Informative Note:
Antimicrobial-resistant *Campylobacter* infection in men who have sex with men

5 April 2024

Background

In 1970, in San Francisco, United States of America, the first outbreak of shigellosis among men who have sex with men (MSM) was described, and since then, the sexual transmission of enteric pathogens in this population is a recognized fact *(1)*.

Among the most frequent enteric pathogens, we can pinpoint *Escherichia coli, Shigella Flexneri, Shigella sonni*, viruses such as hepatitis A virus (HAV), and parasites such as *Giardia lamblia* or *Entamoeba histolytica* as well as several species of *Campylobacter* (*2, 3, 4*) that are often associated with multidrug resistance to commonly used antimicrobials.

Transmission among the MSM population occurs through oral-anal contact or sexual contact; the efficiency of transmission is enhanced by both biological and host factors. The incubation period for this infection can be between 1 and 10 days. The most common symptoms include inflammation of the colon and rectum, diarrhea, and severe abdominal pain; watery diarrhea with blood and mucus, fever, abdominal cramping, and a feeling of urgency to evacuate may also be observed. Treatment usually includes fluid and electrolyte replacement, and antibiotics in cases caused by bacteria.

Risk factors include multiple sexual partners, online dating, recreational drug use including chemsex, unprotected intercourse, and use of sex toys and feces during sexual practices.

Campylobacter bacteria are motile gram-negative bacilli. There are dozens of species, with *C. jejuni* being the species most commonly implicated in human infections. Other species considered to be human pathogens include *C. coli, C. fetu,* and *C. lari*.

The first symptoms of illness usually appear 2 to 5 days after infection (range 1 to 10 days), with the most frequent clinical symptoms being diarrhea (bloody), abdominal pain, fever, headache, nausea and/or vomiting, and usually last 3 to 6 days. Most people have a self-limited illness, without the need for antibiotic treatment.

Groups at risk for severe illness are people 65 years of age or older, pregnant women, and people with weakened immune systems, such as those with a blood disorders, acquired immunodeficiency syndrome (AIDS), or those undergoing chemotherapy.

Most people with a *Campylobacter* infection recover within a week. Five to 20% of cases may develop irritable bowel syndrome for a limited time and 1 to 5% arthritis. Guillain-Barré syndrome may occur in one in 1000 cases, presenting as muscle weakness or sometimes paralysis that may last for weeks and may require intensive care.

It is relevant to consider that in *Campylobacter* outbreaks reported in recent years among men who have sex with men (MSM), resistance to antibiotics commonly used to treat infections caused by this pathogen has been detected *(5, 6)*.

Suggested citation: Pan American Health Organization / World Health Organization. Informative Note: Antimicrobial-resistant *Campylobacter* infection in men who have sex with men. 5 April 2024, Washington, D.C.: PAHO/WHO; 2024.

Situation Summary

On 15 February 2024, the Minnesota Department of Health in the **United States of America** issued a health advisory regarding an outbreak of *Campylobacter* in Hennepin and Ramsey counties in men who have sex with men (MSM) *(7)*.

The outbreak corresponds to the detection of 13 cases of *Campylobacter jejuni* infection, clustered by whole genome sequencing (WGS), with allele differences from 0 to 5. All cases are male, and 11 of the 13 cases were residents of these counties.

The onset of the disease occurred between 28 August 2023 and 10 January 2024. Among nine cases interviewed, seven reported sexual contact with a male within the week before the onset of illness. No common exposures in restaurants or social contacts were reported, concluding that sexual contact is likely the route of transmission.

Regarding severity, four cases were hospitalized. Co-infection with other enteric pathogens was detected in five cases; four patients were co-infected with enteroaggregative *E. coli*, two with *Shigella,* and one with *Cryptosporidium*.

According to sensitivity and WGS tests, isolates from these cases were resistant to nalidixic acid. Cases showed decreased sensitivity to ciprofloxacin but were sensitive to macrolides.

A similar outbreak was published by the same Minnesota Department of Health in September 2021, with seven cases closely clustered by WGS (0-1 separate alleles); all cases were male and residents of the same counties. Three of the five cases interviewed reported sexual contact with a male within the week prior to illness onset. No common restaurant exposures or social contacts were reported, concluding that sexual contact was likely the route of transmission *(8)*.

Two cases were hospitalized, one case had human immunodeficiency virus (HIV) infection, and most cases had other sexually transmitted infections (STIs). Three of the cases were co-infected with *Giardia*. The sensitivity profile was identical to that of the previously described outbreak (2023-2024).

In **Canada,** outbreaks or clusters caused by *Campylobacter* in men who have sex with men (MSM) have also been documented and published in Montreal and Quebec. Between 1999 and 2001, an outbreak involving nine males aged 26 to 40 years presented with *C. jejuni* enterocolitis resistant to erythromycin and ciprofloxacin and susceptible to tetracycline. In March 1998 and February 2000, two other males aged 23 and 27 years, were infected with erythromycin-resistant, ciprofloxacin-susceptible and tetracycline-susceptible *C. jejuni (9)*.

Between 2003 and 2013, the outbreak affected 31 males aged between 21 and 64 years. *C. jejuni* infection was limited to the gastrointestinal tract. Thirty-five isolates of *C. jejuni* resistant to erythromycin and ciprofloxacin but susceptible to tetracycline were obtained from these cases *(10)*.

In 2015, another outbreak was reported, involving six males aged 35 to 62 years who had enteric *C. coli* pulsovar 15 infection. All six cases reported diarrhea, five reported abdominal pain, one reported fever (>39°C), one reported blood in stool, and one experienced

vomiting. No extraintestinal foci were documented in these patients, and only one required hospitalization. All six cases reported having sex with other men, four had unprotected sex in the week prior to symptom onset, five had HIV infection, and all six males had other STIs. Food was ruled out as the source of infection. All six enteric *C. coli* pulsovar 15 were resistant to erythromycin, azithromycin, clarithromycin, clindamycin, tetracycline, ciprofloxacin, nalidixic acid, ampicillin, and cefotaxime. All isolates were sensitive to amoxicillin/clavulanic acid, imipenem, ertapenem and gentamicin *(3)*.

Recommendations

While reporting of *Campylobacter* outbreaks in MSM in the Americas is not alarmingly frequent at present, the cases were associated with a high rate of antimicrobial resistance. Therefore, Member States are encouraged to maintain surveillance for outbreaks of diarrhea, particularly in MSM populations.

For microbiological diagnosis of *Campylobacter* infections in at-risk groups (persons 65 years of age or older, pregnant women, MSM, and persons with weakened immune systems, such as those with a blood disorder, acquired immunodeficiency syndrome [AIDS] or receiving chemotherapy), a stool specimen should be obtained for culture, isolation and identification of the bacteria; in addition to blood culture samples in patients with signs of focal infection or severe systemic disease. Polymerase chain reaction (PCR) or antigen detection can be performed if a rapid diagnosis is needed to detect the genetic material of the bacterium. Also, whole genome sequencing (WGS) allows the detection of clusters of cases and the timely identification of species in which antimicrobial resistance has already been documented.

For the treatment of *Campylobacter* infections, the information provided by the laboratories performing the sensitivity tests is essential to ensure successful treatment and mitigate the spread of resistant pathogens.

PAHO/WHO encourages Member States to be vigilant in cases of MSM presenting with diarrhea with dysentery features and urges the provision of counseling to the MSM community on the risk of transmission of enteric pathogens during sexual activity (oral-anal, oral-genital, anal-genital, and digital-anal contact) and warning guidelines for consultation in case of dysentery symptoms.

There is very little evidence on risk practices and possible preventive measures, but it is considered that some may be useful such as avoiding direct contact with feces, using barrier methods such as condoms during anal penetrative sex, use of gloves during fisting and rectal touching, and use of latex barrier during anilingus, in addition to frequent hand washing. Persons with an enteric infection should be counseled to avoid sexual transmission, highlighting the benefits of hand washing, avoiding fecal contamination of food and water, and avoiding fecal exposure during sexual intercourse.

Additionally, Member States are urged to be on the lookout for an unusual increase in cases of *Campylobacter* infection, especially in risk groups, and to notify through the official International Health Regulations (IHR) channels according to the outcome of the IHR Annex 2 decision algorithm *(11)*.

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