
Community experiences of the 2022–2023 mpox outbreak in Europe and the Americas

Technical brief

Community experiences of the 2022–2023 mpox outbreak in Europe and the Americas

Technical brief

Community experiences of the 2022–2023 mpox outbreak in Europe and the Americas: technical brief

ISBN 978-92-4-007728-7 (electronic version)

ISBN 978-92-4-007729-4 (print version)

© World Health Organization 2023

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: “This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition”.

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization (<http://www.wipo.int/amc/en/mediation/rules/>).

Suggested citation. Community experiences of the 2022–2023 mpox outbreak in Europe and the Americas: technical brief. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

Sales, rights and licensing. To purchase WHO publications, see <https://www.who.int/publications/book-orders>. To submit requests for commercial use and queries on rights and licensing, see <https://www.who.int/copyright>.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Design and layout by Lushomo

Contents

Acknowledgements	iv
Definitions	v
Executive summary	vi
Overview	1
Introduction	1
Survey methods	2
Findings	3
Demographics and regional breakdown	3
Mpox diagnosis and vaccination	3
Mpox fears and concerns	4
Adaptive changes in sexual behaviour	4
Experience of mpox illness.....	6
Limitations.....	7
Key lessons	8
Conclusion	9
References	10

Acknowledgements

Mateo Prochazka (independent consultant) conceived and coordinated the development of this publication under the direction of Andrew Seale (Department of Global HIV, Hepatitis and Sexually Transmitted Infection Programmes, World Health Organization (WHO)). Ana Hoxha (WHO Health Emergencies Programme) and Pietro Vinti (WHO Regional Office for Europe) provided direct technical support with survey design, implementation and analysis. Benjamin Duncan, Leonardo Palumbo and Martha Scherzer (WHO Regional Office for Europe), Hortencia Peralta, Ruben Mayorga-Sagastume, Omar Sued and Marcelo Vila (Pan American Health Organization), Leilia Dore, Vida Gabe, Rosamund Lewis, Tom Moran, Boris Pavlin and Tanja Schmidt (WHO Health Emergencies Programme) and Maeve Brito de Mello, Meg Doherty, Ismael Maatouk, Antons Mozalevskis, Annette Verster and Marco Vitoria (WHO Department of Global HIV, Hepatitis and Sexually Transmitted Infection Programmes) provided additional technical input and guidance. The WHO Sexual and Reproductive Health team

(Vanessa Brizuela and Lianne Gonsalves) provided early technical input.

WHO thanks Stacy Baca, Andy Kraut (Grindr) and Steph Niaupari, Jawad Badran and Pedro Moreno (Hornet) and Lee Frankl (Scruff and Jack'd) for their critical input on implementation considerations. WHO also thanks Rafał Majka (Polish AIDS Society, Association for Preventive Healthcare “Jeden Świat”) and Zohar Mor (Israel Ministry of Health, Ashkelon Academic College, Department of Public Health) for providing external peer review for the study protocol. Thanks are also due to the following civil society organization representatives and experts for validating the translations of the survey: Enrico Caruso (Milano Check Point), Will Nutland (The Love Tank), Miloš Perić and Vladimir Veljković (Asocijacija DUGA), Miguel Rocha (GAT – Portuguese Activist Group on Treatments), Axel J. Schmidt (Deutsche Aidshilfe), Annie Velter and Stéphan Vernhes. Special thanks are due to all study participants who voluntarily shared their experiences of the multi-country mpox outbreak to inform improvements to the global response.

Definitions

Chemsex is defined as individuals engaging in sexual activity while taking primarily stimulant drugs, typically involving multiple participants and over a prolonged time (1).

Gender identity refers to a person's innate, deeply felt internal and individual experience of gender, which may or may not correspond to the person's physiology or designated sex at birth.

Gender expression refers to how an individual expresses their gender identity, including dress and speech (2). Gender expression is not always indicative of gender identity.

Trans and gender-diverse people is an umbrella term for people whose gender identity, roles and expression do not conform to the norms and expectations traditionally associated with the sex assigned to them at birth; it includes people who are transsexual, transgender or otherwise gender nonconforming or gender incongruent (1).

Sexual orientation refers to a person's physical, romantic and/or emotional attraction (or lack thereof) towards other people (1). It encompasses hetero-, homo- and bisexuality and a wide range of other expressions of sexual orientation (3). Sexual orientation cannot be assumed from one's assigned sex at birth, gender identity or gender expression.

Men who have sex with men refers to all men who engage in sexual relations with other men. The words "men" and "sex" are interpreted differently in diverse cultures and societies and by the individuals involved. Therefore, the term encompasses the large variety of settings and contexts in which male-to-male sex takes place, regardless of multiple motivations for engaging in sex, self-determined sexual and gender identities and various identifications with any particular community or social group (1).

References

1. Consolidated guidelines on HIV, viral hepatitis and STI prevention, diagnosis, treatment and care for key populations. Geneva: World Health Organization; 2022 (<https://apps.who.int/iris/handle/10665/360601>, accessed 6 July 2023).
2. Frequently asked questions on health and sexual diversity: an introduction to key concepts. Geneva: World Health Organization; 2016 (<https://apps.who.int/iris/handle/10665/255340>, accessed 6 July 2023).
3. Need to know guidance: working with lesbian, gay, bisexual, transgender, intersex and queer persons in forced displacement. Geneva: United Nations High Commissioner for Refugees; 2021 (<https://www.refworld.org/docid/4e6073972.html>, accessed 6 July 2023).

Executive summary

On 11 May 2023, 12 months after the first cluster of cases of mpox transmitted in sexual networks in Europe was identified, the Director-General of the World Health Organization (WHO) declared that the multicountry outbreak of mpox no longer constituted a public health emergency of international concern. Throughout 2022–2023, WHO risk communication and community engagement teams worked in collaboration to provide guidance and support to communities newly affected by mpox, including gay men, bisexual men and other men who have sex with men, trans and gender-diverse people and sex workers.

This technical brief provides key findings from an electronic survey conducted in Europe and the Americas via geospatial networking applications frequently used by these communities. The survey was designed to capture communities' experiences of mpox during the first 12 months of the outbreak, aiming to identify their fears and concerns, adaptive changes in sexual behaviour resulting from mpox, access to mpox diagnosis and vaccination and individual experiences of mpox.

The survey identified high levels of mpox-related concerns among affected communities, which translated into widespread, temporary adaptations of people's sexual behaviour to manage their risk. Survey data analysis also identified insufficient and unequal access to mpox testing and vaccination services across settings. People's self-reported experience of mpox highlighted the role of stigma and discrimination in increasing the emotional distress produced by the physical symptoms of the illness.

Findings from this survey provide valuable insights into the experiences and needs of the affected communities and emphasizes the importance of increasing access to vaccination and diagnostics globally. Tailored risk communication and community engagement strategies are essential to respond effectively to future outbreaks and protect at-risk individuals and communities. Collaboration with geospatial networking applications is crucial for emergency preparedness and response in these sexual networks.

Overview

This technical brief presents key findings from an electronic survey that examined the experiences of the first 12 months of the 2022–2023 mpox outbreak among gay men, bisexual men and other men who have sex with men and among trans and gender-diverse people in Europe and the Americas.

It describes: the communities' reported fears and concerns related to mpox; the presence and duration of changes in sexual behaviour resulting from mpox; the willingness to make changes to sexual

behaviour in case of a resurgence; and access to mpox diagnostics and vaccination services.

The survey findings also provide insights into the experience of illness among people in these communities who experienced mpox during the outbreak.

The technical brief also explores key lessons from survey findings to help improve risk communication and community engagement for any future infectious disease outbreaks affecting these communities.

Introduction

In 2022–2023, an unprecedented outbreak of mpox (previously monkeypox) affected people and communities in 112 countries. A novel feature of this outbreak was sustained person-to-person transmission through sexual contact, with most cases in newly affected countries linked to the sexual networks of gay, bisexual and other men who have sex with men, which also affected trans and gender-diverse people (1, 2). Most cases reported globally were in Europe and the Americas. Because of the scale of the outbreak, the Director-General of WHO declared the multicountry outbreak of mpox to be a public health emergency of international concern between July 2022 and May 2023, issuing temporary recommendations to guide countries for a coordinated approach in the emergency response (3, 4).

Since the first cases were identified in May 2022, the risk communication and community engagement teams of the WHO Health Emergencies Programme and the WHO Department of Global HIV, Viral Hepatitis and Sexually Transmitted Infections Programmes, in collaboration with WHO regional offices, combined emergency response and technical expertise to provide guidance for newly affected communities (5).

The goals of this area of work were to engage affected communities in the WHO response; to deliver transparent, timely and non-stigmatizing risk communication on protective behaviour to decrease transmission; and to increase the availability and use of socio-behavioural evidence for a data-driven outbreak response.

Based on emerging scientific evidence on the sexual transmissibility of mpox and of communities' values and preferences, WHO recommended key protective behaviour to newly affected communities to reduce mpox transmission, morbidity and mortality (6). Specific adaptations to sexual behaviour included reducing the number of sexual partners, avoiding contexts in which the risk of mpox transmission was highest (such as group sex, sex clubs or saunas, chemsex or drug use in sexual contexts) and having open conversations with sexual partners about mpox. Public health advice was also shared to increase care-seeking behaviour, including self-monitoring for signs and symptoms, seeking health advice from trusted sources, getting tested if symptomatic and isolating if diagnosed with mpox until signs and symptoms had resolved. This advice also highlighted the need for

understanding, preventing and addressing emerging stigma and discrimination.

In May 2023, after the Director-General of WHO declared that the multicountry mpox outbreak no longer constituted a public health emergency of international concern (4), the risk communication and community engagement teams of the WHO Health Emergencies Programme and the WHO Department of Global HIV, Viral Hepatitis and Sexually Transmitted Infections Programmes conducted a rapid cross-sectional survey to explore the experiences of gay men, bisexual men and other men who have sex with men and trans and gender-diverse people during the first year of the outbreak. The study aimed to identify fears and concerns about mpox, presence and duration of any adaptive changes in sexual behaviour resulting from mpox, willingness to change sexual

behaviour in case of resurgences and prevalence of mpox diagnosis and vaccination among survey participants. The survey also explored experiences of illness among people who were diagnosed with mpox, including stigma, discrimination and long-term consequences of mpox.

This technical brief presents key findings from this survey. These findings can inform risk communication and community engagement strategies in addressing future outbreaks, including evaluating and reshaping public health advice. The findings from this research can also support preparedness and response to other outbreaks of emerging infectious diseases transmitted by contact within these sexual networks. Finally, the survey findings may support mathematical modelling of the outbreak trajectory for the assessment of future epidemiological scenarios.

Survey methods

The survey was launched in 23 newly affected countries in Europe and the Americas and in nine languages. Countries in which geospatial application users were invited to participate included Belgium, France, Germany, Ireland, Italy, Netherlands (Kingdom of the), Poland, Portugal, Serbia, Spain, Switzerland and the United Kingdom of Great Britain and Northern Ireland in Europe and Argentina, Brazil, Canada, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru and the United States of America in the Americas.

WHO advertised this survey using in-app direct messages and/or pop-ups through four geospatial dating applications (Grindr, Hornet, Jack'd, Scruff) used by communities of gay men, bisexual men and other men who have sex with men and trans and gender-diverse people. The survey was conducted between 19 and 31 May 2023 (11 days).

Eligibility criteria included being 18 years or older, and identifying as a gay man, a bisexual man, a man who has sex with men, or as a trans or gender-diverse person, and agreeing to participate in the survey. The survey included 37 questions and was created by the study team in close collaboration with the affected communities. Translations of the survey were validated with civil society organizations and native speakers. Data were collected on the WHO electronic data collection platform by LimeSurvey, and quantitative analysis was conducted using Stata 15.0. Rapid thematic analysis was applied to qualitative data provided in open-ended fields.

Data collection was anonymous and confidential, and participants were provided with context on the study on the survey landing page, allowing them to make an informed and voluntary decision regarding their participation. The WHO Ad Hoc COVID-19 Research Ethics Review Committee granted approval for this study.

Findings

Demographics and regional breakdown

The survey generated more than two million impressions among application users across 23 countries, with a click-through-rate ranging between 1.4% and 18.1% depending on the application and country. A total of 24 306 people initiated the survey, with 16 875 eligible individuals successfully completing all questions. Among them, 97.0% identified as men, and most were gay (80.4%) or bisexual (16.5%). Trans and gender-diverse people accounted for 3.9%, and 4.4% of the participants reported currently engaging in sex work. A total of 61.0% of the participants were 35 years or older. People living with HIV represented 17.6% of participants, of which 97.6% reported receiving antiretroviral therapy. Among those who were negative for HIV, 34.8% reported currently using HIV pre-exposure prophylaxis (PrEP).

The WHO European Region accounted for 51.3% of the participants, with 48.3% from western Europe and 3.0% from eastern Europe and the western Balkans (Poland and Serbia). The Americas accounted for 48.7% of the participants, with 11.9% from the United States of America and Canada and 36.8% from Latin America.

Mpox diagnosis and vaccination

Of the 16 875 study participants, 6.4% had, or thought they had, mpox: 4.8% were diagnosed with mpox through a laboratory test and 1.6% were not diagnosed but had compatible symptoms during the outbreak. Regarding vaccination, 29.6% received at least one dose of the vaccine: 8.8% received only one dose of the vaccine and 20.8% received two doses of the vaccine (Table 1).

Table 1. Prevalence of mpox diagnosis and vaccination, by region

Region	Mpox laboratory diagnosis	Mpox-compatible symptoms ^a	Vaccine (one dose)	Vaccine (two doses)
Western Europe	5.0%	1.3%	41.8%	27.8%
Eastern Europe and the western Balkans	1.0%	1.8%	2.8%	1.4%
United States and Canada	6.0%	2.2%	60.0%	51.3%
Latin America	4.5%	1.8%	6.0%	3.4%
Overall	4.8%	1.6%	29.6%	20.8%

^a Excluding those who had a confirmed laboratory diagnosis.

The major differences in vaccination rates by region shown in Table 1 suggest significant challenges to access these interventions in some countries, especially in Latin America and in eastern Europe and the western Balkans. Among those unvaccinated,

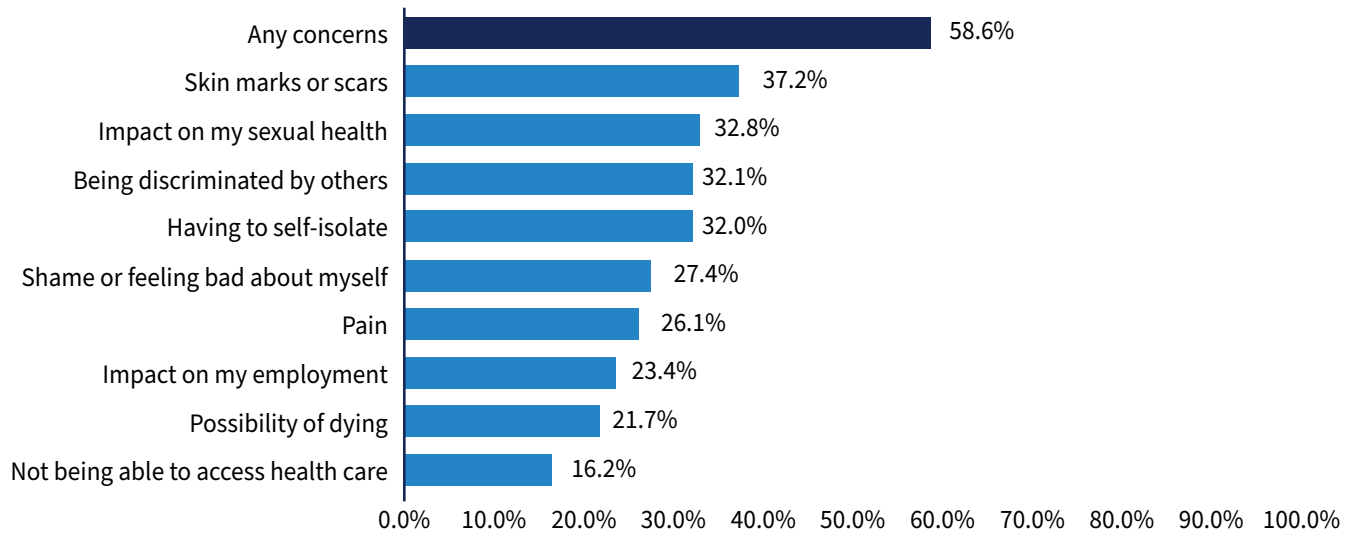
regardless of region, the reported reasons for not being vaccinated included lack of access (58.5%), lack of perceived need (24.7%), refusal (12.6%) and problems or difficulties in giving priority to vaccination (12.3%).

Mpox fears and concerns

A total of 58.6% of the participants expressed concern about contracting mpox after learning about the

outbreak (Fig. 1). The most frequently reported concerns included having skin marks or scars (37.2%), closely followed by impact on sexual health, being discriminated by others and having to self-isolate.

Fig. 1. Mpox fears and concerns among survey participants



Adaptive changes in sexual behaviour

Among survey participants, 50.9% reported changing their sexual behaviour because of mpox concerns between May and December 2022 (Fig. 2). Among those who reported changing their sexual behaviour, reducing the number of sexual partners (93.2%), avoiding group sex (88.3%) and avoiding sex clubs or saunas (84.5%) were the most frequent changes made.

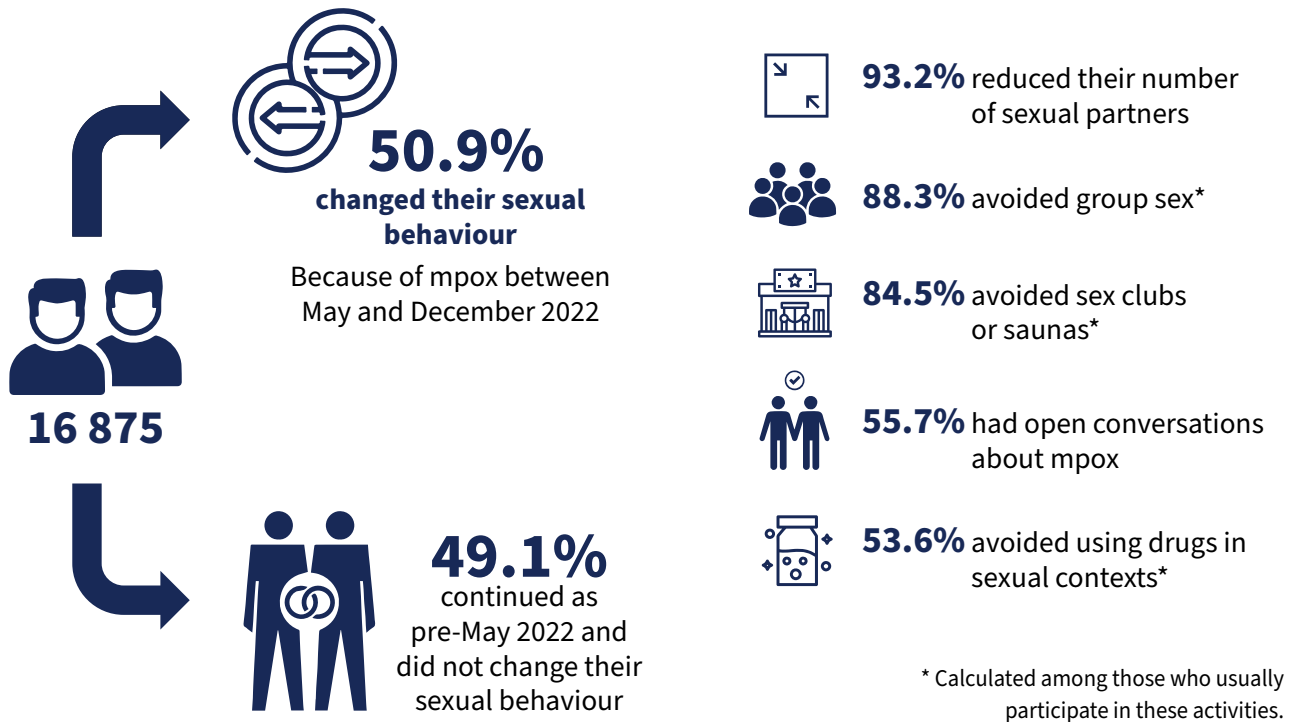
One year after the outbreak was identified, communities were still making adaptive changes to their sexual behaviour: 35.5% of participants who changed their behaviour said they were still changing their sexual behaviour because of mpox concerns in May 2023 (Fig. 2). Among those who reversed the changes to their sexual behaviour, a decline in transmission (42.7%) and having mpox vaccination (29.7%) were the most common reasons.

Of the 16 875 participants, 79.8% said they would be willing to change their sexual behaviour if mpox transmission increased in their community, with 84.5% of these reporting that this would include reducing the number of sexual partners during a period of higher transmission. Among those who were unvaccinated, 71.6% said they would be willing to get vaccinated for mpox if transmission increased.

Table 2 shows the regional differences in the proportion of participants who reported changing their sexual behaviour. Adaptations to sexual behaviour occurred across all regions but were lower among participants in eastern Europe and the western Balkans. Communities in regions with access to vaccination were more likely to still be changing their sexual behaviour. Willingness to make adaptive changes to sexual behaviour if mpox were to increase was high in all regions.

Fig. 2. Adaptive changes in sexual behaviour because of mpox

Between May and December 2022



In May 2023

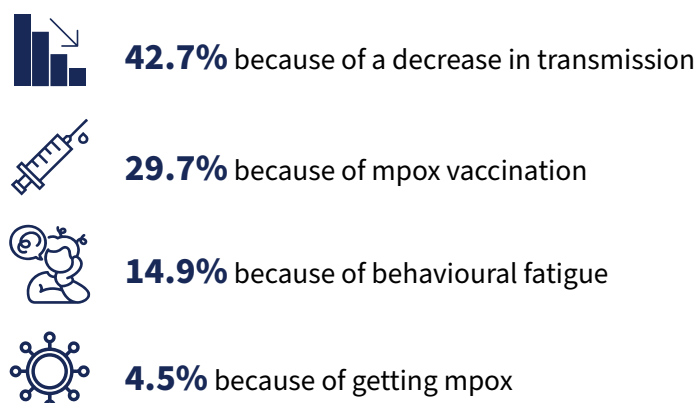
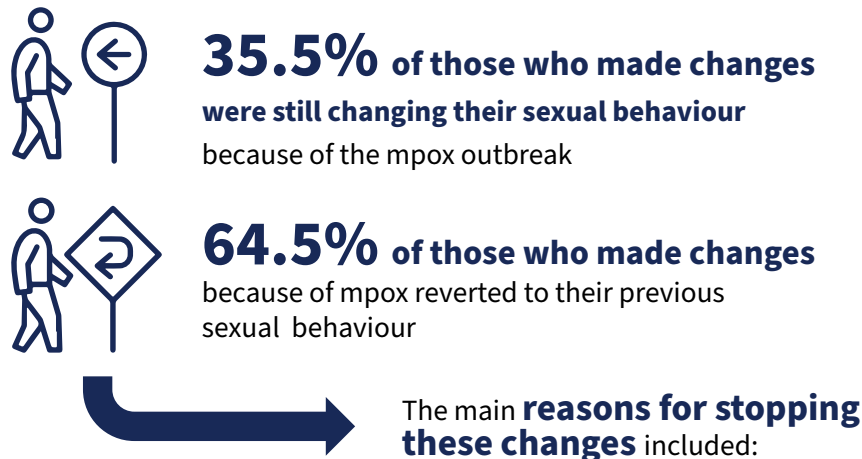


Table 2. Prevalence of changes in sexual behaviour, proportion still changing sexual behaviour and willingness to change sexual behaviour, by region

Region	Changed sexual behaviour because of mpox (May–December 2022)	Still changing sexual behaviour ^a (May 2023)	Willing to change sexual behaviour if mpox resurges
Western Europe	49.8%	23.1%	77.6%
Eastern Europe and the western Balkans	19.8%	42.4%	74.5%
United States and Canada	61.7%	21.7%	85.1%
Latin America	51.5%	56.4%	81.9%
Overall	50.9%	35.5%	79.8%

^a Calculated among those who changed their behaviour.

Experience of mpox illness

Participants who had a confirmed mpox diagnosis were asked to voluntarily provide feedback on their experience of illness in open text fields, leading to 164 answers. Rapid analysis of these data identified key themes on the physical and emotional experience of mpox.

- The physical experience of mpox was usually described as a mild and acute illness that included painful and itchy lesions, sores or rashes on various body parts (face, genitals, anus, chest and legs), fever, swollen lymph nodes, fatigue and rectal pain and inflammation (proctitis).
- Emotionally, participants reported distress because of fear of transmitting mpox to others, potential clinical complications and not being able to access adequate treatment and care and changes in their physical appearance that affected their body image and self-esteem.

Physically, it particularly affected me in the perianal area. I developed proctitis, which was very painful. Apart from that, I did not have many symptoms. Emotionally, I suffered from stigma and isolation, since everyone considered me a source of contagion.

Gay man, 18–25 years old, Mexico

- Most participants did not report long-term effects from mpox and fully recovered, although a minority of patients reported lasting scars and skin marks that at times led to feelings of shame and negative comments by new sexual partners, affecting their sex lives after recovery.

I feel embarrassed to have sex in bright light because of the marks on my body from mpox. I used to have a beautiful tan skin, but now I prefer dim light during sex.

Gay man, 35–44 years old, Peru

- Participants frequently mentioned disruption of daily life, work or social activities because of having to self-isolate, which led to emotional distress and feelings of loneliness. Some participants reporting losing their jobs or being outed as someone with mpox, or as gay men, bisexual men and other men who have sex with men, because of the duration of the isolation period.

Being on sick leave and isolated for a month and a half without being able to disclose the reason for my leave contributed to my dismissal at the end of 2022.

Bisexual man, 35–44 years old, France

- Many participants reported feelings of guilt or shame because of having mpox or its association with transmission via sexual contact between men and only shared their diagnosis with a limited number of people, especially if lesions or scars were not noticeable. Although most participants did not experience any form of discrimination, instances of discrimination in health care and workplace settings were reported.

I felt judged negatively by a pharmacist when I went to buy some creams and painkillers prescribed by the hospital. Upon seeing the prescription, the pharmacist started whispering, asking questions about my sexual orientation, sexuality and gender identity. I had questions about the medication, but I did not want to ask them because of the inappropriate remarks he made, such as “Are you gay?” and “Didn’t you use a condom?”

*Man who has sex with men,
18–25 years old, France*

Limitations

This survey was launched using dating applications frequently used by gay men, bisexual men and other men who have sex with men and trans and gender-diverse people. Nevertheless, the findings from this survey may not fully represent the experiences of everyone in these communities, especially those who do not use dating applications. In addition, people engaging with the survey and voluntarily participating may differ from those who did not.

The concepts discussed in the survey included mpox, sexual behaviour, HIV and drug use, all of which have different types of stigma attached to them. Although the survey was anonymous, some information reported through the survey may be subject to social desirability bias.

Finally, because of the time elapsed between the recall period (May–December 2022) and survey completion (May 2023), some participants may not fully or accurately recollect changes in sexual behaviour or its duration.

Key lessons

Lessons for risk communication and community engagement

Based on this survey among the most severely affected communities, risk communication and community engagement teams globally can incorporate some of the following lessons into any future responses to outbreaks transmitted sexually in these networks.

- Celebrate and acknowledge significant adaptations in sexual behaviour because of mpox among gay men, bisexual men and other men who have sex with men and trans and gender-diverse people during the 2022–2023 outbreak, recognizing that temporary behavioural change occurred as a reaction to real concerns about mpox affecting individual and community health.
- Understand that communities of gay men, bisexual men and other men who have sex with men and trans and gender-diverse people dynamically adapt their sexual behaviour in accordance with their own perceived risk for acquiring mpox, making risk-informed changes based on information on local mpox transmission rates and their own immunity status, whether from vaccination or naturally acquired immunity.
- Leverage widespread high level of willingness for uptake of protective behaviour in case mpox transmission resurges and continue to deliver targeted and non-stigmatizing messaging for gay men, bisexual men and other men who have sex with men and trans and gender-diverse people promoting temporary adaptations to sexual behaviour if needed.
- Recognize that lasting behavioural adaptation among the affected communities is, on its own, neither sustainable nor sufficient to eliminate mpox and that national governments and public health authorities in many countries need significant action to ensure timely and non-stigmatizing access to medical countermeasures, including testing and vaccination services.
- When engaging with affected communities, recognize that mpox can lead to significant emotional distress among those affected because of its physical symptoms, the disruption of daily activities as a consequence of isolation, sometimes including loss of income or employment, and stigma and discrimination that can intersect with homophobia, biphobia, transphobia and HIV-related stigma.
- Incorporate skin health as part of risk communication messaging for mpox in gay men, bisexual men and other men who have sex with men and trans and gender-diverse people, including acknowledging fear of skin marks or scars and their role in perpetuating mpox stigma and discrimination.
- Raise awareness among the general population to prevent and address stigma and discrimination in the workplace for people absent because of mpox or returning to the workplace after isolation and educate the health-care workforce to prevent and address stigma and discrimination in all health-care settings.

Conclusion

The cross-sectional survey provided valuable insight into the experiences of communities newly affected by mpox in 2022–2023 in Europe and the Americas, including gay men, bisexual men and other men who have sex with men, trans and gender-diverse people and sex workers. Since the potential for mpox transmission in these sexual networks is not limited to any specific geography, this insight is of interest to all regions.

The findings presented in this technical brief emphasize the need to increase access to mpox vaccination and diagnostics globally to eliminate human-to-human transmission without perpetuating global health inequalities. In addition, the survey findings highlight the opportunity to promote temporary and voluntary adaptations to sexual behaviour to respond to future increases in mpox transmission and protect these newly affected communities. Targeted risk communication and

community engagement strategies that reduce intersecting forms of stigma and discrimination should continue, incorporating findings from people’s experience with mpox. By understanding the experiences and needs of the affected communities, public health authorities, partners and civil society can tailor their efforts to effectively respond to future outbreaks and protect individuals and communities at risk.

Finally, this survey highlights the central role of geospatial networking applications in both facilitating sexual networks and reaching and engaging communities across many regions. Close collaboration with these applications is key for preparedness and response to emerging infections transmitted in these sexual networks, especially to support risk communication and community engagement.

References

1. Laurenson-Schafer H, Sklenovská N, Hoxha A, Kerr SM, Ndumbi P, Fitzner J et al. Description of the first global outbreak of mpox: an analysis of global surveillance data. *Lancet Glob Health*. 2023;11:e1012–23.
2. Thornhill JP, Palich R, Ghosn J, Walmsley S, Moschese D, Cortes CP et al. Human monkeypox virus infection in women and non-binary individuals during the 2022 outbreaks: a global case series. *Lancet*. 2022;400:1953–65.
3. Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of monkeypox. Geneva: World Health Organization; 2022 ([https://www.who.int/news/item/23-07-2022-second-meeting-of-the-international-health-regulations-\(2005\)-\(ihr\)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox](https://www.who.int/news/item/23-07-2022-second-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox), accessed 6 July 2023).
4. Fifth meeting of the International Health Regulations (2005) (IHR) Emergency Committee on the Multi-Country Outbreak of mpox (monkeypox). Geneva: World Health Organization; 2023 ([https://www.who.int/news/item/11-05-2023-fifth-meeting-of-the-international-health-regulations-\(2005\)-\(ihr\)-emergency-committee-on-the-multi-country-outbreak-of-monkeypox-\(mpox\)](https://www.who.int/news/item/11-05-2023-fifth-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-on-the-multi-country-outbreak-of-monkeypox-(mpox)), accessed 6 July 2023).
5. Risk communication and community engagement (RCCE) for monkeypox outbreaks: interim guidance, 24 June 2022. Geneva: World Health Organization; 2022 (<https://apps.who.int/iris/handle/10665/357184>, accessed 6 July 2023).
6. Public health advice for gay, bisexual and other men who have sex with men on the recent outbreak of monkeypox. Geneva: World Health Organization; 2023 (<https://www.who.int/publications/m/item/monkeypox-public-health-advice-for-men-who-have-sex-with-men>, accessed 6 July 2023).

World Health Organization

Global HIV, Hepatitis and Sexually
Transmitted Infections Programmes &
WHO Health Emergencies Programme

20 Avenue Appia
1211 Geneva 27
Switzerland

<https://www.who.int/hiv>
<https://www.who.int/health-topics/monkeypox>

