Hepatitis C Screening Guideline Development Group
Background to recommendation 14: Men who have sex with men

The purpose of this document is to provide the background information to the formulation of recommendations by the Guideline Development Group (GDG).

Not all evidence in this document is presented in the National Clinical Guideline.

The National Clinical Guideline is available from: http://health.gov.ie/national-patient-safetyoffice/ncec/national-clinical-guidelines/

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Contents

History of development of the recommendation

Date	Process	Outcome
02/06/2015	Recommendations from quality appraised national and international guidelines reviewed	Agreed to augment evidence from existing guidelines with literature
02/02/2016	GDG subgroup meeting to undertake considered judgement process	Formulation of recommendation
23/02/2017	Review of subgroup recommendation by GDG	Recommendation accepted
25/04/2017	Consultation feedback reviewed by GDG	No changes to recommendation
June – July 2017	Editing	Recommendation reworded in final editing process

Considered judgement process

The considered judgment form completed by the GDG subgroup in formulating the recommendations is presented below. Please note the final wording of the recommendation may have changed after review of the GDG, after the consultation process, or during the editing process.

Date:2/2/2017
Attendees: LT, PF, ER, SK, OE, CB

Table 1: Considered judgement form

1. What is the question being addressed? Present PICO if relevant
Q2. Who should be offered screening for Hepatitis C? b. Should the following specified groups be offered screening? vi. **Men who have sex with men (MSM)**
2. What evidence is being considered to address this question and why? (This section will explain the approach taken to address this question and what GDG members are being asked to consider)
Guidelines and primary literature.
3. What is the body of evidence? Source of evidence: (tick all that apply) Guidelines √ Primary literature √ Other □ ; specify: _____
Guidelines **WHO, 2016:** No specific recommendation is made on MSM. The following background evidence is given: There is low or no risk of sexual transmission of HCV among HIV-uninfected heterosexual couples and HIV-uninfected men who have sex with men (MSM). The risk of sexual transmission is strongly linked to pre-existing HIV infection. Persons with HIV infection, in particular MSM, are at increased risk of HCV infection through unprotected sex. Sexual transmission of HCV occurs infrequently in heterosexual couples. It is more common in HIV-positive persons, particularly in MSM. In several recent outbreaks of HCV infection among MSM in Europe, Australia and the United States, transmission has been linked to sexual exposure as well as potentially to under reported use of non-injecting recreational drugs HIV-infected heterosexual partners of HCV-infected people are also more likely to acquire HCV; this may be due to sexual transmission or other exposure to blood or due to unreported injection or non-injection drug use, such as sharing of straws for inhaling cocaine *(World Health Organization, Guidelines for the screening, care and treatment of persons with hepatitis C infection (1)).* HIQA Quality Score of 148 **AASLD, 2013** Annual HCV testing is recommended for persons who inject drugs and for HIV-seropositive men who have unprotected sex with men. Periodic testing should be offered to other persons with on-going risk factors for exposure to HCV. (American Association for the Study of Liver Diseases,

Recommendations for Testing, Managing, and Treating Hepatitis C (2)). HIQA Quality Score of 134.5

IUSTI/WHO Euro, 2010 Testing for HCV should be considered for MSM, especially if they are HIV positive. (The International Union Against Sexually Transmitted Infections/WHO Europe, European Guideline for the Management of Hepatitis B and C Virus Infections (3)). HIQA Quality Score of 66.3

BASHH CEG, 2014 HIV positive MSM and their sex partners should be offered HCV screening. (British Association for Sexual Health and HIV Clinical Effectiveness Group, BASHH CEG Guidance on Tests for Sexually Transmitted Infections)

WHO, 2017 In all epidemic settings, it is recommended …(that screening) …be offered with linkage to prevention, care and treatment service to the following individuals:

Adults and adolescents from populations most affected by HCV infection (ie. who are either part of a population with high HCV seroprevalence or who have a history of HCV risk exposure and/or behaviour).

strong recommendation, low quality of evidence

In footnote it is written that this includes MSM among other risk groups.

Risk of sexual transmission of HCV is low among HIV negative MSM. HIV positive MSM are at significantly increased risk of sexual transmission of HCV, particularly those who engage in high-risk sex behaviours such as unprotected anal sex.

(WHO 2017 Guidelines on hepatitis B and C testing)

BASHH 2015

- In the last few years, 'chem-sex parties', largely attended by MSM and involving multiple sexual partners and the use of 'recreational drugs' such as gamma-hydroxybutyric acid/gamma-butyrolactone (GHB/GBL), mephedrone and crystal methamphetamine, have been described. The drugs are frequently injected ('slamming'), leading to high risk of BBVs, including HCV and HIV. They also lead to a loss of attention to safer sex. MSM with such risks should be screened for HCV and other BBVs and the risks/prevention discussed (2D[1]).
- Currently there is no evidence that HIV-negative MSM without other risk factors should be routinely screened (1B[2])
- Offer additional HCV testing in HIV+ MSM if other STIs have been diagnosed including syphilis and LGV or in situations of traumatic anal sex, fisting and sharing of sex toys.

(British Association for Sexual Health and HIV; United Kingdom National Guideline on the Management of the viral hepatitides A, B and C 2015 (4))

NICE 2013 Lists HIV-positive men who have sex with men as a group at increased risk of hepatitis C. (National Institute for Health and Care Excellence, Hepatitis B and C: Ways to Promote and Offer Testing to People at Increased Risk of Infection (5)) *HIQA Quality Score 148*

Primary literature

[1] A Grade 2 recommendation is a weaker or conditional recommendation, where the risks and benefits
are more closely balanced or are more uncertain. Grade D evidence is based only on case studies, expert judgement or observational studies with inconsistent effects and a potential for substantial bias, such that there can be little confidence in the effect estimate.

[2] Grade 1 recommendation is a strong recommmendation to do (or not do) something. Grade B evidence means moderate-quality evidence from randomised trials that suffers from serious flaws in conduct, inconsistency, indirectness, imprecise estimates, reporting bias, or some combination of these limitations, or from other study designs with specific strengths such as observational studies with consistent effects and exclusion of the majority of the potential sources of bias.

Jordan et al (2017) (6) undertook a systematic review and meta-analysis to estimate the prevalence of anti-HCV and current infection amongst HIV positive MSM. Studies published between 1990 and February 2015 were eligible for inclusion. The pooled prevalence of anti-HCV was 8.2% (95% CI 6.6-9.7). Among non-IDU HIV positive MSM the prevalence was 6.7% (95% CI 5.3-8.1) and among IDU HIV positive MSM it was 40.0% (95% CI 28.0-51.0). A statistically significant increase in anti-HCV prevalence among all HIV positive MSM over time was found, increasing by 0.334% a year. Amongst non-IDU HIV positive MSM the prevalence increased by 0.367% a year ($p<0.000$). The prevalence decreased amongst IDU MSM by 1.44% a year ($p<0.000$).

The prevalence of current infection among all HIV positive MSM was 5.4% to 7.3%; among non-IDU HIV positive MSM it was 4.9% to 5.9%; and amongst IDU HIV positive MSM it was between 26% and 35.4%.

Ghisla et al (2016) (7)undertook a systematic review and meta-analysis to determine the pooled incidence of HCV in HIV positive and HIV negative MSM. Studies published between 2000 and Oct 2016 were eligible for inclusion. Twenty eight studies were included, 23 addressed HCV incidence in HIV positive MSM, four addressed HIV positive and HIV negative MSM, and one addressed HIV negative MSM only.

The pooled incidence amongst MSM regardless of HIV status was 6.3/ 1000 PY (95% CI 5.0-7.5). Amongst HIV negative MSM the pooled incidence was 0.4/1000PY (95% CI 0.0-0.9). The incidence in individual studies ranged from 0/1000 PY (95% CI 0-0.5) to 1.5/1000 PY (95% CI 0.5-3.5). The pooled incidence amongst HIV positive MSM was 7.8/1000 PY (95% CI 6.0-0.7); with the incidence in individual studies ranging from 0 (95% CI 0-15.4) to 23.5/1000 PY (95% CI 16.6-33.3). Univariable meta-regression analysis suggested that HIV infection explained 21.8% of the between study variation.

In HIV positive MSM a trend towards increased incidence over time was observed until 2010. The pooled incidence of studies pre 2000 was 2.6/1000 PY (95% CI 0-5.8); between 2000 and 2005 it was 6.8/1000 PY (95% C3.0-10.6); between 2006 and 2010 it was 10.1/1000 PY (95% CI5.8-14.3); and after 2010 it was 8.1/1000 PY (95% CI 2.7-13.5).

Thirteen included studies examined risk factors for HCV infection. Due to the heterogeneity in risk factors reported and the effect measure used, only a qualitative analysis was undertaken. Eight studies reported syphilis as a risk factor; unprotected sex was a risk factor in four studies. Fisting and use of sex toys were found to be significant in one study.

Chan et al (2016) reviewed the epidemiology of sexually transmitted HIV amongst MSM and factors that may facilitate sexual transmission amongst MSM (8). Studies published between January 1990 to March 2016 were included. They reported on a number of case control and cohort studies which have shown increases in the incidence or prevalence of HCV amongst HIV positive MSM over time and a low incidence of HCV amongst HIV negative MSM. They also report on studies which have shown an association between ulcerative STIs, unprotected anal sex, serosorting, and chemsex.

In a review of emerging viral STIs amongst HIV positive MSM **Van de Laar and Richel** (2016) (9) the increase in HCV amongst HIV positive MSM during the 2000s is summarised. They report that studies have shown sexual transmission of HCV amongst HIV positive MSM to be independently associated with UAI, the number of sexual partners, recent ulcerative STIs, in particular syphilis and LGV, group sex, fisting, rectal bleeding, use of sex toys/ and or anal enema, and recreational drug use before or during sex. Mucosal damage is proposed as the facilitator of transmission.

Suggested reasons for the increases in HIV positive MSM proposed by van de Laar and Richel are that HIV leads to deterioration of the gastrointestinal mucosa making a person more susceptible to infection. Also, HIV positive men may have higher HCV viral loads and therefore have high HCV viral loads in their semen making them more infectious. The above two factors, coupled with serosorting, may explain the increases in HIV positive men and the limited transmission to and amongst HIV negative MSM. Another hypothesis proposed by van de Laar and Richel is that the association is not due to any biological interaction between the two viruses resulting in increased infectivity or susceptibility, but that co-infections are occurring

amongst a particular high risk behaviour cohort of MSM, and that HIV is preceding HCV infection due to the fact that HIV is more easily transmissible through sexual contact.

Hagan et al (2015) reported on a systematic review and meta-analysis of the incidence of sexually transmitted HCV in HIV positive MSM (10). They also examined the influence of calendar time and risk behaviours on the strength of the association. Studies which did not explicitly state that injecting drug users were excluded or where MSM with a history of IDU were not presented separately were excluded. Seventeen studies were included which included more than 13000 HIV positive MSM followed for over 91000 person years (PY). Studies published between 1990 and February 2015 were eligible for inclusion. This included cohort periods between 1984 (stored blood was retrospectively tested) and 2012. Twenty one stuies reporting on serovconversion and four reporting on reinfection were included in the analysis.

A pooled seroconversion rate of 0.53/100 PY was estimated. The incidence in individual studies ranged from 0 to 1.4/100PY. The rate increased from 0.42/100 PY (95% CI 0.23-0.77) in 1991 to 1.09/100 PY (95% CI 0.73-1.61) in 2010 and 1.34/100 PY (95% CI 0.003-0.197) in 2012.

A pooled incidence of reinfection of 11.41/100 PY (95% CI 7.36-17.68) was reported.

They were unable to pool effect size estimates on risk factors due to heterogeneity between the studies. A qualitative synthesis was undertaken. Attributable risk (AR) and population attributable risk (PAR) estimates were calculated for studies which provided adjusted estimate measures.

A study from new York which reported an adjusted odds ratio (AOR) for HCV infection with receptive UAI with ejaculation of 23.0 (95% CI 2.2-243.8). The AR in cases was 95.7% and the PAR was 22%. In a study from Germany rectal trauma with bleeding during sex had an AOR for HCV infections of 6.2 (95% CI 12-32.8), an AR of 71% and a PAR of 3.8% (due to low prevalence of this exposure). Frequent receptive fisting without gloves or unused gloves had an AOR of 6 (95% CI 1.5-21.7), AR of 83%, an a PAR of 5%.

Sex while on methamphetamine had an AOR of 28.6 in one study, and a PAR of 4%. A study in Germany found the use of inhaled drugs to be associated with HCV infection, with a PAR% of 36%.

Yaphe et al (2012) (11) undertook a systematic review and meta-analysis to determine the incidence of HCV seroconversion, amongst HIV positive and HIV negative MSM. Studies between January 2000 and May 2012 were eligible for inclusion. Twenty five studies were included in the analysis.

Amongst HIV negative MSM the incidence densities of HCV seroconversions ranged from 0 to 8.1/1000 PY in included studies. The pooled incidence was 1.48/1000 PY (95% CI 0.75 to 2.21). In the HIV positive MSM subgroup, incidence densities ranged from 0 to 41.7/1000 PY in included studies. The pooled incidence amongst HIV positive MSM was 6.08/1000 PY (95% CI 5.18 to 6.99). Four studies directly compared incidence rates in HIV negative MSM and HIV positive MSM and found HCV incidence rates of 0 versus 1.8, 1.7 versus 11.8, and 1.1 versus 0 per 1000 person-years, respectively. One study reported zero seroconversions in both the HIV positive and HIV negative subgroups. The estimated pooled risk difference was 3.45/1000 PY (95% CI 1.63 to 5.27).

The authors concluded that routine screening of HIV-positive MSM was warranted but that there was insufficient evidence to recommend routine screening of HIV-negative MSM, except on a case-by-case basis, such as high-risk sexual behaviour.

Tohme et al (2010) (12)undertook a systemic review of sexual transmission of hepatitis C which included MSM. Studies up to 2009 were included. They concluded that there was an increased risk for HIV positive MSM who hare having sex with one another compared with HIV uninfected men (adjusted OR 4.1-5.7) and that the risk in increased in association with practices that lead to mucosal trauma (multiple sexual partners, fisting, used of sex toys) and the presence of genital ulcerative disease.

4. What is the quality of the evidence? To be considered if primary literature was reviewed.

4.1. How reliable are the studies in the body of evidence?

If there is insufficient evidence to answer the key question go to section 11. Comment here on any issues concerning the quantity of evidence available on this topic and its methodological quality.

A number of good quality systematic review and meta-analyses have quantified to risk amongst HIV positive MSM.

4.2. Are the studies consistent in their conclusions – comment on the degree of consistency within the available evidence. Highlight specific outcomes if appropriate. If there are conflicting results highlight how the group formed a judgement as to the overall direction of the evidence

A number of studies have shown an increasing incidence over time amongst HIV positive MSM. There is consistency between studies showing the risk in HIV negative MSM to be low

4.3. Generalisability – are the patients in the studies similar to our target population for this guideline? is it reasonable to generalise

Yes. Ireland has seen similar trends in STIs amongst MSM in other countries, suggesting similar sexual practices amongst MSM in Ireland and therefore a likely similar risk of HCV.

4.4. Applicability - Is the evidence applicable to Ireland? Is the intervention/ action implementable in Ireland?

n/a

4.5. Are there concerns about publication bias? Comment here on concerns about all studies coming from the same research group, funded by industry etc

No, there have been meta-analyses from different groups including studies from a number of regions showing similar findings.

5. Additional information for consideration

5.1. Additional literature if applicable e.g. Irish literature

<u>Acute HCV amongst MSM in Ireland</u>

A recent cluster of acute HCV amongst MSM in Ireland has been reported (13). Nineteen cases amongst MSM are reported to have been diagnosed between August 2015 and October 2016. Of these, 63% had a previous negative test within a year of diagnosis. Seventy eight percent of cases were HIV positive. The remainder were HIV negative. Seventeen had genotype 1 infection, one had genotype 3 and in one the virus could not be typed.

Fifteen of the 17 genotype 1 cases underwent N63 sequencing with five having N174G mutation, and 8 Q80K, indicating the presence of two clusters. 74% had a positive STI screen in the previous year, and a number had STIs diagnosed after HCV diagnosis indicating that HCV infections may be occurring in a particular high risk behaviour cohort.

<u>Screening of HIV positive MSM in Ireland</u>

In an audit of HCV screening amongst HIV positive MSM attending a clinic in Dublin of the 198 HIV positive patients who were included, 96% had evidence of an anti-HCV or HCV RNA test being performed on the electronic patient record (13). In 68% there was evidence of an anti-HCV or HCV RNA test being performed within the last year. The authors noted that within the EPR there was poor documentation of sexual practices, chemsex and drug use.

Risk behaviours amongst MSM in Ireland

The Men who have Sex with Men Internet Survey in Ireland (MISI) conducted in 2015 reported that 36% of participants reported drug use in the previous 12 months, 7% had used drugs associated with chemsex and 1.6% reported ever IDU (14). Amongst HIV positive MSM, 53% had used drugs in last 12 months compared to 36% of HIV negative MSM (this includes only those who have tested negative and not those who have never tested). IDU was more common amongst HIV positive MSM with 15% reporting ever injecting compared to 1% of HIV negative MSM. 25% of HIV positive MSM had used drugs associated with chemsex in the previous 12 months compared to 7.9% of HIV negative MSM.

61% of men had sex with a non-steady partner in the previous year, with 42% of these reporting unprotected anal intercourse.

5.2. Relevant national policy

There is not a national guideline on STI testing in Ireland at present.

5.3. Epidemiology in Ireland if available and applicable

Hepatitis C amongst MSM (data extracted from CIDR in early December 2016)

Acute/ chronic status and mode of transmission data is often not reported in HCV notifications. **Table 2** shows the trend in male cases reported to be acute and the most likely risk factor. To date in 2016 six of fifteen acute male cases report MSM sexual exposure as the risk factor. **Table 3** shows the trend for all male cases regardless of chronicity. Nineteen cases report MSM sexual exposure as the risk factor. This number was six, three and 12 in the previous years.

Table 2: Acute HCV notifications amongst males and most likely risk factor, 2012 to 2016

		Risk factors					
Year	number acute male cases	Injecting drug user	Possible sexual exposure - MSM	Possible sexual exposure - heterosexual	Possible sexual exposure - UK	Other or no known risk factor	Unknown
2012	9	3				3	3
2013	14	8	1	3		1	1
2014	21	17			2	1	1
2015	14	11				1	2
2016	15	4	6		1	2	2

Table 3: All male notifications of HCV and most likely risk factor, 2012 to 2016

		Risk factors

Year	number male cases	Injecting drug user	Possible sexual exposure - MSM	Possible sexual exposure - heterosexual	Possible sexual exposure - UK	Other or no known risk factor	Unknown
2012	584	306	5	4	17	72	180
2013	522	258	12	7	6	68	171
2014	489	221	3	2	8	60	195
2015	457	151	6		3	75	222
2016	424	131	19		5	49	220

Coinfection with hepatitis C amongst HIV notifications

Provisional data for 2016 shows that there were 24 HIV diagnoses in males in which it was reported that they are co-infected with HCV. This represents 6% of HIV diagnoses amongst males and is comparable to 27 (7%) in 2015. There were ten HIV notifications reported to be co-infected with HCV amongst MSM. This represents 4% of HIV diagnoses amongst MSM compared to three (1%) in 2015. Of these one is reported to be acute HCV infection, one chronic, and the remainder are unknown.

Table 4: Number and percentage of HIV notifications reported to be co-infected with HCV

Mode of transmission	Year of HIV notification									
	2012		2013		2014		2015		2016	
	N	%	n	%	n	%	n	%	n	%
Males	20	8%	19	7%	15	5%	27	7%	24	6%
MSM	7	4%	5	3%	2	1%	3	1%	10	4%

6. Potential impact of recommendation

6.1. Benefit versus harm

What factors influence the balance between benefit versus harm? Take into account the likelihood of doing harm or good. Do the desirable effects outweigh the undesirable effects?

Benefits:

- Linkage to care and treatment will result in improved quality of life for detected cases.
- The offer of screening also provides an opportunity to raise awareness and educate on hepatitis C.
- Promotion and further normalisation of testing may improve uptake and reduce stigma around hepatitis C.
- Detection and treatment of undiagnosed cases will reduce the risk of transmission to others.

Harms:

- False positives. The rate of false positive screening results depends on the population being screened. In high risk populations false positive rates are acceptable. However, in low risk populations the positive predictive value of the screening test decreases and may not be acceptable. False-positive test results incur costs and can also cause psychological harm. Confirmatory testing reduces the false-positive rate but increases the cost.
- Regular screening may detect acute cases which would otherwise spontaneously resolve
- Detection of cases who may not yet be eligible for treatment may lead to frustration and anxiety.
- Detected cases may suffer from stigmatisation.
- Opportunity cost. Diversion of resource from other risk groups where greater support is needed

for testing and linkage to care. Increase operating cost of STI clinics which are already stretched.

6.2. What are the likely resource implications and how large are the resource requirements? Consider cost effectiveness, financial, human and other resource implications

Screening of MSM is current practice in sexual health services. Annual screening HIV positive MSM is current practice as part of HIV care. Therefore, resource implications are not likely to be large.

6.3. Acceptability – Is the intervention/ option acceptable to key stakeholders?

Some men who do not engage in risk behaviours for HCV infection may find the offer offensive.

6.4. Feasibility - Is the intervention/action implementable in the Irish context?

It is feasible for HIV positive MSM who are engaged in HIV care as screening is recommended as part of HIV care. It is also feasible for HIV positive and HIV negative MSM who attend for STI screening.
However, a proportion of MSM do not attend for regular STI testing. MISI reported that 39% of men had an STI test in the last year, 23% last tested for an STI more than 12 months ago and 38% never tested for an STI (14). Among men who had an STI test within the last 12 months, 68% reported attending an STI clinic for their last test, while 29% attended the GP and 3% used other services.
For those attending their GP for STI screening it is likely to be feasible.

6.5. What would be the impact on health equity?

The principle of proportionate universalism[3] should underpin the recommendations and the implementation of the guideline in order to have a positive impact on health equity.

7. What is the value judgement? How certain is the relative importance of the desirable and undesirable outcomes? Are the desirable effects larger relative to undesirable

HCV amonsgt MSM in Ireland is an emerging issue.
While international literature to date has found that HCV amongst MSM is mainly confined to HIV positive MSM, the epidemiology of HCV amongst MSM may be changing. In the recent cluster amongst MSM in Ireland, 22% of cases were HIV negative. The epidemiology of HCV amongst HIV negative MSM may change with greater use of TasP, PEP and the advent of PrEP, changes in sexual networks, and changes in sexual practices.
There is evidence of high risk sexual behaviour amongst some MSM in Ireland as reported by MISI and evident in the increasing rates of STIs. Detection of acute hepatitis C infection in MSM may reduce transmission within MSM sexual networks and propagation of the epidemic amongst MSM.

[3] Proportionate universalism is the resourcing and delivering of universal services at a scale and intensity proportionate to the degree of need.
http://www.healthscotland.com/documents/24296.aspx

8. Final Recommendations

√ Strong recommendation
□ Conditional/ weak recommendation

Text:

HIV positive MSM should be screened at least annually for hepatitis C. More frequent testing may be required if clinically indicated eg.an unexplained rise in ALT, a diagnosis of a new STI, or if a risk exposure has occurred such a contact with a known case of hepatitis C, or other risk behaviours including chemsex,

HIV negative MSM who attend for sexual health screening should be tested annually for hepatitis C. More frequent testing may be required if clinically indicated eg.an unexplained rise in ALT, a diagnosis of a new STI, or if a risk exposure has occurred such a contact with a known case of hepatitis C, or other risk behaviours including chemsex

9. Justification

Up until recently the global epidemiology of HCV amongst MSM has indicated that HCV infections has been mainly confined to HIV positive MSM. In Ireland, a recent cluster of acute hepatitis C amongst MSM has been identified. At least twenty percent of cases were known to be HIV negative. The epidemiology of HCV amongst HIV negative MSM may change with greater use of TasP, PEP and the advent of PrEP, changes in sexual networks, and changes in sexual practices. There is evidence of high risk sexual and drug taking behaviour amongst some MSM in Ireland as reported by MISI and evident in the increasing rates of STIs. These behaviours may lead to increased HCV transmission amongst MSM.
Detection of acute infection in MSM may reduce transmission within MSM sexual networks and propagation of the epidemic amongst MSM.

10. Implementation considerations

Annual HCV testing is recommended as part of HIV care and HIV positive MSM in care.

Current practice for HIV negative MSM who attend for regular sexual health screening is less clear and may vary between services. Therefore, there may be additional service demands if testing is introduced in these services.

HIV negative MSM who currently do not attend for regular sexual health screening will not be accessed for screening. There are a number of initiatives underway to improve awareness of the need for regular sexual health screening amongst MSM and to improve access to services.

11. Recommendations for research

List any aspects of the question that have not been answered and should therefore be highlighted as an area in need of further research.

Review by GDG

Date: 23/02/2017

Recommendation accepted.

Consultation feedback and review by GDG

Please see *Report of the consultation process* for feedback received.

No material change to recommendation.

Final recommendation

Recommendation 14

14.1. HIV positive MSM should be screened at least annually for HCV. More frequent testing may be required if clinically indicated, e.g. an unexplained rise in ALT, a diagnosis of a new sexually transmitted infection (STI), or if a risk exposure has occurred such as contact with a known case of HCV, or other risk behaviours including chemsex.

14.2. HIV negative MSM should be offered testing annually for HCV as part of an overall STI screen. More frequent testing may be required if clinically indicated, e.g. an unexplained rise in ALT, a diagnosis of a new STI, or if a risk exposure has occurred such as contact with a known case of HCV, or other risk behaviours including chemsex.

Quality/level of evidence: moderate for HIV positive MSM; low for HIV negative MSM
Strength of recommendation: strong

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Appendices

Evidence search and results

International and national guidelines

HCV guidelines identified, reviewed, and quality appraised as described in the National Clinical Guideline.

Grey literature

The following grey literature identified by expert members of the GDG was included for review:

- MISI 2015 Findings from the men who have sex with men internet survey
- Hepatitis C in MSMs; a review of testing practices in the GUIDE clinic and a description of recent cases

Primary literature

The GDG determined that to formulate a recommendation further information was required on HCV amongst MSM.

PICO

Population: MSM
Intervention: n/a
Comparison: n/a
Outcome: incidence/ prevalence of HCV; risk factors for HCV