Identify the last 1 to 5 partners OR If too many those in the last month.	• "It is important your partner(s) get treated so you don't get infected again". • "Most people with an STI don't know they have it because they have no symptoms, but can pass it on to other partners or have long-term problems" • "Think back to when and where you had sex recently or any special events"
Only as an indication: Timeframes for lookback periods Chlamydia and LGV, gonorrhoea: 3 weeks to 1 month Syphilis and HIV: 12 months Hepatitis A: 2 months Hepatitis B and C: 6 months	

2.3.10 How are partners best contacted

While reviewing the guidance several methods for contacting the sexual partner(s) of a patient with an STI were retrieved i.e. patient-initiated referral, provider-initiated referral, contract referral, dual referral notification, and third-party referral notification. To use these methods several instruments have been used i.e. testing reminders by SMS and email, patient information folders, mobile or home telephone, social media, and a letter to pass on to their own general practitioner (GP), contact letters and online partner notification (https://partnerwaarschuwing.nl). A summary is available in Table 15 and Appendix 11.

Table 15 – Methods to contact partners: summary guidance

Method	Description and links
Patient-initiated referral[9, 14-16, 18, 19, 25-28]	The patient chooses to inform his/her own contact(s). This is recommended for well-informed, motivated and confident index cases.
Provider-initiated referral[8, 9, 14-16, 18, 19, 25-28]	The diagnosing healthcare practitioner, his/her delegate or another health agency obtains the consent of the patient and then informs the patient's contact(s). This can be performed anonymously or not (depending on the wishes of the patient).
Contract referral[18, 19, 25-27]	The healthcare provider negotiates a timeframe with the infected person (usually 24-48 hours) to inform his or her partners of their exposure and to refer them to appropriate services.
Dual referral notification[25, 27]	Involves an index patient and provider, together, notifying a partner of exposure.
Third-party referral notification[25]	Involves partners being notified by providers who are not in contact with health departments (e.g. Private physicians).

Other retrieved discussion points were on patient delivered partner therapy (PDPT), what to do with uncooperative index cases/contact, and barriers related to partner notification. In PDPT, the index case is given (oral) medication, together with safety information and contraindications, to give to partners for presumptive treatment without assessment of the partner.[29, 30] This method is controversial, but may be beneficial in high-risk and hard-to-reach populations. It has been applied for example in Victoria, Australia (https://www2.health.vic.gov.au/about/publications/factsheets/pdpt-faq-clinicians).

Barriers related to partner notification[18, 19] are important to consider when choosing the method for partner notification: fear of loss of confidentiality; index case unwilling to inform contacts; patient not reconciled to diagnosis; unawareness of seriousness of consequences; little concern for consequences to contacts; socio-cultural or language differences between

the HCP and the index case; fear of reprisal from partner(s) (physical or emotional abuse); shame of having an infection; fear of re-victimisation on the part of sex crime victims; feared legal procedures. A referral may be indicated to an STI clinic when specialised attention is needed to deal with any of these.

In Belgium, no clear strategy currently exists for contacting partners of patients with an STI. Some methods applied abroad are legally not accepted in Belgium e.g. patient delivered partner therapy. Methods were reviewed by the GDG and strategies discussed for Belgium. Patient-initiated and provider-initiated (medical doctor) referral are the two only options currently available.

The minimum package for patient-initiated referral is presented in Table 16. For provider-initiated referral there are two options. Firstly, if the patient agrees and is able to provide the details of the partner(s), a letter with the minimum package information can be posted by the physician. Because this topic is highly sensitive, members of the GDG preferred to obtain a legal authorization from the Medical Council before suggesting this way of notification. After having introduced a formal demand, a positive answer was obtained by means of an official publication on the website of the Medical Council (05/07/2019); https://www.ordomedic.be/fr/avis/conseil/lettre-d-information-au-partenaire-sexuel-d-un-patient-atteint-d-une-ist; https://www.ordomedic.be/nl/adviezen/advies/brief-ter-verwittiging-van-de-seksuele-partner-van-een-patient-gediagnosticeerd-met-een-soa).

Table 16 – Patient- and provider-initiated referral to contact the partner

Patient-initiated referral	Provider-initiated referral

Give the patient the following to take to the partner(s)
• Information on the STI
• Advise for the partner to be tested
• Letter to take to his/her physician:
  • Letter template
  • Explanation about the STI
  • Need for the partner to come / go for a sexual health consultation
• Plan a follow-up consultation with patient to check that all went well
	Contact the partner in one of the following ways:
	• A letter can be posted to the partner(s) by the health care practitioner
	• Online partner notification: partneralert.be

Source: Domus Medica
https://domusmedica.be/richtlijnen/themadossiers/themadossier-seksueel-overdraagbare-infecties

Secondly, a new method that is currently being implemented by Zorg en gezondheid in Flanders and that was developed by researchers at the ITG, is a dedicated website www.partneralert.be. This online platform is available in Dutch, French and English. Partneralert.be is a digital anonymous platform to inform sexual partners in case of an STI diagnosis. Healthcare workers have to register and are able then to produce STI specific codes which the patient can use to inform anonymously his or her partners via e-mail or SMS. Subsequently the partner receives a link and code to access further information about the STI in question and what to do.

2.3.11 Notification of infectious diseases

Some STIs must be notified. This obligation varies between regions.

BRUSSELS

Gonorrhoea, Syphilis, Hepatitis A (new cases)

- Via the secured internet website of Matra-Bru
- in case of emergency, by calling the Inspection Service of the Cocom (02/552.01.40 or 0478/77.77.08), followed by an e-mail confirmation at notif-hyg@ccc.brussels.

WALLONIA

Congenital syphilis, Hepatitis A

- Via the secured internet website of MATRA - AViQ
- By phone : 071 205 105
- By mail: surveillance.sante@aviq.be

FLANDERS

Gonorrhoea, Syphilis, Hepatitis A, acute Hepatitis B

- To the Dienst Infectieziektebestrijding en vaccinatie of the Flemish Agency for Health and Care (see https://www.zorg-en-gezondheid.be/contact-infectieziektebestrijding-en-vaccinatie)
- In case of emergency or outside office hours : 02 512 93 89
- By mail : infectieziektebestrijding@vlaanderen.be

3 DEVELOPMENT OF THE TOOL

3.1 The choice of technical specifications required for the development and for the update of the tool

In the past, KCE developed different tools for a better understanding and use of its guidelines (see http://lowbackpain.kce.be; http://preop.kce.be; and https://kce.fgov.be/en/a-decision-aid-for-an-informed-choice-when-patient-asks-for-psa-screening). In the current case, the tool has to support the caregiver in conducting a conversation on STIs with a patient, whether they should test their patient for an STI, which test they should perform, how they can treat the STI and how the sexual partners can be alerted. The tool also has to contain general background information on STIs as well as surveillance and reporting links to Belgian official instances.

In order to set up such a tool, KCE had to look for a competent web developer. Following a public procurement, “Een wereld met LEF” was chosen among multiple candidates.[b]

The tool was developed by LEF using a Web a custom content management system[c] (CMS) without a proprietary database (LEFCMS)[d] based on HTML 5, Javascript and CSS technologies. The CMS stores information in "text" files using "JavaScript Object Notation" (JSON), it allows users (in this case, the KCE) to access it by ID and password and create content via an editing interface using the Markdown markup language.

The product site is multilingual, "responsive" (the layout adapts to the type of screen used: computer, tablet, smartphone) and adequately meets Web accessibility standards. The product site also meets privacy requirements such as the General Data Protection Regulations (GDPR). The site has been tested on current web browsers (Chrome, Edge, Firefox, Safari) under the various current operating systems (Android, iOS, macosx, Windows 10).

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[b] https://www.eenwereldmetlef.be

[c] A content management system manages the creation and modification of digital content.

[d] https://cms.metlef.be

The chosen technical platform offers a good durability to the tool: compliance with Web standards, simple Web hosting, few technical updates to be planned. To ensure accessibility, the application was tested for compliance with the Web Content Accessibility Guidelines (WCAG) 2.0.

3.2 The development of the tool integrating the content in English, French and Dutch

3.2.1 Iterative first phase: alpha version

The development of the first draft was done in English after the KCE team brainstormed on its potential general design and subdivisions:

- **Home**: holders and developers, how to proceed, scientific background, scope of the tool and recognition of dedicated agencies and associations.
- **Conversation**: suggested introductory questions for the HCP according to his/her patient profile and the reason of the consultation.
- **Risk assessment**: this page aims to determine which patients are at risk (divided into categories numbered 1 to 7) and which infections to look for in each case, based on the patient's sexual risk behaviour.
- **Sample and test**: according to the infections that are suspected or to be tested, this page details all samples that have to be taken and laboratory tests that are required on the samples.
- **Treatment**: according to the infection diagnosed, this page specifies treatments to be prescribed depending on the patient profile, and the infected anatomical site; all treatment-related precautions are stipulated as well as useful information to deliver to patients.
- **Follow-up**: this page displays relevant information regarding the effectiveness monitoring (test of cure by STI) as well as the long-term follow-up according the risk profile of the patient.
- **Partners**: this page offers practical information on how to approach the identification of sexual partners, ways to inform partners and how to notify STIs in Brussels, Wallonia and Flanders.
- **Useful links**: direct links to dedicated websites with relevant information for patients and professionals are displayed on this page.

While KCE remained in charge of the content of the website, LEF provided a framework that could display the large amount of information in the most convenient way for the user.

The process of further refining the content of the website was done in an iterative manner: the LEF team suggested several possible building blocks and structures, while the KCE team and patient associations (Sensoa and O'YES) gave their feedback on the first alpha versions. Finding the best way to display the information and showing the link from deciding which test to follow-up of a partner was a big challenge.

The translations of the original English version to the French and Dutch versions were performed by KCE experts, i.e. experts in scientific content (Vicky Jespers and Sabine Stordeur) and experts in scientific communication (Karin Rondia and Gudrun Briat).

3.2.2 A preliminary assessment of the tool: beta version

After the KCE team finished the preliminary versions and adjusted the content in three languages, the beta version was distributed internally to a number of KCE experts with different clinical backgrounds and native languages (French, Dutch and English). The objectives of this step were to evaluate the content for understanding by a novice user i.e. recognize unknown terms or abbreviations, the (un)certainty about how to proceed in the 'consultation', opinions on readability, possible errors and typos, user friendliness, and to collect other remarks useful to improve both the content and the display. Experts were chosen based on their knowledge on the topic of STIs, on using websites (technical and legal requirements), on language insights, or on general insights in clinical practice. 21 KCE experts were asked to fill in an online survey between July 2nd and July 5th 2019. This beta version was also tested by the external team who contributed to the development of the KCE guideline 310[1] as a subcontractor, i.e. a team of the National Guideline Centre (NGC) in the United Kingdom. A total of 15 experts responded by filling in the survey and / or giving oral or written feedback.

3.2.3 Feedback from KCE experts and NGC

Several aspects for clarification of the content were pointed out e.g. explanation of what is included and not discussed in the tool; higher visibility of risk category definitions; syphilis serology algorithm which consists of a 'combination' of treponemal and non-treponemal tests as decided by the local laboratory and not by the practitioner; addition and explanation that 'women who have sex with women' are not at increased risk as compared to MSM with high risk behaviour. Reviewers pointed out that certain words such as 'anonymous settings' should be replaced with understandable terms for lay persons. All abbreviations e.g. LGV, NAAT, PrEP were reviewed and explained. Clarification of treatment was sometimes needed, for example, when one dose is taken and only once. Finally, some tabs did not work and websites for additional information were added for specific population subgroups (e.g. https://www.genrespluriels.be/Guide-de-sante-sexuelle).

3.3 A test of the revised version of the tool

After the comments from the KCE experts were taken forward to build the next beta version, this version was sent to a number of HCPs, the members of the GDG group and representatives of patient associations. HCPs were recruited via Domus Medica and the Société Scientifique de Médecine Générale (SSMG). Both associations invited HCPs in their newsletter to test the draft online tool that would help HCPs discussing the subject of STIs with their patients, as well as detecting, testing and treating STIs. A total of 42 doctors (22 Dutch speaking, 20 French speaking) expressed their willingness and registered by mail to test the online tool. As the members of the GDG contributed to the content of the guidelines of gonorrhoea and syphilis, and the tool was developed together during the GDG meetings, GDG members were asked as well to test this version.

3.3.1 Testing via an online survey

Participants were requested to fill in the online survey, asking their opinion about the form and the content of the website (the structure, readability, clarity of clinical information and procedures throughout the pathway: from selecting the patients to be tested to the follow-up post-treatment, the patient profiles) (Appendix 12).

There was ample possibility to write free text, in case respondents wanted to mention something that was not explicitly asked. They had 28 days to respond to the survey (from July 9th till August 5th 2019).

3.3.2 Feedback from HCPs, GDG members and patients' representatives

On 29 respondents, 27 were medical doctors, 1 worked in a laboratory and one was expert in STI and HIV prevention. Medical doctors had an experience in a general practice (19/27), in an STI clinic (4/27), as gynaecologist in a hospital (1/27) and in a community setting (2/27). Finally, the mean age of the respondents was 30-50 years (17/29); 8 respondents were younger than 30 years and 4 respondents were older than 50 years.

Again, several aspects for content clarification came to light from the HCPs and GDG members as well as suggestions for improvement of the ease of understanding (linking information) and inconsistencies across the three languages used. Examples for clarification: the correct sample for LGV genotyping was added; the upper age for the young people group was consistently added; when to refer to the second line for hepatitis infections and HIV was clarified; the use of the 'i' modality was improved to launch a modal with additional definitions or explanations. Certain text sections of the follow-up tab were repeated under the treatment tab to improve the flow of the consultation. The overview table about STIs to be searched for according to the groups at risk was improved by adding the type of sample for each infection. The website links concerning reimbursement rules (INAMI/RIZIV) for PrEP were added.

Feedback from the patients' associations were also very useful. Some examples are: the correct use of terms to avoid stigmatisation; additional examples for introduction of situations typical for each group; expansion of the information of access to PrEP; and the addition of a prevention message to the follow-up tab. The final overall appreciation was considered positive (Table 17).

Table 17 – Overall appreciation of the tool

Questions	Mean score (/4)	Number of respondents
How would you rate the form of the website?	3.3	29
How would you rate the content of the website? (score out of 4)	3.4	28
What do you think about the information presented on the website? (4-scale option; from *not useful at all* to *very useful*)	3.7	28
What do you think about the information presented on the website? (4-scale option; from *not sufficient at all* to *very complete*)	3.4	28
What do you think about the information presented on the website? (4-scale option; from *very complex* to *very simple*)	3.3	28

3.4 Development of a German version of the tool

Following the presentation of the report to the KCE Board of Directors (15 October 2019), a German version of the tool was requested. The translation was entrusted to a translation agency and the revision of this version was carried out by Mrs Christiana Nöstlinger (Institute of Tropical Medicine). Finally, contacts have been made with the Ministry of the German-speaking Community in order to obtain useful links to communicate in the tool. The standard letter proposed by the SSMG for partner notification has been translated into German and posted on the SSMG website.

4 DISSEMINATION OF THE ONLINE TOOL

The dissemination of the STI online tool takes place in two phases. The first phase consists of applying the classical communication strategy of the KCE for any newly approved report, the second phase is the dissemination by the new Belgian Evidence-Based Practice Network (EBP-net).

4.1 KCE communication strategy

4.1.1 Website

As for each KCE report, the present report is published on the KCE website in the month following its approval by the Board of Directors. The tool will be generally accessible and can be found following two ways:

- First, a specific page is created, dedicated to this scientific report, with a short introductory text. Different documents can be downloaded or accessed from this page:
  - This scientific report which details the research process including methodological steps and results. It is written in English, since it is the language of the (Belgian and international) scientific community and allows a widespread dissemination of the research, beyond the national borders.
  - A 10-page summary which outlines in a clear and fluid language the context and the method of development of the tool, more accessible for lay readers, including primary healthcare practitioners and patients. For this reason, the summary is available in French and Dutch
  - A clearly visible button allowing a direct access to the online tool is provided.
- Second, a specific page on the KCE website gathers all practical tools developed so far by KCE (available in French and Dutch)

4.1.2 Press

On the same day as the publication of the report on the website, a press release is sent to approximately 300 journalists including the medical press. The press release is a two-page text written for journalists; it contains all information that can be interesting for the targeted public, in French and Dutch. After the publication of the scientific guideline 310[1], a press release was issued to raise public awareness about the detection and management of sexually transmitted diseases. This press release was widely reported by the written press in Belgium and in France as well as by local and national radio and television stations. It is expected that the availability of the online tool will also raise a certain amount of attention in the general press, and that the medical and professional press will inform the healthcare sector about the new online tool.

4.1.3 Social media and newsletters

KCE will also publish a link towards the online tool via its Twitter, LinkedIn and Facebook accounts.

Moreover, the numerous stakeholder organisations that have collaborated on the guideline and/or the tool development will be informed about the availability of the tool and will be requested to disseminate it through their respective networks, via their own newsletter, social media and/or website.

Finally, KCE also publishes a specific newsletter dedicated to general practitioners. This newsletter is published whenever KCE wishes to share relevant information with this specific public. In the fall of 2019, the present STI tool and an online decision-aid for the prescription of statins in primary prevention are published. A special issue of the newsletter will be devoted to this double publication.

4.2 EBPnet communication

According to the process of the Belgian Evidence-Based Practice Network (EBPnet), all newly developed guidelines must be validated by the dedicated body CEBAM (Belgian Centre for Evidence-based Medicine) before dissemination.

For the dissemination phase, a specific online platform and database called EBPracticenet (www.ebpnet.be) is used. It brings together all guidelines and other EBP material validated by the EBP program. They are available in Dutch and French for all first line healthcare practitioners, in a user friendly, ready-to-use format.

The two guidelines that constitute the background of the STI tool have already both been validated by the CEBAM.

They both will be published on the EBPracticenet platform in the weeks following their publication. Because they are recent and specifically adapted to the Belgian healthcare context, they will rank first in any information search on the topic of STI. And even though they are considered as “classical” guidelines, they will contain a clear, visible link to the online tool.

5 CONCLUSION

We set out to develop an online instrument to guide first line healthcare practitioners in a sexual health consultation. The aim was to use the KCE guideline 310[1] as the backbone and add the information on chlamydia, HIV and Hepatitis from the retrieved guidelines and guidance documents, to come as close as possible to an evidence based online tool. This instrument was reviewed and tested by the end-users, found to be of high quality and considered a useful asset for general practice. This tool will be updated by KCE on a regular basis or whenever new website links are identified by the KCE-team or users. Users and/or stakeholders will indeed be able to inform KCE of additional or new information that may be of interest to improve and complete the content of the tool. The contact information will be available on the website itself which will be on the KCE website next to the aforementioned guideline.[1]

APPENDICES

APPENDIX 1. GUIDANCE DOCUMENTS AND CONSULTATION ALGORITHMS

Table 18 – Retrieved guidance documents and internet links

Country	Format	Document	Year	Internet link
Belgium	Guidance	Domus Medica Praktijktool Seksueel Overdraagbare infecties: aanpak in de huisartsenpraktijk[3]	2017	https://domusmedica.be/richtlijnen/themadossiers/themadossier-seksueel-overdraagbare-infecties
	Instrument	Domus Medica Advies HIV-screening door huisartsen[4]	2017	https://www.domusmedica.be/varia/docman-alles/publiek/praktijkdocumenten/steekkaarten-en-andere-hulpmiddelen/b-bloed-bloedvormende-organen-en-immuunstelsel/1328-advies-hiv-screening-door-huisartsen.html
	Guidance	Ghapro & Pasop Leidraad voor medische consultaties bij sekswerkers[5]	2014	http://www.ghapro.be/nl/ghapro-publicaties_andere.html
	Instrument	Ghapro & Pasop samenvattingsschema uit leidraad[5]	2014	http://www.ghapro.be/nl/ghapro-publicaties_andere.html
	Guidance	BAPCOC Belgische gids voor anti-infectieuze behandeling in de ambulante praktijk en steekkaart[6]	2012	https://upb-avb.be/nl/news/antibioticagids-van-bapcoc-nieuwe-editie/ https://upb-avb.be/news/guide-des-antibiotiques-de-bapcoc-nouvelle-edition/
		BAPCOC Recommandations de traitements anti-infectieux en milieu hospitalier 2017	2017	https://overlegorganen.gezondheid.belgie.be/sites/default/files/documents/bapcoc_guidelineshospi_2017_sbimc-bvikm_nl_v1.pdf https://organesdeconcertation.sante.belgique.be/fr/documents/recommandations-de-traitements-anti-infectieux-en-milieu-hospitalier-2017-integral
Netherlands	Guidance	NHG Standaard M82: Het SOA consult[8]	2013	https://www.nhg.org/standaarden/samenvatting/het-soa-consult https://www.nhg.org/standaarden/volledig/nhg-standaard-het-soa-consult.
	Instrument	NHG: Beslisboom soa-consult[8]	2013	https://www.nhg.org/sites/default/files/content/nhg_org/uploads/standaard/download/beslisboomkaart_a4_formaat_opwebsites_plaatsen_versie_nov_2013.pdf

	Guidance	Nederlandse Vereniging voor Dermatologie en Venereologie Multidisciplinaire Richtlijn Seksueel Overdraagbare Aandoeningen voor de 2e Lijn[9]	2018	https://www.nhg.org/sites/default/files/content/nhg_org/uploads/multidisciplinaire_richtlijn_soa_herziening_2018.pdf
UK	Guideline	BASHH National guideline for consultations requiring sexual history taking[10]	2013	https://www.bashhguidelines.org/current-guidelines/sexual-history-taking-and-sti-testing/ https://www.bashhguidelines.org/media/1078/sexual-history-taking-guideline-2013-2.pdf
	Guidance	BASHH CEG guidance on tests for sexually transmitted infections[11]	2015	https://www.bashhguidelines.org/media/1084/sti-testing-tables-2015-dec-update-4.pdf
Australia	Guideline	Australian sexually transmitted infection & HIV testing guidelines for asymptomatic men who have sex with men[12]	2014	https://www.clinicalguidelines.gov.au/portal/2489/australian-sexually-transmitted-infection-and-hiv-testing-guidelines-2014-asymptomatic
	Guideline	Australasian Contact Tracing Guidelines	2019	http://contacttracing.ashm.org.au/contact-tracing-guidance/introduction
	Instrument	Quick guide to STI testing. Who? Why? Which? What? [14]	2017	http://ww2.health.wa.gov.au/Silver-book
	Instrument	Quick reference to STI management[14]	2017	http://ww2.health.wa.gov.au/Silver-book
	Instrument	STI/HIV testing instrument Australia New South Wales[15]	2017	https://stipu.nsw.gov.au/gp/hiv-and-sti-clinical-management/
Europe	Guideline	European guideline for the organization of a consultation for sexually transmitted infections[16]	2012	http://journals.sagepub.com/doi/abs/10.1258/ijsa.2012.012115?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub%3Dpubmed&
US	Summary	CDC: Screening Recommendations and Considerations Referenced in 2015 STD Treatment Guidelines and Original Sources[17]	2015	https://www.cdc.gov/std/tg2015/screening-recommendations.htm
	Summary	CDC: Pocket guide - Sexually transmitted diseases treatment guidelines[17]	2015	https://www.cdc.gov/std/tg2015/default.htm
	Summary	CDC: Wall chart - Sexually transmitted diseases treatment guidelines[17]	2015	https://www.cdc.gov/std/tg2015/default.htm
	Guideline	CDC and Prevention: Sexually Transmitted Diseases Treatment Guidelines[17]	2015	https://www.cdc.gov/std/tg2015/default.htm
Canada	Guideline	Canadian guidelines on STIs[18, 19]	2010 updates 2016	https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/sexually-transmitted-infections.html

APPENDIX 2. STARTING A SEXUAL HEALTH CONVERSATION

Table 19 – How to start a conversation about sexual health: Overview guidance

Country - guidance	Ways and opportunities on how to start a conversation
Belgium - Domus Medica SOI[3]	• preventief consult 15-34; IV drugs, afkomst zelf of partner soi endemisch gebied, HIV patient • consult seksuele gezondheid, abortus vraag, partner soi, MSM, seks werker, SOI laatste 12m, nieuwe partner 6m, ≥ 2 partners in 12m, vraag naar testing • consult reproductieve gezondheid, zwangerschap, cervicale ingreep • consult reisadvies
Belgium – Domus Medica HIV[4]	Not reported
Belgium - Ghapro[5]	Aanleiding tot gesprek bij sekswerkers (including sub-Saharische population and MSM) • Zelf-medicatie • Fysieke klacht • Onveilig contact • Advies van collega of klant • Vraag naar anticonceptie • Preventief consult (zonder klachten) • Controle na doorgemaakte SOI of risicovol contact
Belgium – BAPCOC ambulatory care[6]	Not reported
Netherlands - NHG[8]	• Soa-vraag/soa-onderzoek op eigen verzoek of na partnerwaarschuwing. • Soa-klachten: zowel urogenitale klachten als aspecifieke extragenitale soa-klachten. • Proactief door huisarts bij vermoeden risico op een soa, bijvoorbeeld bij jongeren tijdens pilconsult, seksueel geweld, of bekend hoog risico; ondermeer bij MSM of mensen afkomstig uit een een soa-, hiv- of hepatitis-endemisch gebied.
Netherlands – Guidance 2e line[9]	Patiënt met symptomen: • Benoem eventueel eigen ongemak met het onderwerp • Benoem de symptomen: “uw klachten zouden kunnen passen bij een SOI. Vindt u het goed dat ik u op SOA nakijk? • Benoem de reden waarom u vraagt naar gebruikte sekstechnieken
UK – BASHH (2013) (focus on sexual health clinics)	Not reported

UK – BASHH (2015)	Not reported
Australia – NSW STI/HIV testing instrument[15]	• Young people (15–29 years): "STIs are very common among young people and they may not even know they have an STI. We encourage all sexually active young people to get tested regularly for STIs. Would you like a sexual health check-up today?" • Reproductive health consultations: "While you're here for contraception advice/cervical screening it's a good time to talk about other areas of sexual health, like having a sexual health check-up…" • Travel consultations: "Some people take risks when they travel overseas and that includes having unprotected sex. If you like, we could do a sexual health check-up before you go and when you return." • Hepatitis B vaccination: "Have you had a hepatitis B vaccination? It protects against an infection that can be sexually transmitted. Do you want to talk about this today?"
Australia – Silver book[14]	• Young people (15–24 years): "STIs are very common among young people and they may not even know they have an STI. We encourage all sexually active young people to get tested regularly for STIs. Would you like a sexual health check-up today?" • Reproductive health consultations: "While you're here for contraception advice/cervical screening it's a good time to talk about other areas of sexual health, like having a sexual health check-up…"
Australia – guidelines for MSM[12]	Not reported
Europe – IUSTI 2012 [16]	Not reported
US – CDC[17]	• young women: <25 years and ≥ 25 if at increased risk • Pregnant Women • Men in high prevalence settings • Men Who Have Sex With Men (MSM) • Persons with HIV
Canada[18, 19]	• Consultation contraception • Sexual health related symptoms • Request for STI testing • Sexual health questions • Prevention issues in general

APPENDIX 3. SEXUAL HISTORY QUESTIONS

Table 20 – Sexual history questions: Overview guidance

Country - guidance	Sexual history questions and topics
Belgium - Domus Medica SOI[3]	• Seks met mannen, met vrouwen of met beide? • Twee of méér partners in de laatste 6 maanden? • Nieuwe partner in de laatste 6 maanden? • Partner afkomstig uit soi-endemisch gebied? • Partner met een diagnose van soi • Orale en/of vaginale en/of anale seks? • Correct condoomgebruik bij zowel orale, als vaginale als anale seks? • Hygiënisch gebruik van seksspeeltjes? • Extremere vormen van seksueel gedrag: fisting, bondage, sm, plas/ kakseks? • Heeft de patiënt ooit een soi gehad? • Heeft de patiënt ooit een ongeplande zwangerschap meegemaakt? • Heeft de patiënte ooit een abortus (arte provocatus) laten uitvoeren? • Heeft de patiënte ooit een HPV-positief uitstrijkje voor baarmoederhalskanker gehad? • Anticonceptiegebruik • Druggebruik vroeger en nu • Eigen afkomst
Belgium – Domus Medica HIV[4]	Not reported
Belgium – Ghapro[5]	• Soort prostitutie • Werkomstandigheden • Aard van seksuele handelingen (receptief of insertief vaginaal, anaal, oraal) en met wie + aard van seksuele techniekene (speeltjes, fisting, etc) • Condoomgebruik en gebruik van glijmiddel bij klanten en eigen partner • Gebruik anticonceptie • Aanwezigheid van klachten • Condoomfalen • Onveilige contacten • Vaginale hygiënemaatregelen

	• Medicijngebruik/zelfmedicatie, overgevoeligheid voor bepaalde medicijnen • Zo nodig: info over laatste medisch consult, vroegere testen en eventuele uitslagen/vaccinaties • Vroegere SOI en eventuele behandelingen • Drugs-of alcoholgebruik
Belgium – BAPCOC ambulatory care[6]	Not reported

Netherlands – NHG[8]	Aanwezigheid van één van de volgende risicofactoren:
	• MSM?
	• Wisselende contacten (>3 in afgelopen 6 maanden)?
	• Afkomstig uit soa-endemisch gebied?
	• Seksueel contact tegen betaling?
	• Partner met verhoogd risico?
	• Klachten?
	• Partner met een soa?
	• Afkomstig uit endemische gebieden soa, hiv, hepatitis b?
	“Om een soa bij u uit te sluiten is het van belang dat er verschillende test monsters worden afgenomen. Dit wordt medebepaald door met wie u seks heeft en welke sekstechnieken u gebruikt. Daarom wil ik u vragen op welke manieren u seks heeft:
	• “Heeft u seksueel contact met mannen of vrouwen of allebei?”
	• "Bent u de insertieve (gevende) of juist receptieve (ontvangende) partij, of misschien allebei?"
	• Technieken:
	  ○ Vaginaal: vrouw: geneukt worden, receptief, ontvangend; man: neuken, insertief, gevend.
	  ○ Oraal: pijpen, receptief, ontvangend; cunnilingus (beffen); gepijpt worden, insertief, gevend.
	  ○ Anaal: vingeren/rimmen/fisten; neuken, insertief, gevend, Top; geneukt worden, receptief, ontvangend, Bottom.
	• Drugs: U kunt bijvoorbeeld vragen of iemand “chems” gebruikt. En hoe hij/zij de middelen gebruikt. Of u vraagt of de patiënt “slamt” (IV gebruik tijdens seks)

Netherlands – Guidance 2e line[9]	• Seksueel risico: “Heeft u seksueel contact met mannen of vrouwen of allebei?” • Seksuele technieken: “Bent u de insertieve (gevende) of juist receptieve (ontvangende) partij, of misschien allebei?”
UK – BASHH (2013)	Sexual history for all patients includes: • Do you have a regular sexual partner, live-in, regular, casual partner, duration of the relationship and whether the partner could be contacted • How many different sexual partners have you had in the past 3 months? Rationale: taking a three month risk history would identify risk behaviour not covered by a negative syphilis and third generation HIV antibody test on the day of the consultation

- Have you ever had an STI in the past? If yes, what and when? Patients with a history of previous syphilis should have the date of diagnosis, stage of syphilis, treatment given and clinic of treatment recorded. Rationale: to allow the interpretation of positive syphilis serology in patients with a previous history of syphilis
- Past medical and surgical history. Rationale: to identify conditions that may be associated with or influence the management of STIs.
- Drug history and history of allergies: to identify medication that may interfere with sexual function, to identify potential drug interactions and if drugs cannot be given safely.
- For women born after 1995, a HPV vaccination history. Rationale: to facilitate access to vaccination of those eligible if not started or not completed.
- When was your sexual contact of concern? Rationale: to inform the patient of any need for repeat testing if still inside 'window' periods for infection detection and to help in assessing the need for emergency contraception or post-exposure prophylaxis for HIV infection.
- When the last cervical cytology was taken?

Minimum sexual history for symptomatic male patient attending for STI testing:

- Symptoms/reason for attendance
- Last sexual contact, partner's gender, anatomic sites of exposure and condom use, any suspected infection, infection risk or symptoms in this partner
- Previous sexual partner details as for LSC (last sexual contact), if in the last three months, and a note of total number of partners in last three months if more than two
- Previous STIs
- Blood-borne virus risk assessment and vaccination history for those at risk
- Past medical and surgical history
- Medication history and history of drug allergies
- Agree method of giving results
- Establish competency, safeguarding children/vulnerable adults
- Recognition of gender-based violence/intimate partner violence
- Alcohol and recreational drug history

Minimum sexual history for symptomatic female patient attending for STI testing:

- Symptoms/reason for attendance
- Date of last sexual contact (LSC), partner's gender, anatomic sites of exposure, condom use and any suspected infection, infection risk or symptoms in this partner
- Previous sexual partner details, as for LSC, if in the last three months and a note of total number of partners in last three months if more than two
- Previous STIs
- Last menstrual period (LMP) and menstrual pattern, contraceptive and cervical cytology history
- Pregnancy and gynaecological history

	• Blood-borne virus risk assessment and vaccination history for those at risk • Past medical and surgical history • Medication history and history of drug allergies • Agree the method of giving results • Establish competency, safeguarding children/vulnerable adults • Recognition of gender-based violence/intimate partner violence • Alcohol and recreational drug history
UK – BASHH (2015)	Not reported
Australia – NSW STI/HIV testing instrument[15]	Ask these questions in order to identify potential risks and which tests to do: "I'd like to ask you some questions about your sexual activity so we can decide what tests to do:" • When did you last have sex? • Was that with a regular or casual partner? • Was it with a man, a woman, or both? • Did you use condoms? • When you had sex, was it vaginal, oral or anal sex? • When did you last have sex with a different person? • Did you use condoms with them?
Australia – Silver book[14]	Sexual history: • Does the patient have a regular sex partner and when did they last have sex? • Does the patient have casual sex partners and when did they last have sex? • Does the patient have sex with men, women or both? • What are the possible risk behaviours of sexual partners? • What type of contraception is used? Are condoms used? • Does the patient, or do the partners, have a history of previous STIs? • Does the partner have any symptoms? • Are sexual activities vaginal; oral; anal? • Are their sexual contacts from overseas or interstate? Rationale: A full and relevant clinical history enables the service provider to anticipate what might be found on physical examination. In addition, it is important to determine what risk factors may be present. Information about sexual practices also determines which sites should be examined and the range of specimens to be collected. Drug history and other factors: risks for blood-borne viruses, which include: • injecting drug use • blood transfusion before 1985 • body piercing

	• tattoos • country of birth/ethnicity
Australia – guidelines for MSM[12]	Sexual history: • unprotected anal sex • more than 10 sexual partners in six months • participate in group sex • use recreational drugs during sex • are you HIV positive
Europe – IUSTI 2012 [16]	History of presenting complaint (details of physical symptoms) In women: • Lower genital tract symptoms • Abnormal vaginal discharge • Vulval symptoms (pruritus, lumps, ulceration, superficial dyspareunia) • Upper genital tract symptoms • Pelvic pain • Abnormal menstruation (intermenstrual or postcoital bleeding, dysmenorrhoea) • Deep dyspareunia In men: • Genital lumps • Urethral discharge • Dysuria • Genital itch, soreness or rash (balanoposthitis, ulceration) • Testicular pain In both: • Rectal discharge, bleeding or pain • Anorectal lumps or lesions • Conjuctivitis • Mono/pauci-articual arthritis • Rashes (genital and/or disseminated) • Symptoms suggestive of HIV infection • Past medical history • Past surgical procedures • Past history of testing for STI's, including HIV • Drug history • Drug allergies In women: gynecological, obstetric, menstrual, cervical cytology and contraceptive histories

	• Sexual history (recent sexual partnerships, same sex relationships, types of sexual contact (vaginal, anal, oral)) • Symptoms suggestive of STI (including HIV) in sexual partners • Characteristics associated with high risk of HIV acquisition: MSM, commercial sex workers, injection drug users, sexual partners from areas of high HIV prevalence, recipients of infusions of blood, sexual partners of the above

US – CDC[17]	Assessment of behavioural risk:
	• Open-ended questions ("tell me about any new sex partners you've had since your last visit", "what has your experience with using condoms been like?")
	• Understandable, non-judgmental language ("are you sex partners men, women or both?", "have you ever had a sore or scab on your penis?")
	• Normalizing language ("some of my patients have difficulty using a condom with every sex act. How is it for you?")
	• Five P's:
	  ○ Partners: Do you have sex with men, women, or both?" "In the past 2 months, how many partners have you had sex with?" "In the past 12 months, how many partners have you had sex with?" "Is it possible that any of your sex partners in the past 12 months had sex with someone else while they were still in a sexual relationship with you?"
	  ○ Practices: "To understand your risks for STDs, I need to understand the kind of sex you have had recently." "Have you had vaginal sex, meaning 'penis in vagina sex'?" If yes, "Do you use condoms: never, sometimes, or always?" "Have you had anal sex, meaning 'penis in rectum/anus sex'?" If yes, "Do you use condoms: never, sometimes, or always?" "Have you had oral sex, meaning 'mouth on penis/vagina'?" For condom answers: if "never": "Why don't you use condoms?" If "sometimes": "In what situations (or with whom) do you use condoms?"
	  ○ Prevention of pregnancy: "What are you doing to prevent pregnancy?"
	  ○ Protection from STDs: "What do you do to protect yourself from STDs and HIV?"
	  ○ Past history of STDs: "Have you ever had an STD?" "Have any of your partners had an STD?"
	• Additional questions to identify HIV and viral hepatitis risk include: "Have you or any of your partners ever injected drugs?" "Have your or any of your partners exchanged money or drugs for sex?" "Is there anything else about your sexual practices that I need to know about?"
	• Additional information about gaining cultural competency when working with certain populations.

Canada – Guidance[18, 19]	"Part of my job is to assess sexual and reproductive health issues. Of course, everything we talk about is completely confidential. If it is OK with you, I would like to ask you a few questions in this area". • Are you sexually active now, or have you been sexually active? This includes oral sex or anal sex, not just vaginal sex. • Do you have any symptoms that might make you think that you have an STI? (Do you have any sores on or around your genitals? Does it hurt or burn when you pee? Have you noticed an unusual discharge from your penis, vagina or anus? Do you have pain during sex?) • What are you doing to avoid pregnancy? (Do you or your partner use any type of birth control?) • What are you doing to avoid STIs including HIV? • Do you have any concerns about sexual or relationship violence or abuse? • Have you or your partner(s) used injection or other drugs (e.g., crystal meth)?" When risk move to more detailed questions: • Do you have a regular sexual partner? If yes, how long have you been with this person? • Do you have any concerns about your relationship? If yes what are they? (e.g., violence, abuse, coercion)

- When was your last sexual contact? Was that contact with your regular partner or with a different partner? How many different sexual partners have you had in the past 2 months? In the past year?
- Are your partners, men, women or both?
- Do you perform oral sex (i.e., Do you kiss your partner on the genitals or anus)? Do you receive oral sex? Do you have intercourse (i.e., do you penetrate your partners in the vagina or anus [bum]? Or do your partners penetrate your vagina or anus [bum])?
- Have any of your sexual encounters been with people from a country other than Canada? If yes, where and when? How do you meet your sexual partners (when travelling, bathhouse, Internet)? Do you use condoms, all the time, some of the time, never? What influences your choice to use protection or not? If you had to rate your risk for STI, would you say that you are at no risk, low risk, medium risk or high risk? Why?
- Have you ever been tested for STI/HIV? If yes, what was your last screening date?
- Have you ever had an STI in the past? If yes, what and when?
- Past medical and surgical history
- Drug history and history of allergies
- For women born after 1995, a HPV vaccination history
- When was your sexual contact of concern?
- If symptomatic, how long have you had the symptoms that you are experiencing?
- Do you and/or your partner use contraception? If yes, what? Any problems? If no, is there a reason? + compliance
- Last menstrual period and menstrual pattern
- Have you had any reproductive health problems? If yes, when? What?
- Have you ever had an abnormal Pap test? If yes, when? Result if known
- Have you ever been pregnant? If yes, how many times? What was/were the outcome(s) (number of live births, abortions, miscarriages)?
- Do you use alcohol? Drugs? If yes, frequency and type? If injection drug use, have you ever shared equipment? If yes, what was your last sharing date. May be indicated particularly in cases were disinhibition may be a factor in risk taking behaviour and in young people taking risk
- Have you had sex while intoxicated? If yes, how often? Have you had sex while under the influence of alcohol or other substances? What were the consequences?
- Do you feel that you need help because of your substance use?
- Do you have tattoos or piercings? If yes, were they done using sterile equipment (i.e., professionally)?
- Other: Non-use of condoms associated with erectile dysfunction, repeated condom breakage or slippage, participation in group sex events, use of alcohol and non-injecting drug use, use of social networking websites to find sexual partners, use of high risk venues, receptive fisting, traumatic sexual practice and use of sex toys
- Have you ever traded sex for money, drugs or shelter?
- Have you ever paid for sex? If yes, frequency, duration and last event
- Have you ever been forced to have sex? If yes, when and by whom?
- Have you ever been sexually abused? Have you ever been physically or mentally abused? If yes, when and by whom?
- Do you have a home? If no, where do you sleep? Do you live with anyone?

APPENDIX 4. HIV TESTING

Figure 1 – Belgian guidance for HIV testing by general practitioners

Advies hiv-screening door huisartsen

Screenen voor hiv is belangrijk voor de patiënt en de volksgezondheid. **Een derde van de hiv-patiënten in België wordt te laat gediagnosticeerd.** Gemiddeld zitten er 23 maanden tussen een hiv-infectie en de diagnose. In die periode is er risico op hiv-transmissie. **De kans op transmissie is quasi nihil wanneer de hiv-patiënt medicatie neemt**, een stabiele ondetecteerbare virale lading heeft (tijdens de laatste 6 maanden) en geen andere seksueel overdraagbare infectie. **Tijdige opstart van hiv-medicatie verhoogt ook de levenskwaliteit en levensduur van de patiënt en is kosteneffectief** op lange termijn. Huisartsen zijn uitstekend geplaatst om hiv vroegtijdig op te sporen. Daarom is het aangeraden om naast uw huidige screening (zoals bijv. van zwangere vrouwen of op vraag van de patiënt) ook proactief en routinematig een hiv-test voor te stellen aan onderstaande groepen.

STEL PROACTIEF EEN HIV-TEST VOOR AAN:

Patiënten met een verhoogd risico

Hoe vaak testen?

- ✓ Mannen die seks hebben met mannen
- ✓ Mensen uit sub-Saharaans Afrika en andere hoog-prevalentielanden (ook als ze reeds lang in België verblijven of hier geboren zijn)
- ✓ Injecterende druggebruikers

→ Minstens jaarlijks, bij risicogedrag om de 3 maanden. Maak samen met je patiënt een afweging.

- ✓ Mensen die seksueel contact hadden met iemand uit voorgaande groepen

→ Maak samen met je patiënt een afweging op basis van gedrag

Zie ook: http://www.bhiva.org/documents/guidelines/testing/glineshivtest08.pdf

Patiënten met aandoeningen indicatief voor een hiv-infectie

- ✓ Seksueel overdraagbare infecties
- ✓ Hepatitis B of C (acuut of chronisch)
- ✓ Dysplasie van de baarmoederhals
- ✓ Herpes zoster
- ✓ Seborrhoïsche dermatitis/ exantheem (langdurig en terugkerend)
- ✓ Onverklaarde koorts (> 38°C, herhaaldelijk gemeten, geen aanwijsbare oorzaak na 1 week)
- ✓ Onverklaarde leukocytopenie/ trombocytopenie (langer dan 4 weken)

→ Stel ALTIJD een hiv-test voor

- ✓ Onverklaard gewichtsverlies
- ✓ Onverklaarde lymfadenopathie
- ✓ Onverklaarde orale candidiasis
- ✓ Onverklaarde chronische diarree
- ✓ Ernstige of atypische psoriasis
- ✓ Onverklaarde perifere neuropathie
- ✓ Terugkerende longontsteking

→ Maak een afweging op basis van afkomst en gedrag

zie ook: http://hiveuropa.eu/Portals/0/Guidance.pdf.pdf

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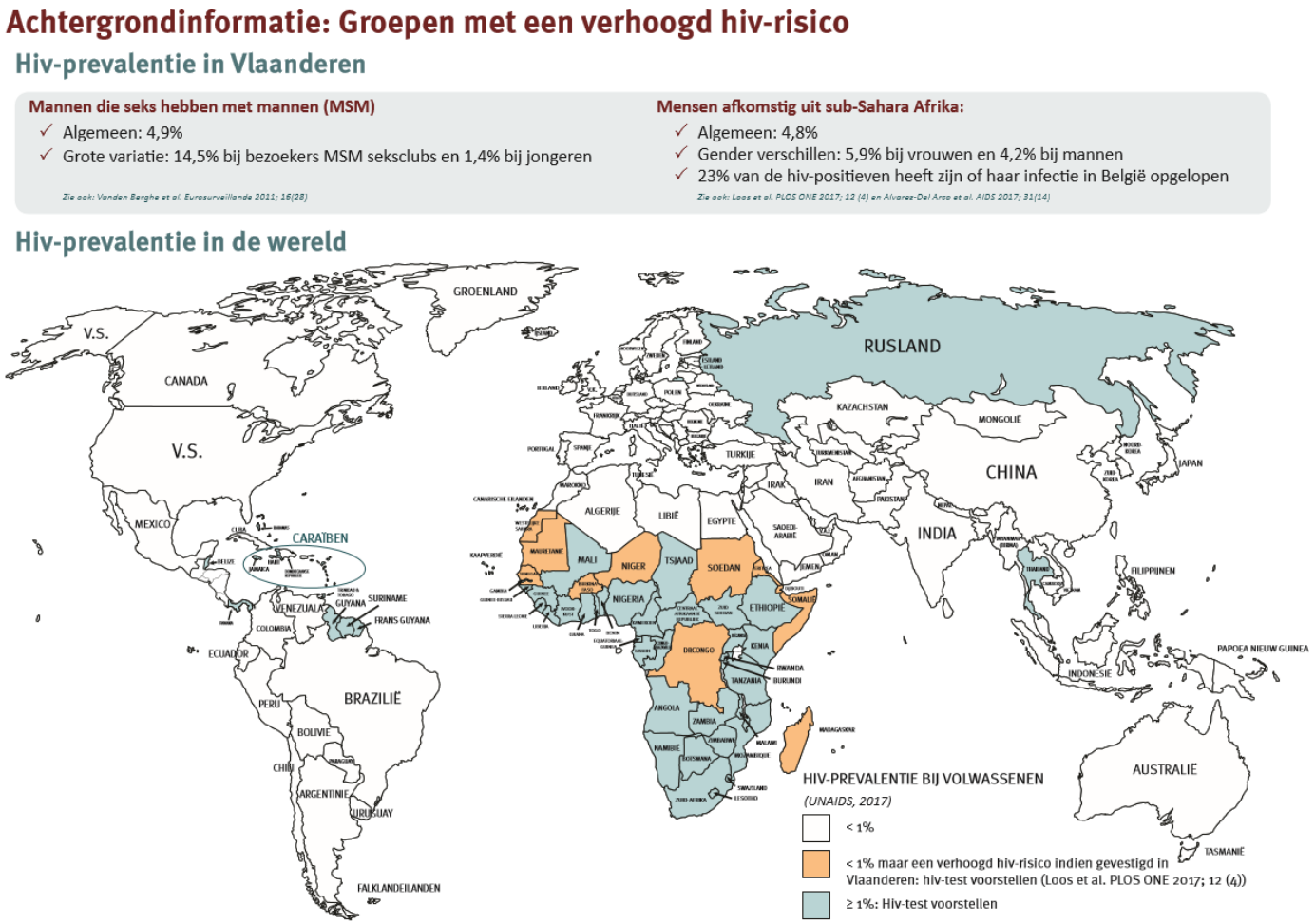
Source: https://www.itg.be/E/hiv-reference-centre ; https://www.itg.be/F/centre-reference-vih ; https://www.itg.be/N/hiv-referentiecentrum

Figure 2 – HIV prevalence in the world



Source: https://www.itg.be/E/hiv-reference-centre ; https://www.itg.be/F/centre-reference-vih ; https://www.itg.be/N/hiv-referentiecentrum

APPENDIX 5. WHICH STI TEST

Table 21 – How to define which STI should be tested for by risk: Overview guidance

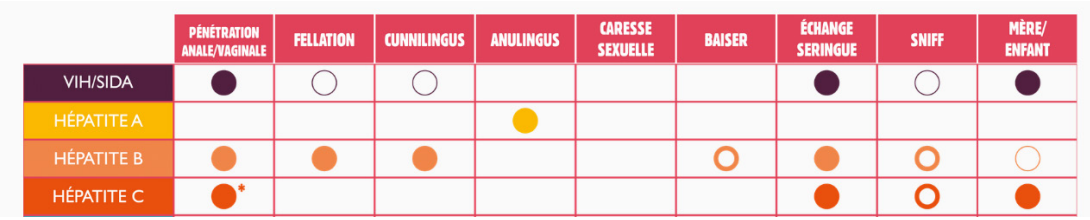
Who is the patient?	Guidance documents
1. Young people and adolescents	• Chlamydia[3, 8, 11, 14-19] • Gonorrhoea[3, 11, 14, 16-19] • Hepatitis B[3, 14, 15] • Syphilis[15 3, 11, 14, 16] • HIV[3, 4, 14-16 11], HIV in 15-19y[18, 19], HIV in 13-64y[17] • Hepatitis C[3] • HPV[18, 19] • Genital Herpes (HSV 1 and 2)[18, 19]
2. Heterosexuals	• Chlamydia[3, 8, 14, 15] • Gonorrhoea[3, 8, 14] • Hepatitis B[3, 8, 14, 15, 18, 19] • Syphilis[3, 8, 14, 15] • HIV[3, 8, 14, 15] • Hepatitis C[3]
1. Pregnant women	• Chlamydia[3, 15] • Gonorrhoea[3] • Hepatitis B[3, 15] • HIV[3, 15, 18, 19] • Syphilis[3, 15] • Hepatitis C[3]
2. Persons with a migration background, mobile populations and travellers	• Chlamydia[8, 14] • Gonorrhoea[8, 14] • Syphilis[3, 8, 14, 18, 19] • HIV[4, 8, 14, 18, 19] • Hepatitis B[3, 8, 11, 14, 18, 19] • Hepatitis C[3, 14] • Chancroid[18, 19] • Granuloma inguinale[18, 19] • Lymphogranuloma venereum[18, 19]

3. MSM	• Chlamydia[3, 8, 11, 12, 14, 15] • Gonorrhoea[15 3, 8, 11, 12, 14, 17-19] • Syphilis[12, 14, 15 3, 8] aged 30-39[18, 19] • HIV[3, 4, 8, 12, 14, 15, 18, 19] • Hepatitis A[12, 15 11, 14] • Hepatitis B[3, 8, 11, 12, 14, 15] • Hepatitis C[3, 11, 12, 15] • Lymphogranuloma venereum[18, 19]
4. People who engage in sexual relationships for money (including sex worker, escort, sugar baby…)	• Chlamydia[3, 5, 8, 14, 15] • Gonorrhoea[3, 5, 8, 14, 15] • Syphilis[3, 5, 8, 14, 15, 18, 19] • HIV[3, 5, 8, 14, 15] • Hepatitis B[3, 5, 8, 11, 14, 15] • Hepatitis C[3, 5] • Hepatitis A[5] • Less frequent STIs[5]
5. Drug users sharing drug instruments (syringes and needles for injection, straw or rolled bill for snorting)	• Chlamydia[3, 14, 15] • Gonorrhoea[3, 14, 15] • Syphilis[3, 14, 15] • Hepatitis A[11, 15] • Hepatitis B[3, 11, 14, 15, 18, 19] • HIV[3, 4, 14, 15, 18, 19] • Hepatitis C[3, 11, 14, 15]

APPENDIX 6. HEPATITIS TESTING

Table 22 – How to define which STI should be tested for: Additional guidance for hepatitis testing

Belgian Stakeholder	Hepatitis type by risk group	Website
Sciensano	**Hepatitis A** • People travelling in an endemic zone or in countries with poor sanitation • MSM • People who eat shellfish • Non-vaccinated people **Hepatitis B and C** • People who have sexual relations without a condom with a person who has Hepatitis B or Hepatitis C • Intravenous drug users • Healthcare professionals • People who have received a blood transfusion or clotting factor transfusion prior to 1990 (Hepatitis C) • People undergoing haemodialysis treatment • Newborns whose mothers are infected by Hepatitis B or Hepatitis C • People who travel to an endemic zone • MSM living with HIV • People who have tattoos or piercings using unsterilized equipment	https://www.sciensano.be/nl/gezondheidsonderwerpen/hepatitis-a-b-c-d-en-e
Zorg en Gezondheid Vlaanderen	**Hepatitis A** • Gezinsleden, • situaties waar hygiëne moeilijker te handhaven is (vb. kinderopvang), • reizigers naar hoog-endemische landen, • professionele blootstelling (rioolwerker), • seksuele blootstelling (oro-anale contacten) **Hepatitis B** • Mensen die in contact komen met HBsAg-positieve personen via gezinssituatie, beroep of seksueel risicogedrag;	https://www.zorg-en-gezondheid.be/hepatitis-a. https://www.zorg-en-gezondheid.be/hepatitis-b

	• Pasgeborenen van HBsAg-positieve moeders. **Hepatitis C** • Bij transfusie of bloederige medische ingrepen in België < 1 juli 1990; • Nierdialyse patiënten; • Druggebruikers die spuiten of snuiven; • Kinderen geboren uit een Hepatitis C+ moeder; • Seksuele partners en de gezinsleden van Hepatitis C besmette patiënten; • Mensen die tatoeages, piercings of acupunctuur ondergingen zonder correcte voorzorgsmaatregelen; • Bij medische zorg in endemische landen; • HIV- of Hepatitis B-seropositieve patiënten, in het bijzonder MSM; • (Para)medisch personeel inclusief tandartsen.	https://www.zorg-en-gezondheid.be/hepatitis-c
O'YES ASBL 2019		https://depistage.be/prise-de-risque/

APPENDIX 7. STI SAMPLES

Table 23 – Which is the correct sample for each STI test: Overview guidelines

Infection	Specimen collection site and sample	Test
Chlamydia (and LGV)	**Women**: vaginal swab[$] (first option) or first-void urine (second option) IF oral sex: throat swab[€] IF anal sex: anorectal swab[$] **Men**: First stream urine anytime IF oral sex: throat swab[€] IF anal sex: anorectal swab[$] *[$]self-collected or by clinician [€]clinician collected*	NAAT (always use synthetic swabs) May be negative in the first 2 weeks after risk contact A positive anorectal chlamydia should be tested for **LGV** by genotyping in all men; in women only when presenting with proctitis symptoms.
Gonorrhoea	**Women**: vaginal swab[µ] (first option) OR first-void urine IF oral sex: throat swab[€] IF anal sex: anorectal swab[$] Women with high sexual risk behaviour: all three sites **Men**: First stream urine anytime IF oral sex: throat swab[€] IF anal sex: anorectal swab[$] **MSM**: all three sites *[$]self-collected or by clinician [€]clinician collected [µ]self collected*	NAAT (always use synthetic swabs) May be negative in the first 2 weeks after risk contact Do NOT use culture testing for **diagnosis** (except for symptomatic male gonorrhoea). Take a sample for culture in case of a positive NAAT before treatment (for surveillance of resistance) is started.
Syphilis	Blood IF ulcer: swab (NAAT analysis only performed at the National Reference Centre – Sexually Transmitted Infections (NRC-STI)	Syphilis serology; repeat serology at 6 weeks after risk contact in case of a negative result NAAT (always use a synthetic swab)

APPENDIX 8. HIV REFERENCE CENTRES

Antwerpen

1. Aidsreferentiecentrum Antwerpen: https://www.itg.be/N/aidsreferentiecentrum
   A. Instituut voor Tropische Geneeskunde, Kronenburgstraat 43/3, 2000 Antwerpen, T 03-247.64.65
   B. Universitair Ziekenhuis Antwerpen, Wilrijkstraat 10, 2650 Edegem, T 03-821.51.53 (weekend en 's nachts: 03-821.52.50)

Brussel - Bruxelles

2. Universitair Ziekenhuis Brussel, AIDS Referentie Centrum, Dienst Algemene Interne Geneeskunde, Laarbeeklaan 101, 1090 Jette, T 02-477.60.01. 02-477.51.00 Se présenter aux urgences de jour comme de nuit.
3. Cliniques Universitaires Saint-Luc, Centre de prise en charge, Avenue Hippocrate 10, 1200 Bruxelles (Woluwe-Saint-Lambert), T 02-764.19.02. Pour le centre de référence sida, appeler le 02 764 21 56. Pour le Traitement Post-Exposition (TPE): se présenter aux urgences de jour comme de nuit.
4. CHU Saint-Pierre, Centre de Traitement de l'Immunodéficience, Rue Haute 322, 1000 Bruxelles, T 02-535.31.77. Site César De Paepe, Rue des Alexiens, 11. T 02-535.37.32 La S clinic vous propose une consultation entièrement consacrée aux infections sexuellement transmissibles, le TPE et également une consultation avec un sexologue. Consultations avec et sans rendez-vous le mardi de 13h30-16h00 et le vendredi de 8h30 à 11h00 et de 13h30 à 15h30.
5. Cliniques Universitaires de Bruxelles Hôpital Erasme - ULB Centre de référence Unité de Traitement des Immunodéficiences Route de Lennik 808, 1070 BRUXELLES (ANDERLECHT) T 02-555.46.82. En journée, appeler le 02 555 74 84 (service infectiologie). En soirée ou la nuit, aller directement au service des urgences.

Hainaut

6. Centre Hospitalier Universitaire (CHU) de Charleroi, Espace Santé, Boulevard Zoé Drion 1, 6000 CHARLEROI, Tél. : +32 (0)71/92 22 58. Clinique des maladies infectieuses : 071/92.23.06

Liège

7. Centre de référence SIDA du CHU de Liège, Polyclinique L. Brull, Quai Godefroid Kurth, 45, 4020 LIEGE, Tel.: +32 (0)4/270 31 90

Limburg

8. Jessa Ziekenhuis Hasselt, Aids-referentiecentrum, Salvatorstraat 20, 3500 HASSELT. Om een afspraak te maken kunt u ons op weekdagen van 8u30 tot 12u30 contacteren op: 011 33 76 50. Op latere tijdstippen kan u terecht op 011 33 55 77.

Namur

9. CHU UCL Namur Site Godinne, Avenue du Dr Therasse 1, 5530 YVOIR - Secrétariat d'infectiologie et de la Convention HIV: 081/42 20 81.

Oost-Vlaanderen

10. Universitair Ziekenhuis Gent, Referentiecentrum van het U.Z. Gent, C. Heymanslaan 10, 9000 GENT, T 09-332.23.50 & T 09-332 23 45

Vlaams-Brabant

11. UZ Leuven Specifiek revalidatiecentrum inwendige ziekten. Herestraat 49 3000 LEUVEN, T 016-34.47.75

West-Vlaanderen

12. AZ Sint-Jan Brugge Oostende Ruddershove 10 8000 BRUGGE, T 050-45.23.21 & T 050-45.23.20 (voor afspraak)

APPENDIX 9. RETESTING AFTER A POSITIVE TEST

Table 24 – How often should the patient be tested: Overview guidance

Who is the patient?	How often should the patient be tested from guidance?
1. Young people and adolescents	• Chlamydia: Annually[15, 17] • Hepatitis B: Confirm immune status (history of prior vaccination or serology) and vaccinate if not immune[3, 14, 15] • Syphilis and HIV: Consider according to risk assessment and local STI and HIV prevalence[3, 14-16]. For patients with increased risk: at least annually, in case of risk behaviour every 3 months[4]. HIV testing should be offered/provided to an individual who is sexually active but has not been tested for HIV[18, 19] • Gonorrhoea: Not reported [14], according to risk assessment[3], annually but not recommended in men and older women at low risk for infection[17] • Hepatitis C: Depending on the STI or the risk assessment[3] • HPV: Selection of test should be based on patient history, risk factors and findings on physical examination[18, 19] • Genital Herpes (HSV 1 and 2): Selection of test should be based on patient history, risk factors and findings on physical examination[18, 19]
2. Heterosexuals	• Chlamydia: Annually or more often according to risk assessment[3, 15] • Hepatitis B: Confirm immune status (history of prior vaccination or serology) and vaccinate if not immune[3, 14, 15], 3 months after risk contact[8] • Syphilis: Consider according to risk assessment and local STI and HIV prevalence[3, 15], 3 months after risk contact[8] • HIV: Offer to everyone requesting testing[15]. Time frame according to risk assessment[3]. 3 months after risk contact[8] • Gonorrhoea: Time frame according to risk assessment[3] • Hepatitis C: Time frame according to risk assessment[3]
3. Pregnant women	• Chlamydia: Consider in pregnant women aged 15-29y and those at higher risk[15] • Gonorrhoea: Depending on risk assessment[3] • Hepatitis B: All pregnant women should be screened using the HBsAg test. Vaccinate susceptible women who are at increased risk[3, 15] • Syphilis and HIV: Every pregnancy[15, 18, 19]. Depending on risk assessment[3] • Hepatitis C: Depending on risk assessment[3]
4. Persons with a migration background, mobile populations and travellers	• Chlamydia, Gonorrhoea: Time frame according to risk assessment[18, 19] • Syphilis: 3 months after risk contact[8] • HIV: At least annually, in case of risk behaviour every 3 months[8] • Hepatitis B: Confirm immune status (history of prior vaccination or serology) and vaccinate if not immune[3, 14]: 3 months after risk contact[8] • Hepatitis C: is not an STI but consider screening if from a country of high prevalence, e.g. Asia, Africa, South America[14]

5.	**MSM**	• Chlamydia, Gonorrhoea, Syphilis, HIV: At least annually (MSM a), up to 4 time per y for MSM who fall into one or more or the following categories: have any unprotected anal sex, have ≥10 sexual partners in 6 months, participate in group sex, use recreational drugs during sex, are HIV positive (MSM b)[12, 15, 18, 19]. HIV only if HIV negative[12]. At least annually, in case of risk behaviour every 3 months (5). Syphilis and HIV 3 months after risk contact[8] • Hepatitis A and B: Confirm immune status (history of prior vaccination or serology) and vaccinate if not immune[3, 12, 14, 15]. Hepatitis B 3 months after risk contact[8]. Hepatitis A in the context of a local outbreak[11] • Hepatitis C: If HIV positive or have history of injecting drug use[12, 15]. In HIV infected MSM and sex partners[11] • Lymphogranuloma venereum: Selection of test should be based on patient history, risk factors and findings on physical examination.
6.	**People who engage in sexual relationships for money (including sex worker, escort, sugar baby…)**	• Chlamydia, Gonorrhoea, Syphilis, HIV: Testing should be based on: local STI prevalence, symptoms, diagnosed or suspected STI in contact, and clinical findings. Frequency based on risk assessment (private and professional life). Offer testing more often if condom use is <100% (including history of condom breakages/slippages) or at patient request[15] , According to risk assessment[3] Gonorrhoea and Chlamydia: At least 1x/year but also depending on risk behaviour, min 14 days after unsafe contact or if complaints[5] Syphilis: At least 1x/year but also depending on risk behaviour, 3 months after unsafe contact, selection of test should be based on patient history, risk factors and findings on physical examination[5, 8, 18, 19] HIV: At least 1x/year but also depending on risk behaviour, 3 months after unsafe contact[5, 8] • Hepatitis B: Confirm immune status (history of prior vaccination or serology) and vaccinate if not immune[3, 5, 14, 15] 3 months after risk contact[8] • Hepatitis C: According to risk assessment[3, 5] • Hepatitis A: Confirm immune status (history of prior vaccination or serology) and vaccinate if not immune[5] • Less frequent STIs: If complaints or suspicion of risk[5]
7.	**Drug use with sharing of drug instruments (syringes and needles for injection, straw or rolled bill for snorting)**	• Chlamydia, Gonorrhoea, Syphilis: Annually or more often according to risk assessment[3, 15] • Hepatitis A and B: Confirm immune status (history of prior vaccination or serology) and vaccinate if not immune[3, 14, 15] • Hepatitis C and HIV: According to risk assessment and annually with an ongoing history of injecting drugs[15]. At least annually, in case of risk behaviour every 3 months[4]

APPENDIX 10. PARTNER TRACING

Table 25 – How far back should partners be traced: Overview guidance

INFECTION	Guidance documents*
Chlamydia	6 months[12, 14, 15] 60 days[17-19]: sexual partners and newborns of infected mothers Symptomatic men: 4-6 weeks[8, 9] Asymptomatic men and women or if infection exists already longer: 6 months[8, 9]
Gonorrhoea	3 months[14] 2 months[12, 15] or 60 days[17-19]: sexual partners and newborns of infected mothers Symptomatic men: 4-6 weeks[8, 9] Asymptomatic men and women or if infection exists already longer: 6 months[8, 9]
Syphilis	Primary syphilis: 3 months above/beyond duration of symptoms[8, 9, 12, 14, 15, 17-19] Secondary syphilis: 6 months above/beyond duration of symptoms[8, 9, 12, 14, 15, 17-19]. In case of negative screening: past 3 months since last negative test[9] Early latent syphilis: 12 months[8, 9, 12, 15, 17-19], 24 months[14] In case of negative screening: past 3 months since last negative test[9] Late latent/stage undetermined: variable[8, 18, 19], 24 months[9]
HIV	Start with recent sexual or injecting drug use needle-sharing partners[12, 15] 12 weeks[14] Outer limit is onset of risk behaviour or last known HIV-negative test result[12, 15] Variable[18, 19] 1y[8] In case of past negative test: all sexual partners from the past 3 months since last negative test[9] Without past negative test: current sexual partner(s) and ex-partners since past year, if possible further back in time[9] In case of complaints of acute retroviral syndrome: past 3 months[9] In case of warning since more than 1 y: mainly partners at clear risk[9]
Hepatitis B	6 months prior to onset of acute symptoms[8, 12, 15] If asymptomatic, according to risk history[15] All household and sexual contacts of a person with chronic Hepatitis B[14] Acute: variable[18, 19], 6 months[9] Chronic: variable[18, 19], 1 y[9]

Hepatitis C	6 months prior to onset of acute symptoms[12, 15] If asymptomatic, according to risk history[12, 15] Note: rarely sexually transmitted except in HIV co-infection[15] Contact tracing is generally not carried out for all HCV cases[14] MSM (anal, oral, manual, rectal penetration): 2 weeks before jaundice[9] If no icterus: minimal past 6 or if possible 9 months (or 3 months since last negative test)[9] No timeline reported but partners of persons with HCV and HIV infection should be tested, if not known to be infected[17]
Hepatitis A	50 days from onset of symptoms[12] No timeline reported but importance of contact tracing to prevent further transmission[14] Infectious 2 weeks before and one week after jaundice[9]

APPENDIX 11. CONTACTING PARTNERS

Table 26 – How to contact partners: summary of the guidance documents

Method	Description and links
Patient- initiated referral[9, 14-16, 18, 19, 25-28]	The patient chooses to inform their own contact(s). Discuss with the patient how their contact(s) can be informed and then provide the patient with information to give to their contact(s). Patient referral is recommended for well-informed, motivated and confident index cases. It is important to use follow-up consultations to confirm that the contacts have been notified and assessed adequately.
Provider-initiated referral[8, 9, 14-16, 18, 19, 25-28]	The diagnosing healthcare practitioner, their delegate or another health agency obtains the consent of the patient and then informs the patient's contact(s). This can be performed anonymously or not (depending on the wishes of the patient) This is considered the best option for contact tracing HIV infections or if there are any concerns around domestic violence. Contact tracing by GGD (Gemeenschappelijke Gezondheidsdienst, The Netherlands)
Contract referral[18, 19, 25-27]	The HCP negotiates a time frame with the infected person (usually 24-48 hours) to inform his or her partners of their exposure and to refer them to appropriate services
No action[26]	
Dual referral notification[25, 27]	Involves an index patient and provider, together, notifying a partner of exposure. Dual referral provides the index patient direct support in the notification process and might decrease the possibility of negative consequences such as violence of severe emotional reactions.
Third-party referral notification[25]	Involves partners being notified by providers who are not in contact with health departments (e.g. Private physicians).

Instruments[3, 9, 12, 14, 25, 27]	• Testing reminders: SMS and email
	• Patient information:
	  ○ Patient brochure: https://stipu.nsw.gov.au/wp-content/uploads/ADOPT_Brochure_PFSHS_PATIENT-FINAL.pdf; www.letthemknow.org.au ; www.thedramadownunder.info; www.zanzu.be
	  ○ Partner brochure: https://stipu.nsw.gov.au/wp-content/uploads/ADOPT_Brochure_PFSHS_PARTNER-FINAL-1.pdf
	• Mobile or home telephone
	• Social media
	• Letter: sample letter (PDF 16KB) to pass on to their own GP explaining: that they have been in contact with a person diagnosed with an STI and may have contracted an STI and the importance and need for examination and testing, and empirical treatment of chlamydia, gonorrhoea and syphilis.
	• Contact letters ("Contactstroken")
	• Online partner notification: https://partnerwaarschuwing.nl
	• Referral to specialist agency
	Strategies to enhance case finding: core areas (a specific, typically geographically defined area, such as a neighbourhood or census tract, that has a relatively high concentration of STDs and likely accounts for a large proportion of disease transmission in a community); social networks (group of persons connected by various types of social relationships, such as family, work, and recreational relationships (sexual and drug use));

	The internet (used to facilitate formation of sexual partnerships and is a potential contributing factor in situations involving high-risk behaviours and transmissions of HIV and other STDs)
Patient delivered partner therapy (PDPT)[12, 18, 19]	For oral medication: clinic pathway in publicly funded sexual health services https://stipu.nsw.gov.au/wp-content/uploads/ADOPT_Brochure_ClinicPathways_PFSHS_D2.pdf • The index case is given medication, together with safety information and contraindications, to give to partners for presumptive treatment without assessment to reduce gonorrhea or chlamydia reinfections and to increase the proportion of partners treated. Although still controversial, this method may be beneficial in high-risk and hard-to-reach populations
Uncooperative index cases/contact[14]	IUSTI: Advise the local Public Health Unit's (PHUs) (Healthy WA) directly and confidentially of non-compliant individuals, particularly in the case of penicillin-resistant gonorrhoea, and serious infections such as syphilis and HIV. A strategy for a short-term management plan should be agreed between the primary HCP and the PHU.
Requirements[9, 18, 19, 25, 26]	• Notifiable disease • Confidentiality/privacy • Notification plan • Program monitoring, evaluation and quality improvement • Program collaboration: within health departments, among jurisdictions, with medical providers, with other agencies and organizations, communication with communities and community planning groups • Legislation: NHS Trusts and Primary Care Trusts (STD) Directions 2000: allow information to be shared for the purpose of control of infection and support one service informing another service whether a contact has attended that service.
Barriers related to partner notification[18, 19]	• Fear of loss of confidentiality • Index case unwilling to inform contacts • Patient not reconciled to diagnosis • Unaware of seriousness of consequences • Little concern for consequences to contacts • Socio-cultural or language differences between the HCP and the index case • Fear of reprisal from partner/s (physical or emotional abuse) • Shame of having an infection • Fear of re-victimization on the part of sex crime victims • Feared legal procedures

APPENDIX 12. SURVEY

Website over SOA's voor eerstelijnszorgverleners

Bedankt dat u even de tijd wil nemen om de website over SOA's te testen en de vragenlijst in te vullen.
De website, die gratis toegankelijk zal zijn, is bedoeld voor de eerstelijn, om te gebruiken bij consultaties over seksuele gezondheid.

De vragenlijst bestaat uit 2 delen: één over de vorm en één over de inhoud van de website.

Het invullen van de vragenlijst duurt ongeveer 15 minuten.

VOLGENDE

Verzend nooit wachtwoorden via Google Formulieren.

Outil en ligne pour les praticiens de première ligne au sujet des IST

Nous vous remercions d'avoir accepté de tester cet outil destiné à orienter les praticiens de 1ère ligne dans leurs consultations intégrant la santé sexuelle. Son accès sera gratuit.

Le questionnaire se compose de deux parties : une série de questions sur la forme et l'aspect général du site web et une deuxième partie sur la façon dont le contenu est présenté sur le site web.

Compléter cette enquête durera environ 15 minutes.

SUIVANT

N'envoyez jamais de mots de passe via Google Forms.

Deel 1: De vorm van de website

Vindt u de structuur van de website goed doordacht (bv opbouw, indeling, volgorde van de tabbladen…)?

- ◯ Ja
- ◯ Nee

Indien "nee", wat zou u voorstellen als verbetering?

Jouw antwoord

Is de tekst goed leesbaar (bv. kleur, contrast, grootte van de letters, gebruik van schuin-en vetgedrukte tekst,…)?

- ◯ Ja
- ◯ Nee

Indien "nee", wat zou u voorstellen als verbetering?

Jouw antwoord

Partie 1 : La forme du site web

L'organisation globale du site vous semble-t-elle bien pensée (p.ex. découpage, séquence des onglets…) ?

- ◯ Oui
- ◯ Non

Sinon, que suggérez-vous comme amélioration ?

Votre réponse

Les textes sont-ils bien lisibles (p.ex. contrastes de couleur, taille des caractères, utilisation des caractères gras et italiques..) ?

- ◯ Oui
- ◯ Non

Sinon, que suggérez-vous comme amélioration ?

Votre réponse

Is de bijkomende informatie (bv. pop-ups met definitie van de risicosituaties, advies bij het gebruik van doxycycline, enz.) ...

	Ja	Nee
voldoende vindbaar?	○	○
makkelijk leesbaar?	○	○

Welke algemene score geeft u aan de vorm van de website?

	1	2	3	4	
Helemaal niet goed	○	○	○	○	Erg goed

Welke elementen bepalen het meest deze algemene score?

Jouw antwoord

VORIGE VOLGENDE

Les informations complémentaires (p.ex. fenêtres pop-ups avec la définition des situations à risque, les conseils pour l'administration de la doxycycline, etc.) sont-elles ...

	Oui	Non
suffisamment identifiables?	○	○
facilement lisibles ?	○	○

Quelle cote globale donneriez-vous pour la forme ?

	1	2	3	4	
Très mauvais	○	○	○	○	Vraiment très bien

Quels sont les éléments principaux qui justifient cette cote ?

Votre réponse

RETOUR SUIVANT

Deel 2: De inhoud van de website

In de lijst hieronder, welke elementen waren moeilijk begrijpbaar?

- [ ] Onbekende termen
- [ ] Afkortingen
- [ ] Te volgen procedures (voor diagnose of behandeling)
- [ ] Definites
- [ ] Te nemen voorzorgsmaatregelen
- [ ] Doseringen
- [ ] Manier van toedienen van medicatie
- [ ] Anders: _____

Preciseer

Jouw antwoord

Startend van de risicogroepen op de tab "Risicobeoordeling", heeft u gemakkelijk de weg gevonden naar nuttige informatie voor deze patiëntengroep?

- ○ Ja
- ○ Nee

Partie 2 : Le contenu du site web

Dans la liste ci-dessous, quel(s) élément(s) vous paraissent difficilement compréhensible(s) ?

- [ ] Termes inconnus
- [ ] Abréviations
- [ ] Procédures à suivre (liées au diagnostic ou au traitement)
- [ ] Définitions
- [ ] Précautions à prendre
- [ ] Dosages
- [ ] Modes d'administration
- [ ] Autre : _____

Précisez

Votre réponse

En partant des groupes à risque dans l'onglet Dépistage, avez-vous trouvé le chemin vers l'information utile pour ce groupe de patients ?

- ○ Oui
- ○ Non

Indien "nee", waarom niet?

Jouw antwoord

Hebt u tussen twee of meer patiëntenprofielen getwijfeld bij het kiezen van de te volgen weg voor de risicobeoordeling en de uit te voeren testen?

- ◯ Ja
- ◯ Nee

Indien "ja", waarom?

Jouw antwoord

Hebt u al te maken gehad met een patiënt die niet binnen één van de 7 patiëntenprofielen viel? Kan u een concreet voorbeeld geven?

Jouw antwoord

Sinon, pourquoi pas ?

Votre réponse

Avez-vous hésité entre deux ou plusieurs catégories de patients pour définir le trajet à suivre pour le dépistage et les prélèvements ?

- ◯ Oui
- ◯ Non

Si oui, pourquoi ?

Votre réponse

Avez-vous rencontré une situation qui ne relevait d'aucune des 7 catégories de patients détaillées ? Précisez votre réponse par des exemples concrets.

Votre réponse

Wat vindt u van de informatie op deze website?

	1	2	3	4	
Helemaal niet nuttig	○	○	○	○	Erg nuttig

Wat vindt u van de informatie op deze website?

	1	2	3	4	
Erg onvoldoende	○	○	○	○	Heel volledig

Wat vindt u van de informatie op deze website?

	1	2	3	4	
Heel complex	○	○	○	○	Erg eenvoudig

Welke algemene score geeft u aan de inhoud van de website?

	1	2	3	4	
Helemaal niet goed	○	○	○	○	Erg goed

Welke elementen bepalen het meest deze algemene score?

Jouw antwoord

Heeft u nog iets anders toe te voegen?

Jouw antwoord

VORIGE VOLGENDE

Comment qualifieriez-vous l'information apportée par ce site ?

	1	2	3	4	
Tout à fait inutile	○	○	○	○	Très utile

Comment qualifieriez-vous l'information apportée par ce site ?

	1	2	3	4	
Très insuffisante	○	○	○	○	Très complète

Comment qualifieriez-vous l'information apportée par ce site ?

	1	2	3	4	
Très complexe	○	○	○	○	Très simple

Quelle cote globale donneriez-vous pour le contenu ?

	1	2	3	4	
Très mauvais	○	○	○	○	Vraiment très bien

Quels sont les éléments principaux qui justifient cette cote ?

Votre réponse

Souhaitez-vous partager d'autres commentaires ?

Votre réponse

RETOUR SUIVANT

Wie bent u?

Uw functie

- ○ Arts
- ○ Andere zorgverlener (bvb verpleging)
- ○ Patiëntenvertegenwoordiger (al dan niet van een patiëntenorganisatie)
- ○ Anders: _____

Ervaring met SOA consultaties

- ○ Praktijk in een SOA kliniek
- ○ Huisartspraktijk
- ○ Anders: _____

Leeftijdscategorie

Kiezen

Wilt u uw opmerkingen mondeling toelichten, of wenst u te spreken met iemand van het onderzoeksteam? Gelieve dan een mail te sturen naar els.vanbruystegem@kce.fgov.be

Jouw antwoord

VORIGE VERZENDEN

Qui êtes-vous ?

Votre fonction

- ○ Médecin
- ○ Autre praticien de soins de santé (ex. Infirmier/ère)
- ○ Représentant (d'une association) de patients
- ○ Autre : _____

Expérience des consultations liées aux MST

- ○ Pratique professionnelle dans une clinique spécialisée pour MST
- ○ Pratique professionnelle dans un cabinet de médecine générale
- ○ Autre : _____

Catégorie d'âge

Sélectionner

Si vous souhaitez partager vos commentaires oralement ou discuter avec un membre de l'équipe, n'hésitez pas à envoyer un mail à els.vanbruystegem@kce.fgov.be

Votre réponse

RETOUR ENVOYER

REFERENCES

1. Jespers V, Stordeur S, Desomer A, Carville S JC, Lewis S, Perry M, et al. Diagnosis and management of gonorrhoea and syphilis. Good Clinical Practice (GCP) Brussels: Belgian Health Care Knowledge Centre (KCE). 2019. KCE Reports 310. D/2019/10.273/21. . 2019.
2. Cornelissen T, Goemaes R, Van Royen P, Goossens M. Richtlijnen voor de diagnose, behandeling, opvolging en verwijzing van infecties met Chlamydia trachomatis (CT) in de eerste lijn. Antwerpen: Werkgroep ontwikkeling richtlijnen eerste lijn; 2019. Available from: http://www.ebp-guidelines.be/web/document?parameters=%7B"PublicationId"%3A"007D0A6C-A5C1-4826-B6E6-AB0C00AA7E07"%7D
3. Smets K. Seksueel overdraagbare infecties aanpak in de huisartsenpraktijk. Antwerp: Domus Medica vzw; 2017. Available from: https://domusmedica.be/richtlijnen/themadossiers/themadossier-seksueel-overdraagbare-infecties
4. Domus Medica. Advies hiv-screening door huisartsen. Domus Medica; 2017. Available from: https://domusmedica.be/sites/default/files/Advies_hiv-screening_door_huisartsen.pdf
5. GHAPRO. Leidraad voor medische consultaties bij sekswerkers. Antwerp: Ghapro vzw; 2014. Available from: http://www.ghapro.be/nl/documents/201403LEIDRAAD-1_000.pdf
6. BAPCOC. Belgische gids voor anti-infectieuze behandeling in de ambulante praktijk. Belgian Antibiotic Policy Coordination Committee (BAPCOC); 2012. Available from: http://overlegorganen.gezondheid.belgie.be/nl/documenten/belgische-gids-voor-anti-infectieuze-behandeling-de-ambulante-praktijk-2012; https://upb-avb.be/news/guide-des-antibiotiques-de-bapcoc-nouvelle-edition/
7. BAPCOC. Recommandations de traitements anti-infectieux en milieu hospitalier 2017 Commission belge de coordination de la politique antibiotique (BAPCOC); 2017. Available from: http://overlegorganen.gezondheid.belgie.be/sites/default/files/docu

ments/bapcoc_guidelineshospi_2017_sbimc-bvikm_nl_v1.pdf; https://organesdeconcertation.sante.belgique.be/fr/documents/recommandations-de-traitements-anti-infectieux-en-milieu-hospitalier-2017-integral

8. Nederlands Huisartsen Genootschap (NHG). Het soa-consult. 2013. Available from: https://www.nhg.org/standaarden/samenvatting/het-soa-consult

9. Nederlandse Vereniging voor Dermatologie en Venereologie (NVDV). Seksueel Overdraagbare Aandoeningen - Multidisciplinaire Richtlijn. 2018. Available from: https://www.nhg.org/sites/default/files/content/nhg_org/uploads/multidisciplinaire_richtlijn_soa_herziening_2018.pdf

10. Brook G, Bacon L, Evans C, McClean H, Roberts C, Tipple C, et al. 2013 UK national guideline for consultations requiring sexual history taking. International Journal of STD & AIDS. 2013;0(0):1-14.

11. BASHH Clinical Effectiveness Group. 2015 BASHH CEG guidance on tests for Sexually Transmitted Infections. British Association for Sexual Health and HIV (BASHH); 2015. Available from: https://www.bashhguidelines.org/media/1084/sti-testing-tables-2015-dec-update-4.pdf

12. National Health and Medical Research Council (NHMRC). Australian sexually transmitted infection and HIV testing guidelines 2014 - For asymptomatic men who have sex with men. Sexual Health. 2014;11(3):217-29.

13. Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine. Australasian Contact tracing Guidelines [Web page]. 2019. Available from: http://contacttracing.ashm.org.au/contact-tracing-guidance/introduction

14. Government of Western Australia - Department of Health. Silver book - A guide for managing sexually transmitted infections. 2015. Available from: https://ww2.health.wa.gov.au/Silver-book

15. New South Wales Government. STI/HIV Testing Tool Easy as 1-2-3 [Web page].New South Wales, Australia: NSWSTI Progams Unit;2017 [cited 29th of November]. Available from: https://stipu.nsw.gov.au/wp-content/uploads/STI-HIV-Testing-Tool-online.pdf

16. Radcliffe K, Flew S, Poder A, Cusini M. European guideline for the organisation of a consultation for sexually transmitted infections. International Union against Sexually Transmitted Infections (IUSTI); 2012. Available from: https://iusti.org/regions/Europe/pdf/2012/European_guideline_onSTIconsultation2012final.pdf

17. Centers for Disease Control and Prevention (CDC). Sexually Transmitted Diseases Treatment Guidelines, 2015. Morbidity and Mortality Weekly Report. Surveillance Summaries. 2015;64(3):140.

18. Public Health Agency of Canada. Canadian Guidelines on Sexually Transmitted Infections. Ottawa, Canada: Sexual Health and Sexually Transmitted Infections Section, Community Acquired Infections Division, Centre for Communicable Diseases and Infection Control; 2010. Available from: https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines.html

19. Public Health Agency of Canada. Canadian Guidelines on Sexually Transmitted Infections - 2016 Updates Summary. Ottawa, Canada: Public Health Agency of Canada; 2017. Available from: https://www.canada.ca/en/public-health/services/infectious-diseases/sexual-health-sexually-transmitted-infections/canadian-guidelines/update-summaries.html

20. Sensoa Huisartsenstuurgroep, Domus Medica, Seksuologen VVV. Steekkaart Praten over seksuele gezondheid [Web page]. Sensoa;2017 [cited January 2019]. Available from: https://www.sensoa.be/praten-over-seksuele-gezondheid-de-huisartsenpraktijk

21. Brook G, Brockmeyer N, van de Laar T, Schellberg S, Winter A. 2017 European Guideline for the screening, prevention and initial management of hepatitis B & C infections in sexual health settings 2017.

22. Gyselaers W, Jonckheer P, Ahmadzai N, Ansari M, Carville S, Dworzynski K, et al. What are the recommended clinical assessment and screening tests during pregnancy? Good Clinical Practice (GCP). Brussels: Belgian Health Care Knowledge Centre (KCE); 2015. KCE Reports 248 Available from: http://kce.fgov.be/sites/default/files/page_documents/KCE_248_assessments_and_test_during_pregnancy_Report_0.pdf

23. Molin SB, De Blasio BF, Olsen AO. Is the risk for sexually transmissible infections (STI) lower among women with exclusively female sexual partners compared with women with male partners? A retrospective study based on attendees at a Norwegian STI clinic from 2004 to 2014. Sex Health. 2016;13(3):257-64.

24. Beebeejaun K, Degala S, Balogun K, Simms I, Woodhall SC, Heinsbroek E, et al. Outbreak of hepatitis A associated with men who have sex with men (MSM), England, July 2016 to January 2017. Euro Surveill. 2017;22(5).

25. Dooley S. Recommendations for Partner Services Programs for HIV Infection, Syphilis, Gonorrhoea, and Chlamydial Infection. Morbidity and Mortality Weekly Report. 2008;57(9):1-83.

26. McClean H, Radcliffe K, Sullivan A, Ahmed-Jushuf I. 2012 BASHH statement on partner notification for sexually transmissible infections. International Journal of Stroke. 2013;24(4):253-61.

27. Götz H, Spijker R. Draaiboek Partnermanagement bij soa/hiv - Waarschuwen, testen en behandelen van seksuele partners. Nederland: 2015. Available from: https://lci.rivm.nl/sites/default/files/dsresource%3Fobjectid%3Dc65d5b96-abda-4157-8737-e52a11c68ff6.pdf

28. Tiplica GS, Radcliffe K, Evans K, Gomberg M, Nandwani R, Rafila A, et al. 2015 European guidelines for the management of partners of persons with sexually transmitted infections. Journal of the European Academy of Dermatology and Venereology. 2015;29:1251-7.

29. Mathews C, Coetzee N, Zwarenstein M, Lombard C, Guttmacher S, Oxman A, et al. Strategies for partner notification for sexually transmitted diseases. Cochrane Database Syst Rev. 2001(4):CD002843.

30. Ferreira A, Young T, Mathews C, Zunza M, Low N. Strategies for partner notification for sexually transmitted infections, including HIV. Cochrane Database Syst Rev. 2013(10):CD002843.