

## RISK ASSESSMENT

# Upsurge in ceftriaxone-resistant *Neisseria gonorrhoeae* with evidence of domestic transmission in the EU/EEA and the UK

16 July 2026

## Summary

### Introduction

Since 2022, an increasing number of European countries have reported cases of gonorrhoea caused by ceftriaxone-resistant *Neisseria gonorrhoeae*, including multidrug-resistant (MDR) and extensively drug-resistant (XDR) strains. While early detections were mainly sporadic and often travel-associated, the situation has evolved in 2025–2026, with rising case numbers in several countries and growing evidence of domestic transmission in the EU/EEA and the United Kingdom (UK). France, Germany, Sweden and the UK have reported notable increases, while several other countries continue to detect sporadic cases. Importation from areas with higher circulation of resistant strains, particularly in South-East Asia, remains an important route of introduction, but clusters and locally acquired infections indicate that onward transmission is now occurring within Europe.

### Risk assessment

For the general sexually active population in the EU/EEA who do not engage in behaviours associated with an increased probability of acquiring sexually transmitted infections (STIs), the overall risk is assessed as low. For people with multiple or frequently changing sexual partners, and those having condomless sex with casual or new partners, the risk is assessed as low-to-moderate. For people living or residing in the EU/EEA who travel to areas with increased circulation of ceftriaxone-resistant MDR/XDR *N. gonorrhoeae* and engage in behaviours associated with an increased probability of acquiring STIs, the overall risk is assessed as moderate. If sustained transmission of ceftriaxone-resistant MDR/XDR *N. gonorrhoeae* becomes established in the EU/EEA, the effectiveness of currently recommended first-line treatment regimens (ceftriaxone monotherapy or in combination with azithromycin) could be substantially reduced, potentially limiting treatment options and complicating case management. Although reported cases remain limited and to date all reported infections have been successfully treated, the increasing detections, evidence of domestic transmission, and narrowing treatment options indicate a risk of further escalation if control measures are not implemented and maintained.

### Recommendations

- EU/EEA countries should strengthen gonococcal antimicrobial resistance surveillance, including culture-based testing, antimicrobial susceptibility testing and genomic surveillance, to support timely detection and reporting of ceftriaxone-resistant, MDR and XDR strains.

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- Healthcare providers should ensure appropriate testing of exposed anatomical sites, prescribe treatment in line with current European and national guidelines, perform test-of-cure for ceftriaxone-resistant infections where feasible, and promptly investigate suspected treatment failures.
- Public health authorities and clinical services should reinforce partner notification and case management to prevent reinfection and onward transmission, particularly in sexual networks with multiple or frequently changing partners.
- Risk communication should provide clear, non-stigmatising messages on safer sex, regular STI testing, timely treatment and the importance of seeking testing after symptoms, potential exposure or sexual contact during travel to areas with higher circulation of resistant strains.

## Disease background

Gonorrhoea is one of the most common bacterial sexually transmitted infections (STIs), caused by *Neisseria gonorrhoeae* [1]. If left untreated, infection can lead to severe complications, including pelvic inflammatory disease, infertility and ectopic pregnancy [1,2]. *N. gonorrhoeae* has repeatedly demonstrated an ability to develop resistance to first-line antibiotics, including ceftriaxone, cefixime and azithromycin, undermining treatment effectiveness and contributing to ongoing transmission [3,4].

Gonorrhoea remains a major public health concern, both globally and within the European Union/European Economic Area (EU/EEA). Worldwide, an estimated 82 million new cases occur annually among people aged 15 to 49 years [2]. In the EU/EEA, 106 331 confirmed cases were reported in 2024 across 28 EU/EEA countries (26.9 cases per 100 000 population), the highest level recorded since the start of EU surveillance in 2009 [5,6]. Since 2015, notification rates have increased by 303%. Part of the observed increase might reflect improved case detection through expanded screening and more complete reporting, rather than increased transmission alone. Between 2023 and 2024, the overall rate increased by 4.3%, mainly driven by a 7.9% increase among men, while the rate among women decreased by 8.6%. In 2024, transmission among men who have sex with men accounted for 62% of reported cases, exceeding transmission among heterosexual men and women together (37%). Among men, the highest age-specific rate was among those aged 25–34 years, while among women rates were highest in those aged 20–24 years. After marked increases in 2022–2023, trends among young people aged 15–24 years appear to have stabilised or declined in 2024.

In the EU/EEA, surveillance through the European Gonococcal Antimicrobial Surveillance Programme (Euro-GASP) indicates growing antimicrobial resistance (AMR) to azithromycin and the continued detection of isolates with decreased susceptibility to ceftriaxone. Euro-GASP demonstrates considerable geographic variation in gonococcal AMR across the EU/EEA. In 2024, azithromycin Minimum Inhibitory Concentrations (MICs) above the Epidemiological Cut-Off Value (ECOFF) >1 mg/L were detected in 23 of 24 participating countries (19.1% of isolates overall), while ciprofloxacin resistance remained high at 63.7%, and cefixime resistance was reported by 8 of 24 countries, although the overall prevalence remained low (0.3%).

Resistance patterns also differed between population groups, with azithromycin resistance being higher among men who have sex with men (MSM) (23.5%) than among heterosexual men (19.8%) or women (19.5%), and tetracycline resistance being particularly common among men who have sex with men (MSM) (64.1%). While most infections were acquired domestically, 8.3% of cases with available information were probably acquired outside the reporting country. A genomic surveillance study published in 2022, based on isolates collected and cultured through Euro-GASP in 2018, has documented the introduction and international spread of multidrug-resistant/ extensively drug-resistant (MDR/XDR) gonococcal strains, including travel-associated cases [7].

These findings should be interpreted taking into account that only 24 of 30 EU/EEA countries participated in Euro-GASP in 2024, and that treatment practices remain heterogeneous, with ceftriaxone monotherapy reported for 68.4% of cases with available treatment data [8]. Recent global estimates indicate increasing resistance to extended-spectrum cephalosporins, rising between 2022 and 2024 from 0.8% to 5% for ceftriaxone and from 1.7% to 11% for cefixime [9]. This is alarming given ceftriaxone's central role in treatment guidelines and the limited availability of effective alternative therapies [10]. These developments occur alongside substantial heterogeneity in surveillance systems across Europe and a weakening capacity to detect and monitor antimicrobial-resistant *N. gonorrhoeae* between 2019 and 2023, despite some improvements in guideline alignment [11]. Collectively, these challenges threaten the effectiveness of recommended first-line treatment regimens and underscore the need for strengthened and sustained surveillance, targeted prevention strategies and timely detection of resistant strains [5,8].

Data from the World Health Organization (WHO) Global Gonococcal Antimicrobial Surveillance Programme (GASP) for 2019–2022 indicate that most participating countries report resistance to ciprofloxacin and azithromycin (98.7% and 87.9% of countries, respectively), and decreased susceptibility or resistance to ceftriaxone in 38.7% of countries [9].

The global distribution of gonococcal AMR is heterogeneous, with significant regional variation in AMR patterns and surveillance capacity. The WHO Western Pacific and South-East Asia Regions represent the global epicentre of

gonococcal AMR, with the highest burden and greatest diversity of AMR strains. In these regions, resistance to previously used antimicrobials is widespread, with ciprofloxacin resistance frequently exceeding 90%, alongside high levels of resistance to penicillin and tetracycline. Increasing resistance to azithromycin and emerging decreased susceptibility to ceftriaxone and cefixime have also been documented [8,12]. Data from the WHO Enhanced Gonococcal Antimicrobial Surveillance Programme (EGASP) highlight particularly high resistance levels in countries such as Cambodia and Viet Nam, while Thailand, Indonesia and the Philippines contribute substantially to the regional burden [12]. Importantly, these regions are recognised as major sources of internationally disseminated resistant strains, including those associated with treatment failures in Europe and North America.

In the WHO African Region, gonococcal AMR remains incompletely characterised because of limited laboratory capacity and surveillance coverage. Available WHO-GASP and EGASP data indicate high levels of resistance to ciprofloxacin, penicillin and tetracycline, alongside emerging resistance to azithromycin and early reports of decreased susceptibility to extended-spectrum cephalosporins. However, the true burden of resistant gonococcal infections is likely underestimated due to gaps in culture-based surveillance and antimicrobial susceptibility testing [9,13,14].

In Australia, the Australian Gonococcal Surveillance Programme (AGSP) data show a rise in decreased susceptibility to ceftriaxone (from 0.22% in 2023 to 0.51% in 2024), while azithromycin resistance is considered stable (at approximately 4–5%), although high-level resistance is increasing [12,15]. Ciprofloxacin resistance remains high (approximately 60%) [6], and strains classified locally as XDR, defined here as high-level azithromycin resistance with decreased susceptibility to ceftriaxone, have been detected [12,15].

In North America, the United States Gonococcal Isolate Surveillance Project (GISP) indicates that *N. gonorrhoeae* has developed resistance to nearly all previously used antimicrobials, leaving extended-spectrum cephalosporins as the only consistently effective class [8]. Azithromycin resistance and minimum inhibitory concentrations (MICs) are increasing, with occasional decreased susceptibility to ceftriaxone [8,16]. Similar trends are reported in Canada, with high ciprofloxacin resistance, increasing azithromycin resistance and occasional decreased susceptibility to ceftriaxone [13]. Antimicrobial-resistant strains in North America are often associated with urban transmission networks and international travel.

In the Latin American and Caribbean region, gonococcal AMR is characterised by high levels of MDR in the context of fragmented surveillance systems. Very high resistance rates to penicillin (up to 98%), tetracycline (up to 90%) and ciprofloxacin (up to 89%) are reported, alongside substantial azithromycin resistance (up to 61%) [13,17]. Resistance to extended-spectrum cephalosporins remains relatively low (0.09% to 8.5%) [17].

## Event background

Between 2022 and June 2026, an increasing number of European countries have reported *N. gonorrhoeae* isolates with resistance or decreased susceptibility to ceftriaxone, including MDR<sup>1</sup> and XDR<sup>2</sup> strains, in the ECDC EpiPulse platform. These reports now include Austria, Croatia, Denmark, France, Germany, Ireland, the Netherlands, Norway, Spain, Sweden and the United Kingdom (UK). While early detections in 2022–2024 were sporadic, the epidemiological situation has evolved during 2025 and 2026, with rising case numbers in several countries and growing evidence of domestic transmission.

## Upsurge in ceftriaxone-resistant *Neisseria gonorrhoeae* with evidence of domestic transmission in the EU/EEA and the UK

Notable increases in reporting of ceftriaxone-resistant cases have been observed in Sweden, France, Germany and the UK.

In Sweden, sporadic ceftriaxone-resistant cases were reported between 2020 and 2024 (zero to three cases annually), but this increased in 2025 with nine cases identified, followed by four additional confirmed cases during the first half of 2026.

In France, very few sporadic cases were reported prior to 2023 (two cases in 2022 and four in 2023), but since January 2025 at least 17 MDR/XDR cases have been identified, including 11 MDR and six XDR isolates and three distinct clusters with a wide geographical span. Most of the infections affected heterosexual individuals and three clusters of isolates were identified. Reported exposures included travel to South-East Asia (or sexual contact with someone who had travelled to that region), as well as travel in Europe (Spain, Germany and the UK) and North Africa (Tunisia).

Germany observed a similar increase in reported ceftriaxone-resistant cases with seven MDR/XDR cases reported in 2025. Five of these were associated with travel to South-East Asia and two cases were linked to autochthonous transmission within Germany. Among these, two cases with travel history and both cases which acquired the infection within Germany reported exposure through sex workers as route of transmission. In 2026, two cases with

<sup>1</sup> MDR *N. gonorrhoeae*: resistance to  $\geq 1$  first-line drug (ceftriaxone, cefixime or azithromycin) plus  $\geq 2$  alternative antibiotics (penicillins, fluoroquinolones, aminoglycosides, carbapenems, spectinomycin).

<sup>2</sup> XDR *N. gonorrhoeae*: resistance to  $\geq 2$  first-line drugs (ceftriaxone, cefixime and azithromycin) plus  $\geq 3$  alternative antibiotic categories (penicillins, fluoroquinolones, aminoglycosides, carbapenems, spectinomycin).

ceftriaxone-resistant isolates have been detected as of mid-June in Germany. No travel history was reported for any of the cases in 2026, indicating domestic acquisition (one reported contact with heterosexually oriented sex workers).

In the UK, national surveillance shows increased frequency of ceftriaxone-resistant *N. gonorrhoeae* since 2021, including 13 cases in 2024, 29 cases in 2025, and an expected increase in 2026 with 17 cases already identified by June [18]. Most of these cases are associated with travel to South-East Asia. In April and May, a cluster of 6 cases was identified within a defined sexual network with no recent international travel reported, indicating sustained domestic transmission.

Several other countries continue to report few sporadic cases of ceftriaxone-resistant *N. gonorrhoeae*. Denmark reported two cases in 2025 and one in 2026, all linked to travel and without evidence of onward transmission. Norway reported two epidemiologically linked cases in 2026 with no reported travel history. Austria reported one case in 2022 and one in 2025, both classified as XDR and reporting travel history. Ireland reported one case in 2025 and another in 2024, the latter of which reported travel. Single cases were reported in the Netherlands (2025), with travel history, and in Spain (2026) and Croatia (2026) without confirmed travel history.

Importation remains the principal mechanism introducing ceftriaxone-resistant strains into Europe. This is evident in France (six of 15 cases since 2025), Germany (5 of 9 cases since 2025), Denmark (three of three cases), Austria (two of two cases), Ireland (one of two cases) and the Netherlands (one case), where infections were linked to travel to South-East Asia (Cambodia, Indonesia, Thailand, and Viet Nam). France has additionally reported four cases linked to acquisition abroad (Germany, Spain, Tunisia, and the UK). These repeated importation events continue to introduce genetically diverse AMR strains into European populations.

At the same time, there is increasing evidence of local transmission across Europe. In Germany, two infections with ceftriaxone-resistant *N. gonorrhoeae* reported in 2025 were attributed to domestic transmission and neither of the two individuals diagnosed with drug-resistant gonorrhoea in 2026 reported recent travel. In Sweden, seven of the 13 ceftriaxone-resistant *N. gonorrhoeae* infections detected between 2025 and 2026 were acquired domestically. In Norway, two cases detected in April 2026 were directly epidemiologically linked. In France and the UK, the identification of defined clusters demonstrates secondary transmission following introduction. Among the drug-resistant *N. gonorrhoeae* infections reported in France, five were acquired domestically. In addition, single cases without confirmed travel identified in Croatia, Spain and Ireland (one of two) may represent locally acquired gonorrhoea rather than isolated introductions.

Across countries, cases are reported primarily among adults aged 20–50 years and predominantly among males (approximately 60–80%). Clinical presentation is mainly symptomatic urethritis, with occasional rectal and pharyngeal infections. Where reported, mode of transmission is predominantly heterosexual, with exposure to sexual networks with high partner change rate (e.g. sex work), contributing to onward spread. In 2026, the first cases among bisexual men and women were reported in the UK, suggesting spread beyond previously affected sexual networks.

## Evidence of MDR and XDR *N. gonorrhoeae* in the EU/EEA and the UK

Microbiological analyses of these ceftriaxone-resistant isolates show a consistent multidrug-resistant profile, with co-resistance to ciprofloxacin, cefixime, penicillin and tetracycline. However, the defining concern is resistance to ceftriaxone, with MIC values ranging from 0.19–0.38 mg/L across countries which reported at least one case. However, MICs up to 1.0 mg/L were reported in Norway, Spain and the UK.

Treatment approaches were reported for most cases and showed consistent use of ceftriaxone-based regimens. Most commonly, treatment consisted of ceftriaxone monotherapy at doses of 500 mg–1 g IM/IV (Denmark, Ireland, France, the Netherlands and the UK). Higher-dose regimens (up to 2 g intravenous (IV)), including repeated or prolonged administration, were used in Croatia and Germany. Combination therapy frequently involved ceftriaxone 0.5–2 g IM/IV with azithromycin 1–2 g (Austria, Germany, Norway, and Spain). In the UK, six treatment failures have been reported to date, all involving extra-genital infections (five pharyngeal and one rectal). Four cases subsequently responded to repeat treatment with ceftriaxone plus azithromycin, while two cases required treatment with ertapenem (one receiving 1 g IV daily for three days and one receiving a single 1 g IV dose). No treatment data were available from Sweden.

Among reported ceftriaxone-resistant isolates, resistance to azithromycin is variable, with high-level resistance of particular concern. While some countries report low or moderate azithromycin MIC values, high-level resistance (>256 mg/L) has been identified in Austria, Croatia, Germany, Sweden, and the Netherlands, and among XDR strains in France. This co-occurrence of high-level azithromycin resistance with ceftriaxone resistance is characteristic of XDR strains and substantially limits therapeutic options. Molecular analyses show that ceftriaxone resistance is primarily driven by mosaic *penA* alleles, particularly *penA* 60.001 and *penA* 237.001, often accompanied by mutations conferring resistance to fluoroquinolones and in some isolates, macrolides. Genomic data indicate both high genetic diversity (consistent with multiple independent introductions) and evidence of clonal spread of specific lineages, notably involving ceftriaxone-resistant lineages of multilocus sequence typing (MLST) ST7365, ST16406, and ST1903 lineages.

## ECDC risk assessment for the EU/EEA

This risk assessment has been developed based on the data available at the time of publication and follows the ECDC rapid risk assessment methodology, where the overall risk is determined by a combination of the probability of infection and the impact of infection [19].

### Question 1. What is the risk related to the increased circulation of ceftriaxone-resistant *N. gonorrhoeae* for the general sexually active population in the EU/EEA?

Reported cases of ceftriaxone-resistant *N. gonorrhoeae* are still sporadic across the EU/EEA, with no evidence of sustained community transmission at this stage. The probability of infection with ceftriaxone-resistant *N. gonorrhoeae* is currently very low for sexually active people in the EU/EEA who do not engage in behaviours associated with an increased probability of acquiring sexually transmitted infections (STIs). However, in people engaging in sex with multiple- or frequently changing sexual partners, and condomless sex (with casual or new partners, or with sex workers), the probability of getting infected with ceftriaxone-resistant *N. gonorrhoeae* is higher, and is assessed as low-to-moderate.

The impact of the infection is assessed as low. Although, gonorrhoea can lead to sexual and reproductive health complications, including pelvic inflammatory disease (PID), epididymo-orchitis, infertility, ectopic pregnancy, chronic pelvic pain, and, in rare cases, disseminated gonococcal infection with systemic manifestations, the infection can be cleared when treated with appropriate antibiotic regimens. However, while all reported cases were successfully treated with higher-dose ceftriaxone or combination regimens, the narrowing range of therapeutic options related to these strains being MDR/XDR indicate increasing challenges for clinical management.

Based on these factors, the overall level of risk (combination of probability and impact) in the EU/EEA is assessed as low for sexually active people who do not engage in behaviours associated with an increased probability of STIs, and as low-to-moderate for sexually active people who engage in behaviours associated with an increased probability of acquiring STIs.

Although cases of ceftriaxone-resistant *N. gonorrhoeae* are still sporadic across the EU/EEA, the increasing number of detections, evidence of domestic transmission, and spread of ceftriaxone-resistant lineages may indicate a potential early phase of expansion, with a risk of further escalation if control measures are not implemented and maintained.

If sustained transmission becomes established in the EU/EEA, particularly within interconnected and/or overlapping sexual networks, the probability of infection would increase and currently recommended first-line treatment regimens could become less/non-effective, increasing the overall risk to the EU/EEA population.

Effective antibiotic treatment regimens exist in the EU/EEA, informed by national or international clinical guidelines, and are delivered through accessible sexual health services. Patient acceptance of treatment is generally good when care is provided in a clear, confidential and non-stigmatising manner. However, optimal clinical and public health outcomes depend on adherence to prescribed therapy, as well as effective partner notification and attendance for test of cure, to ensure microbiological clearance and to prevent ongoing transmission [10-12,20].

### Question 2. What is the risk for people living/residing in the EU/EEA travelling to areas with increased circulation of ceftriaxone-resistant *N. gonorrhoeae* with MDR/XDR profiles and engaging in behaviours associated with an increased probability of acquiring STIs?

The probability of acquiring ceftriaxone-resistant *N. gonorrhoeae* is assessed as moderate for people living/residing in the EU/EEA travelling to areas with increased circulation of ceftriaxone-resistant *N. gonorrhoeae* with MDR/XDR profiles and engaging in behaviours associated with an increased probability of acquiring STIs. Such behaviours include having condomless sex with multiple or frequently changing sexual partners, or with sex workers.

The impact of the infection is assessed as low. Although ceftriaxone-resistant MDR/XDR strains may further limit available treatment options and pose an additional challenge for the clinical management, all reported cases have been successfully treated with appropriate regimens [10]. Increasing circulation of these strains in the EU/EEA poses significant concern for future treatment effectiveness and control.

Based on these factors, the overall level of risk for people living/residing in the EU/EEA travelling to areas with increased circulation of ceftriaxone-resistant gonorrhoea with MDR/XDR profiles and engaging in behaviours associated with an increased probability of acquiring STIs, is assessed as moderate.

Overall, the current situation highlights the importance of continued surveillance, antimicrobial susceptibility testing, optimisation of treatment regimens, including test-of-cure and targeted prevention measures, to limit spread and preserve the effectiveness of existing therapies.

## ECDC recommendations

Containing the spread of ceftriaxone-resistant *N. gonorrhoeae*, requires coordinated public health and clinical action across prevention, diagnosis, treatment and surveillance. This should include interventions to reduce transmission, promote timely diagnosis and appropriate treatment, strengthen surveillance, and support the detection and management of antimicrobial-resistant infections. EU/EEA countries should strengthen gonococcal AMR surveillance and microbiology laboratory capacity to ensure the timely detection, culture-based characterisation, reporting, and public health response to antimicrobial-resistant strains and suspected treatment failures.

### Prevention and risk reduction

Public health authorities, healthcare providers and community partners should prioritise efforts to support sexually active individuals in reducing transmission of *N. gonorrhoeae*, as this is central to controlling the spread of both antimicrobial-susceptible and AMR strains. Such efforts should combine broad population-level messaging with behaviour-based approaches that promote safer sexual practices, regular testing, timely treatment, and risk awareness among individuals with multiple or changing sexual partners.

- Sexually active individuals should be informed about the increasing occurrence of AMR *N. gonorrhoeae* and its potential impact on treatment options.
- Sexually active individuals with new or multiple sexual partners should consistently and correctly use condoms and other barrier methods (e.g. dental dams) to reduce the risk of STI transmission.
- Travellers to areas with high-prevalence of ceftriaxone-resistant *N. gonorrhoeae*, and individuals with multiple or frequently changing sexual partners, should be advised to consistently use protective measures during sex to reduce their risk of infection and onward transmission. They should seek testing upon return if experiencing symptoms or in case of a potential exposure.
- Sexually active individuals, especially those with new or casual partners, including people who sell or exchange sex and their clients, and engaging in sex without protective measures, should undergo regular STI testing in accordance with national recommendations.

### Clinical management, case finding and treatment failure

Healthcare providers play a central role in the early detection and diagnosis, appropriate clinical management, identification of treatment failures and prevention of onward transmission. Health systems should ensure easy access to testing, treatment, partner notification, and up-to-date guidance for healthcare providers.

- Regular STI testing should be offered in accordance with national recommendations, with a focus to sexually active individuals and frequency tailored to individual risk factors and sexual practices.
- Testing of all exposed anatomical sites (urogenital, rectal and pharyngeal) should be considered, based on reported sexual practices, to ensure a comprehensive diagnosis.
- Recommended treatment regimens should be prescribed in accordance with current European [10] and national guidelines and should adapt treatment based on antimicrobial susceptibility results where available.
- For all confirmed gonorrhoea cases caused by ceftriaxone-resistant gonorrhoea, a nucleic acid amplification test (NAAT) and, where feasible, a culture-based test-of-cure should be performed to confirm microbiological clearance and detect treatment failure, especially for pharyngeal cases. Pharyngeal infections may be more difficult to eradicate and are at increased risk of treatment failure.
- Effective partner notification and management should be implemented to prevent reinfection and onward transmission.
- In cases of suspected treatment failure, culture and antimicrobial susceptibility testing (AST) should be performed whenever possible to confirm treatment failure and characterise antimicrobial resistance. Suspected and confirmed treatment failures should be reported promptly and managed in line with the recommendations of the ECDC response plan and national surveillance procedures [20].

### Surveillance and laboratory capacity

Public health authorities should recognise that strengthening surveillance, laboratory capacity and reporting systems is essential to detect, monitor and respond to AMR *N. gonorrhoeae*. Priority actions include:

- Improved access to and use of culture-based characterisation of *N. gonorrhoeae* isolates to ensure detection of AMR patterns and guide treatment.
- Improve access to whole genome sequencing (WGS) and strengthen the use of molecular surveillance data.

- Increase participation in EU/EEA level surveillance and monitoring activities, and enhance representativeness of sampling, ensuring as many isolates as possible and geographic coverage for robust surveillance.
- Strengthen the linkage and completeness of epidemiological and laboratory data, as well as including WGS data, to better identify at-risk populations and transmission patterns.
- Improve monitoring of treatment practices and outcomes, including adherence to recommended therapy and availability of prescribing data.
- Enhance national capacity to detect, investigate and report treatment failures, including use of standardised case definitions and reporting tools to ensure timely response [11,20].
- Ensure rapid reporting and information exchange at EU/EEA level for ceftriaxone-resistant, MDR and XDR isolates, to support coordinated public health action.

## Preparedness for emerging treatment options

- Public health authorities and clinical networks should remain informed of current treatment guidelines [10] and emerging therapeutic options, including zoliflodacin [21] and gepotidacin [22]. Countries should establish mechanisms to facilitate timely access to alternative treatments, including compassionate-use pathways where appropriate, to ensure preparedness should the treatment options currently recommended in clinical guidelines become ineffective or unavailable. Information on access pathways to zoliflodacin for investigational treatments is available through the Global Antibiotic Research and Development Partnership (GARDP) Managed Access Programmes<sup>3</sup>.
- The Health Security Committee Opinion on STIs (2024)<sup>4</sup> highlighted that countries should consider measures to ensure continuous access to treatments and diagnostics in case of outbreaks, notably the potential outbreak of multi-drug-resistant *N. gonorrhoeae*, including reservation of production capacities and stockpiling interventions.

## Risk communication and community engagement

Effective risk communication and community engagement (RCCE) around sexual health play a vital role in promoting preventive behaviours that can help reduce STI transmission more broadly and thereby limit the spread of ceftriaxone-resistant *N. gonorrhoeae*.

As the risk of infection is primarily driven by sexual behaviours associated with an increased risk of acquiring a sexually transmitted infection, rather than by belonging to a particular population group, communication strategies should combine broad population-level messaging with behaviour-based approaches. Communication should provide clear, accurate and non-judgemental information that promotes safer sexual practices, regular testing, timely treatment and follow-up, and raises awareness of risk among individuals with multiple or changing sexual partners.

Public health authorities should actively work with sexual health services, community-based organisations, travel clinics and other relevant stakeholders to deliver targeted risk communication messages to the intended audiences through appropriate and trusted channels. Given that transmission patterns may occur across multiple and interconnected social and sexual networks, risk communication should avoid isolation or stigmatisation of specific groups. Community engagement should facilitate two-way communication, including listening to community concerns, identifying information gaps and barriers to testing and treatment, and adapting messages based on feedback received.

Public-facing communication can emphasise measures that reduce STI transmission including the importance of safer sex practices such as the correct and consistent use of condoms and other means of prevention (e.g. using dental dams) [23]. Individuals should be encouraged to follow national guidelines on STI testing, particularly after sex without a condom or other modes of prevention with new or casual partners.

Considering the number of infections with ceftriaxone-resistant *N. gonorrhoeae* associated with travel, information on safer sex practices should be considered as part of routine travel advice.

Healthcare providers and sexual health clinics should clearly communicate the importance of testing, treatment adherence, test of cure and partner notifications to ensure patient adherence to treatment protocols and follow-up. Public-facing information should emphasise that gonorrhoea may be asymptomatic, describe possible symptoms, and encourage individuals with suspected symptoms to seek medical evaluation and testing. Individuals diagnosed with gonorrhoea should be informed of the importance of completing treatment and attending a test of cure, to confirm the infection has cleared, given the context of emerging AMR and the risk of treatment failure [20].

<sup>3</sup> <https://gardp.org/gardp-managed-access-programs>

<sup>4</sup> [https://health.ec.europa.eu/publications/opinion-health-security-committee-sexually-transmitted-infections\\_en](https://health.ec.europa.eu/publications/opinion-health-security-committee-sexually-transmitted-infections_en)

Patients should also be advised on the importance of partner notification and provided with appropriate support so that recent sexual contacts can be tested and treated, to prevent onward transmission [24,25]

Overall, in line with the ECDC response plan to control and manage the threat of MDR/XDR gonorrhoea, countries should develop and maintain a national communication strategy or plan on gonorrhoea, STI and sexual health. Such a strategy should, at a minimum, include a plan for the dissemination of the most recent data on gonorrhoea and AMR patterns to increase the awareness of the threat among clinicians, healthcare providers, policy-makers and the sexually active population.

## Limitations

This risk assessment is subject to several limitations that should be considered when interpreting its conclusions.

- Cases described in the document are from 12 European countries, and may not fully reflect the geographical distribution of the event. Under-detection and under-reporting of antibiotic-resistant cases cannot be excluded and may lead to underestimation of the true burden of antimicrobial-resistant gonorrhoea. A substantial proportion of gonorrhoea diagnoses rely on NAAT or on clinical symptoms only, without accompanying culture, AST and genomic data, limiting the detection and characterisation of resistance profiles.
- Heterogeneity in surveillance systems configuration/design and capacities across countries affect comparability and representativeness of data. Differences in laboratory infrastructure, surveillance coverage and reporting practices across EU/EEA countries result in uneven data quality and may bias regional assessments.
- Incomplete epidemiological data limit the understanding of transmission dynamics and populations with increased risk of acquiring AMR gonorrhoea. Key variables such as mode of transmission, anatomical site of infection and travel history are not consistently reported, limiting the ability to identify affected populations and transmission networks.
- Limited data on treatment outcomes and failures reduce the ability to assess clinical effectiveness and emerging resistance, as treatment failures are rarely reported despite available case definitions and reporting tools, likely reflecting under-detection or under-reporting rather than absence of such events.
- Potential misclassification of treatment failure introduces uncertainty in interpreting clinical outcomes, as distinguishing true treatment failure from reinfection or delayed clearance remains challenging, particularly in the absence of culture and genomic data.
- Time lags in surveillance and reporting may result in delays in capturing the current epidemiological situation, meaning that emerging resistance trends and increasing case numbers may not be fully reflected at the time of assessment.
- Limited representativeness of reported cases may bias findings towards specific populations or settings, as data are more likely to originate from countries or subpopulations with stronger surveillance capacity, potentially underrepresenting transmission in under-served or less-monitored groups.

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