UK Health Security Agency

Mpox: technical assessment

27 October 2025

Contents

Summary

Since the last technical assessment on 19 December 2024:

- the epidemiology of clade I mpox may have changed with person-to-person transmission now occurring outside the African Region including amongst specific gay, bisexual and other men-who-have-sex-with-men (GBMSM) networks in at least 2 other WHO regions (EURO and PAHO)
- the probability of importation into the UK has increased from medium to high
- the risk of onwards transmission in the UK is likely to be controlled to some degree by the existing GBMSM vaccination programme and remains low to medium at present; however there are significant uncertainties in this assessment relating to the circulating virus properties, the groups at risk and the level and duration of immunity from natural infection or vaccine

1. Epidemiological update

In October 2025, health authorities in Spain, the USA, and the Netherlands reported small numbers of locally-acquired clade Ib mpox cases, among GBMSM, all with no travel history, indicating community transmission of clade Ib mpox in those countries. Spain reported a case of clade Ib mpox on 10 October 2025 in a fully vaccinated man, marking the first reported clade Ib mpox case amongst GBMSM in Europe (ECDC). On 17 October 2025, 3 unlinked clade Ib mpox cases among GBMSM were reported in California (CDPH). The Netherlands confirmed its first clade Ib mpox case the same day in an unvaccinated GBMSM individual (RIVM). One imported clade Ib mpox case has been reported from Belgium, in a male patient who identifies as GBMSM.

Three additional clade Ib mpox cases without travel history have been reported to ECDC, from Italy (2 cases) and Portugal (1 case). Information on these cases is currently limited. The dates of symptom onset of the cases reported by all countries are between 16 September and 7 October 2025. On 24 October 2025, the World Health Organization (WHO) updated its mpox data dashboard stating that community transmission of clade Ib mpox has been reported in the USA, Italy, Spain, Portugal, the Netherlands and Malaysia.

As of 20 October 2025, 16 clade Ib mpox cases have been reported in the UK, all in England. All but one case (an isolated case for which a possible exposure could not be ascertained) have been travel associated with links to countries with evidence of community transmission of clade Ib mpox. Transmission to close contacts in 2 UK households with no further onward spread has been observed, resulting in 4 secondary cases; 3 of which received vaccination 10 days post-exposure and before testing positive. Most clade Ib mpox cases have a known exposure through sexual contact overseas. None of these cases have been reported amongst GBMSM. Cases of clade Ib mpox in the UK have generally not reported severe symptoms. 8 out of 16 cases were managed in hospital, as per established pathways when clade I mpox was considered a high consequence infectious disease (HCID) in the UK. Clade I mpox was derogated as a HCID in February 2025, following which subsequent clade Ib mpox cases have been managed in the community.

The global outbreak of clade II mpox virus (clade IIb) was predominantly among GBMSM. In England, the outbreak was first recognised in May 2022, increasing rapidly to a peak exceeding 300 cases a week in July 2022 and declining to relatively low levels by the end of the year (UKHSA (i)). There were 3,553 cases reported by the end of 2022 (UKHSA (ii)). Low and steady levels of Clade IIb mpox continue to occur in England with around 20 cases per month diagnosed and reported in 2025. This pattern is similar to a number of other countries in Western Europe, Canada and the USA (WHO). Throughout, cases have been higher in London than other parts of the country.

2. Hazard characterisation

The virus in recent non-travel related cases outside the African Region has been reported as clade Ib MPXV. Genomes are currently unavailable to determine the relationship to previous clade Ib viruses.

2.1 Clade Ib mpox severity

According to data from the WHO, case fatality rate (CFR) is lower (~0.2-0.4%) in clade Ib mpox only affected provinces (South and North Kivu) when compared to clade Ia mpox endemic provinces (~3.2%) of the Democratic Republic of the Congo (DRC) (WHO). Published estimates of the CFR for clade Ib mpox from the DRC are between 0.5 and 1.4% (Vakaniaki and colleagues, Masirika and colleagues (i), Brosius and colleagues, Malembi and colleagues) in studies carried out in individuals who were hospitalised. However, CFRs may be affected by demographic factors, access to healthcare, reporting practices, comorbidities, and coincident infections, so it is likely that these CFRs may overestimate the overall CFR.

As of 12 October 2025, in relation to clade Ib mpox, one death has been confirmed in Burundi from over 4,000 cases in surveillance data (CFR <0.1%) (WHO, Nzoyikorera and colleagues). Uganda has reported 50 deaths from over 8,000 cases in surveillance data (CFR 0.6%) and Kenya has reported 10 deaths from over 600 cases in surveillance data (CFR 1.4%) (WHO). No deaths have been reported among the approximately 130 clade Ib mpox cases reported outside of the African Region.

Estimates of CFR by age and risk groups are limited. Two preprint papers have reported cases of adverse maternal and neonatal outcomes in clade Ib mpox cases in South Kivu, DRC. Among 670 suspected mpox cases admitted to Kamitunga Hospital between September 2023 and June 2024, there were 7 deaths: 3 in children under the age of 5 years old, one as a result of an intra-uterine infection and 2 neonatal infections. 8 of 14 pregnant women suffered foetal losses (Masirika and colleagues (ii)). Separately, pregnancy outcomes were also reported in 10 cases admitted to Kamitunga Hospital between March and July 2024: 3 live births, 4 miscarriages, and 3 neonatal deaths (it is possible these 2 preprints have reported on outcomes of the same cases) (Murhula and colleagues).

In summary, available data suggests that the CFR for clade Ib mpox is lower and closer to that of clade IIb mpox than previous reports of clade Ia. However, CFR estimates by age and risk group remains limited and absent outside Africa and the assessment remains low confidence overall. Severe outcomes associated with clade Ib mpox infection have been reported in pregnant individuals (foetal loss) and those coinfected with HIV, highlighting possible risk groups.

2.2 Clade Ib mpox transmissibility

Clade Ib mpox exhibits sustained human-to-human transmission, with outbreaks spreading across provinces in the DRC and other countries in central and east Africa. The current reports are the first evidence of sustained person-to-person transmission in European countries and the USA. There is evidence of sexual transmission in heterosexual and now also GBMSM networks, as well as non-sexual contact transmission, with high child infection rates in parts of the African Region. Given the different contexts, it is not reliable to compare transmissibility between mpox clades at present. Clade Ib mpox has also been detected by PCR in placenta and breast milk, as have other clades of mpox, suggesting a possible transmission route to foetuses and infants.

2.3 Mpox vaccination and immunity

Estimates of real-world effectiveness for MVA-BN (Modified Vaccinia Ankara – Bavarian Nordic) vaccine in preventing mpox infection have mainly been generated during the 2022 mpox outbreak. In meta-analyses, vaccine effectiveness was estimated to be 74% to 78% and 83% to 84% for one and 2 doses of MVA-BN, respectively (Pischel and colleagues, Mason and colleagues, Berry and colleagues). A further study in England after the 2022 mpox outbreak reported similar estimate of vaccine effectiveness (82%) (Charles and colleagues). There is also evidence that pre-exposure vaccination may modify disease and thus reduce more severe presentations. Vaccine effectiveness against hospitalisation was estimated to be 67% of any dose of MVA-BN (Pischel and colleagues). Post exposure vaccination with MVA-BN has likely low effectiveness in preventing infection unless given very quickly after exposure, but may attenuate severity of illness (Pischel and colleagues).

There are no published studies on real-world vaccine effectiveness against clade Ib mpox but it is expected that MVA-BN will confer protection. In a small study in England, low levels of neutralising antibodies against mpox clades Ib and IIb were detected in healthy adults vaccinated with 2 doses of MVA-BN (Sheridan and colleagues).

There is accumulating evidence of durability of immunity of MVA-BN. Neutralising antibodies have returned to pre-vaccination baseline levels 24 months after vaccination; however, boosting with an additional dose of MVA-BN elevated neutralising antibody levels to peaks 10-fold or higher than those seen after one and 2 doses. This anamnestic response to boosting supports the presence of immunological memory induced by primary MVA-BN vaccination. Increasing the interval between the 2 MVA-BN vaccine doses may lead to a higher peak antibody response which remains above the one-dose peak for more than 10 years (Berry and colleagues). This is consistent with modelling used by the Joint Committee on Vaccination and Immunisation (JCVI), where the observed data in 2023 fitted with a longer duration of protection – at least 5 years for one dose and 10 years for 2 doses of vaccine (Zhang and colleagues). The need for booster doses has not been established.

In response to the outbreak in 2022 mainly affecting GBMSM, vaccination as part of outbreak response was introduced in the UK, targeting GBMSM at highest risk of exposure in sexual health services. On the advice of JCVI, government approved a pre-exposure vaccination programme for eligible GBMSM which was introduced in sexual health services with a phased roll-out from September 2024 with full nationwide implementation by August 2025.

According to NHS England data, since 1 January 2022 to August 31 2025, 154,224 doses of mpox vaccine have been administered in sexual health services in England, mainly to GBMSM, comprising 94,088 first and 60,136 second doses (NHS). Over half of the doses (64,664 and 20,360 first and second doses, respectively) were given in 2022 as part of outbreak response, with around two-thirds in London. Some doses were fractionated (allowing up to 4 doses per standard single dose vial) and given intradermally. Low levels of vaccination continued in London and Manchester and in the Devolved Administrations since 2023. An ongoing programme to offer vaccine opportunistically to eligible GBMSM in sexual health services across the country was formally launched in August 2025. Annual numbers of first doses given in sexual health clinics since 2022 have been 15,176 in 2023, 9,607 in 2024 and 4,641 in 2025 (to 31 August) (but note likely underreporting in 2024 to 2025). Second dose completion is almost 80%. While direct estimates of coverage in the eligible GBMSM population at risk are not possible, modelling and surveys indicate uptake of at least one dose as 62% (self reported uptake in November and December 2023 in RiiSH) (Mullen and colleagues), and 87% (UKHSA study using data from July 2022 to December 2023) (Charles and colleagues); the latter uptake estimate likely includes GBMSM at lower risk of exposure.

Within the USA, approximately 1.2 million mpox vaccine doses were administered between 22 May 2022 and 31 January 2023 (latest data available), corresponding to 23% of the population at risk being fully vaccinated nationally (CDC). Within California, 68% of the at risk population had received at least one dose of vaccine, whilst 43% of the at risk population received 2 doses. In the Netherlands, a primary preventive vaccination programme started in July 2022, targeting those at highest risk of infection. Between 25 July 2022 and 30 April 2023, 29,851 vaccine doses were administered. The overall uptake of vaccination (at least one dose received) was 45.8%, with 35.4% being fully vaccinated by 30 April 2023 (Haverkate and colleagues). A targeted mpox vaccination programme for higher risk groups was launched in the Netherlands on 14 April 2025. Spain began vaccination against mpox in June 2022 with MVA-BN; initially providing post-exposure prophylaxis for close contacts, before expanding to pre-exposure prophylaxis for high risk groups (Ministerio de Sanidad (i)). In 2024, an update was issued which continued to recommend vaccination (2 doses) for GBMSM with higher risk of exposure to mpox (Ministerio de Sanidad (ii)). Vaccine uptake or coverage data among the eligible cohorts is not readily available for Spain.

3. Current situation and risk to the UK

Table 1. Situational assessment: risk to the UK from an overseas outbreak and current risk to UK population

Situational assessment	
Risk of importation	There is a **high** risk of importation of clade I mpox into the UK. This is because community transmission of clade Ib mpox has been reported in countries with strong travel links to the UK (including European countries and the USA). There are reports of clade Ib mpox cases amongst GBMSM in European countries and the USA without known travel histories or epidemiological links to confirmed cases, indicating undetected transmission within those countries.
Risk of onwards transmission in UK	There is a **low to medium** risk of onwards transmission in the UK should importation occur. Indicators suggest that the outbreak is most consistent with scenario B, however the risk of onwards transmission in the UK is likely to be controlled to some degree by the existing vaccination programme, which is the pattern seen with current clade II importation. There are uncertainties in this assessment relating to the circulating virus properties and the level of immunity from natural infection or vaccine.
Risk of acquisition in UK	The risk of acquisition in the UK is considered **medium**. For the general UK population, exposure is unlikely. However, we expect continued importation and some degree of onwards transmission. Individual risk varies depending on behaviour and setting. People in high-contact environments may face a higher risk if mpox is introduced, particularly those involved in close physical or intimate contact, including sexual networks with multiple partners.
Risk of acquisition to UK population travelling to affected areas	Transmission requires direct contact with someone who is infectious or a contaminated fomite. The highest risk transmission modes appear to be sexual or household. For most general short-term travellers therefore, the risk will be **Low**, however for those staying within households in areas directly affected by outbreaks, with sexual contacts, or exposed to cases (for example, through occupation), the risk is **Medium**.

Table 2. Criteria underpinning risk ratings

Risk level	Very low	Low	Medium	High
Probability of Importation into the UK	A single case or localised outbreak in another country, well defined and monitored, with no evidence of sustained community transmission.	Community transmission in another country or countries; these countries have limited travel links to the UK.	Community transmission in another country or countries; including countries with stronger travel and diaspora links to the UK and/or cases exported to intermediate locations that may increase the risk to the UK.	Community transmission in multiple countries; strong travel links to the UK.
Potential for onwards transmission in the UK once introduced	NA	Disease is likely to be contained at a small, localised outbreak (for example, household), see scenario A.	Disease is likely to cause transmission in the UK in specific risk groups, see scenario B.	Disease is likely to cause widespread population transmission in multiple groups, see scenario C.
Risk of acquisition in the UK	Human exposure to the pathogen in the UK is very unlikely; there is no suggestion that importation or transmission are occurring.	Human exposure to the pathogen in the UK is unlikely; it is possible that importation is occurring.	Human exposure to the pathogen in the UK is possible, limited to a specific risk groups.	Human exposure to the pathogen in the UK is possible and not limited to a specific risk groups.
Risk of acquisition to UK population travelling to affected areas	Infection is limited to a single localised outbreak; travellers can avoid any exposure.	Infection is spreading in clearly delineated areas outside the UK with known modes of transmission; it is generally easy for travellers to avoid exposure.	Infection is transmitting widely in some groups **or** with multiple or unknown modes of transmission; it is difficult to avoid exposure, or some activities undertaken by travellers may have exposure risks.	It is not possible to avoid exposure.

4. Scenarios and indicators for clade Ib mpox

UKHSA published 3 global scenarios to help inform planning assumptions that illustrate how an outbreak in the UK might develop with a high, moderate or low transmissibility virus, where transmissibility is considered as the probability of any given susceptible contact becoming infected (see Appendix 1).

Since the last technical briefing published on 19 December 2024, indicators continue to be assessed as being most compatible with Scenario B based on the transmissibility of the virus. While our assessment is that globally we are in Scenario B (a controlled epidemic), in Africa initial transmission is among adults driven by close contact, including sexual contact, with a shift to younger age groups where initial clusters are not controlled. It is uncertain whether community transmission is self-sustaining without sexual transmission seeding outbreaks.

Since December 2024, the geographical footprint of the outbreak has expanded in Africa, and an increasing number of countries outside of Africa have reported cases. There has been an increasing evidence base on several key points:

Expansion of outbreak in Africa

Sustained person-to-person transmission and geographic expansion of the outbreak in Africa has occurred in the last 12 months. In Africa, 16 countries have reported at least one confirmed case of clade Ib mpox in the last 12 months, and the WHO is reporting current community transmission of clade Ib mpox in 9 countries in Central and East Africa (WHO). In countries with community transmission, close interpersonal contact in households which disproportionately affects children is an increasing is an increasingly important driver (Kamadjeu and colleagues) (Compatible with Scenario B, does not rule out scenario C).

Increase in number of countries outside of Africa reporting cases

Outside of Africa, the number of countries reporting imported clade I mpox cases has increased from 3 countries in October 2024 to 22 countries in October 2025. According to the WHO, 10 countries outside of Africa have reported cases in the last 6 weeks. The majority of imported cases have travel histories to areas with known community transmission in Africa, often reporting sexual contact as an exposure route (Compatible with Scenario A).

Undetected transmission outside of Africa

There is an increasing trend of cases detected outside Africa with travel links to countries outside of Africa, both where confirmed cases have been reported (Pakistan, Oman, Thailand, the UAE), and in 2 countries where no confirmed cases have been reported (Lebanon and

Nepal). The UAE has emerged as the second most frequently travel-linked country globally (second to Uganda), suggesting undetected transmission in UAE (Compatible with Scenario B).

Limited transmission outside of Africa, but recent transmission detected in GBMSM community

Reported secondary transmission outside of Africa was previously limited. Of the 114 clade Ib mpox cases reported to the WHO (data as of 10 October 2025), 76 were primary imported cases, 15 of which led to further transmission, resulting in 38 secondary cases, with no known tertiary transmission. In the UK, there has been limited secondary transmission reported in household settings. Additionally, there has been one isolated case reported with no known travel history or epidemiological link to another clade Ib mpox case. The possible exposure of this case could not be determined.

On 10 October 2025, Spain reported its first case of locally acquired clade Ib mpox, which was also the first case reported in the GBMSM community in Europe. On 17 October 2025, the USA reported 3 unrelated clade Ib cases in California, all part of the GBMSM community. There has also been one case reported in a person from the GBMSM community with no travel history in the Netherlands. This indicates that undetected transmission within the GBMSM community in the US and Europe is highly likely to be occurring (Compatible with Scenario B).

The indicators are currently **most compatible with scenario B**, a virus with moderate transmissibility (similar to or slightly exceeding the transmissibility of the clade II outbreak).

4.1 Indicator assessment

A set of indicators has been developed to support assessment of this data. On the basis of this data the indicator assessment has been revised as shown in Table 3.

Indicators are signals or signs that certain conditions or events are present, but their occurrence can often result from multiple causes or align with various scenarios, not solely the scenario under consideration. An indicator may be necessary for a scenario but is rarely sufficient on its own to confirm it. Indicators must be analysed in context, alongside other information, to determine which scenario is most likely to be occurring.

A confidence rating is assigned to the assessment of each indicator. High confidence means that uncertainties remaining should have negligible or no effect on the indicator assessment. Moderate confidence means that uncertainties remaining could expose the indicator assessment to change. Low confidence means that critical uncertainties remain which could invalidate the indicator assessment.

Table 3. Indicator monitoring and assessment

Indicator	Supports scenario	Current assessment	Confidence
Importation to new countries, without onwards transmission	A	Met, exceeded	High
A high proportion of cases are in defined risk groups with very high contact connections	A	Highly likely	Moderate
A high proportion of cases are in sexual networks	B	Highly likely in some parts of the outbreak	Moderate
There is a high growth rate in sexual networks which is not demonstrated outside these networks	B	Likely	Low
New cases do not have detectable link to known outbreak (for example travel)	B	Met	Moderate
In vitro, in vivo or case characterisation data demonstrating characteristics related to transmissibility with findings similar to clade IIb.	B	Realistic possibility	Low
A higher overall growth rate than the maximum in 2022 or very high growth in population groups linked by touch (for example young children)	C	Realistic possibility	Low
A high secondary attack rate in households with an ability to reduce touch and clean environment	C	Unlikely	Low
Epidemiological evidence of non-sexual, non-household transmission (an early signal may be the route of exposure of exported cases)	C	Unlikely	Low
Evidence of respiratory transmission outside households	C	Highly unlikely	Low
In vitro, in vivo or case data demonstrating characteristics compatible with higher transmissibility than clade IIb.	C	Realistic possibility	Low
Frequent outbreaks in settings without close touch or sexual contact	C	Highly unlikely	Low

4.2 Future assessment

It is highly likely that the number of imported cases outside of Africa will increase in the next 6 months (moderate confidence). There has been a deterioration in the epidemiology of the outbreak in Africa in the last 12 months. The number of countries with community transmission of clade I mpox has increased from 1 to 9 countries, some of which have greater connectivity to Europe (For example, Uganda and Kenya).

It is likely there will be an increase in secondary transmission and larger outbreaks are likely to occur in at risk populations outside of Africa in the next 6 months (low confidence). There are signals that there may be increasing transmission outside of Africa, including possible undetected transmission in countries. Additionally, there is evidence of community transmission of clade I mpox within the GBMSM community.

Appendix 1. Scenarios

These scenarios are an update to those previously published in mpox technical briefing 10.

Scenario A. Incursions and small clusters of cases

- Clade Ib MPXV is transmissible enough to spread effectively within very close contact settings and some highly connected sexual networks. This allows it to propagate in its current location and potentially other areas of the world where there are equivalent conditions. At this level of transmissibility, international sexual and close contact networks will not be sufficient to sustain a widespread global outbreak.

- It is highly likely that imported cases will occur in the UK, but they will be detected, and the low transmissibility of the virus means that they can be controlled by isolation of cases, contact tracing, post-exposure vaccination and quarantine of contacts. Where index cases are not detected, there may be small transmission clusters that would not be sustained. UK population immunity will not factor into this scenario as transmission will terminate regardless of immunity. A package of advice at the border to travellers from affected areas, aircraft declaration, and general messaging in immigration may help to identify imported cases or to facilitate their presentation to healthcare. This supports containment and reduces small clusters. Pre-travel advice and vaccination of deployed healthcare workers reduces the number of importations to a lesser extent.

Scenario B. A controllable epidemic in high contact sexual networks

Globally:

- Clade Ib is as transmissible or slightly more transmissible than clade IIb, which caused the 2022 outbreak.

- It spreads efficiently within high-contact sexual networks but is not transmissible enough to spread more widely into other population groups. The outbreak is not self-sustaining without a sexual transmission component.

- Transmission is primarily through gay, bisexual and other men who have sex with men (GBMSM) and heterosexual individuals with high numbers of sexual partners including sex workers. There are superspreader events internationally at sex tourism destinations.

- Non-sexual transmission does occur sporadically, for example in households or other settings with close contact (schools, prisons). Most cases are adults, although limited onwards transmission means that small numbers of children are affected, largely due to household transmission.

In the UK:

- By the time cases are detected in the UK, importation will be occurring and some degree of transmission may have occurred depending on context.

- A high proportion of GBMSM with high numbers of sexual partners have natural or vaccine-mediated immunity from the clade IIb outbreak. While this level of immunity is likely to allow some breakthrough infections, these should not manifest as severe disease in immunocompetent individuals.

- There is very little prior immunity in heterosexuals with high numbers of partners, including sex workers. There will be some older individuals vaccinated against smallpox (pre-1971) who are also likely to retain some protection against severe disease if not immunosuppressed by other conditions. There are clusters of infections in closed settings including schools and early years settings, care homes, prisons and places of detention that can be effectively controlled by contact tracing, quarantine of contacts, and post-exposure vaccination. Most cases are adults, although limited onwards transmission means that small numbers of children are affected with potential for severe disease in young children. It is reasonable to assume that a similar-sized outbreak would occur in the UK compared to the global clade IIb outbreak with a potential increase in severity. It is likely that this would need to be managed more widely in the NHS than within infectious diseases services. If there were larger numbers of children affected, paediatric services may have pathway and capacity challenges; consideration will also need to be given to clinical pathways for pregnancy and the immunocompromised. Vaccination of sex workers and heterosexuals with high number of sexual partners, in addition to GBMSM, reduces transmission, however targeting vaccination at these individuals will be significantly more difficult than the GBMSM community who are engaged with sexual health services through regular sexually transmitted infection (STI) testing, HIV PrEP (Pre-Exposure Prophylaxis) and other regular vaccination programmes.

- Contact tracing is enhanced and ring vaccination of close contacts of cases, and potentially contacts of contacts, occurs around clusters identified in schools, hospitals, care homes and other closed settings, limiting onwards spread. Highly accessible testing which allows individuals to access diagnosis conveniently, rapidly, and potentially remotely (for example postal polymerase chain reaction (PCR) kit) helps to reduce transmission. Rapid diagnostic home sampling kits with sufficient sensitivity may have a role in control if they can be developed and are acceptable for use.

Scenario C. Community transmission in general population through close contact

Globally:

- There is considerable uncertainty on whether it is possible for mpox to be more transmissible than experienced in 2022, however this possibility should not be discounted as a future scenario in this or other potential emergent mpox outbreaks.

- Clade Ib has substantially increased transmissibility compared to the 2022 outbreak clade IIb virus. It spreads not only through very close contact including sexual contact but can also establish long chains of transmission through touch and possibly respiratory transmission in some circumstances. There is non-sexual transmission that is sufficiently effective to drive multiple outbreaks in household and other close-contact settings and groups (for example early years childcare and some school settings, care homes, hospitals, prisons). Sexual transmission may remain an important driver of the outbreak, or touch borne transmission may be successful enough to drive the outbreak entirely. Wider community transmission occurs. Chains of transmission would be difficult to control through close contact isolation and post-exposure vaccination. Depending on the level of transmissibility and the ease with which infections can be identified, this may result in anything from difficulty to control outbreaks in specific settings such as schools and hospitals, or more widespread community transmission in population groups with high degree of touch contact, such as early years school age children and the elderly in care settings. In many countries, including the UK chains of transmission are established before the identification of the first cases. A wide demographic group is affected early. Existing population immunity has little effect on transmission. In the UK, 0.14% of the population were vaccinated in response to the 2022 outbreak; outside this group there is almost no immunity in those born after 1971. Older adults may have some residual immunity through smallpox vaccination, of uncertain effect.

- Standard public health measures such as contact tracing, and quarantine may have limited impact particularly if there is a high level of asymptomatic or pre-symptomatic transmission. Vaccination will need to be prioritised to those at risk of severe disease and healthcare workers, until a global supply is available; alternative vaccines using different technology will require large scale clinical trials and production. Response in the NHS and public health will require large scale surge plans, especially if there is a significantly higher case fatality rate in children and adults than is observed with clade IIb. Where there is significant morbidity or mortality, public health and social measures to reduce spread may be required while pharmaceutical (for example new vaccines or increased vaccine supply of current vaccines; effective therapeutics to use as treatment and post exposure prophylaxis) and non-pharmaceutical interventions (for example rapid diagnostic home tests) are scaled for a global response.

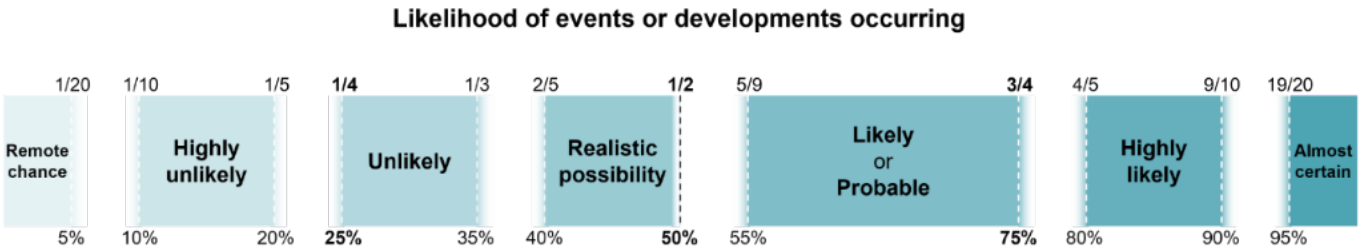
Appendix 2. Explaining uncertainty

We use 2 frameworks to describe different but related aspects of uncertainty in this intelligence assessment:

1. Probability yardstick

We use this standard set of language in probabilistic judgements to describe our assessed likelihood that a statement is true or that an event will occur, is occurring or has occurred.

Probability yardstick



2. Analytical Confidence Ratings (AnCRs) and statements

We use these ratings, which are based on a standard evaluation criteria, to make clear the strengths and limitations of the key judgements made. Particularly in the context of forward looking judgements, analytical confidence also explains the susceptibility of the judgement to change. Confidence ratings and statements can be used by the readers of an assessment to evaluate how much weight they should put on assessments when making decisions. They flag up key gaps in our knowledge, note factors beyond our control and identify where we can strengthen assessments to better inform future decision-making.

AnCR definitions

Analytical confidence	Justification
High	Uncertainties remaining should have negligible or no effect on the key judgements.
Moderate	Uncertainties remain that could expose the key judgements to change.
Low	Critical uncertainties remain that could invalidate the key judgements.

Clearly communicating uncertainty allows customers to take it into account when making decisions based on our assessment.

References

Berry and colleagues. 'Predicting vaccine effectiveness for mpox' Nature Communications 2024: volume 15, issue 1, page 3,856

Brosius and colleagues. 'Epidemiological and Clinical Features of Mpox during the Clade Ib Outbreak in South-Kivu, Democratic Republic of the Congo: a Prospective Cohort Study' MedRxiv 2024

California Department of Public Health. 'Community Spread of Clade I Mpox Within California' 17 October 2025

Centre for Disease Control and Prevention. 'JYNNEOS Vaccine Coverage by Jurisdiction' 2024

Charles and colleagues. 'Mpox Epidemiology and Vaccine Effectiveness, England, 2023' Emerging Infectious Diseases 2024: volume 30, issue 10, pages 2,145 to 2,148

European Centre for Disease Prevention and Control. 'Communicable disease threats report. Week 42 11 to 17 October 2025' 2025

Haverkate and colleagues. 'Factors potentially contributing to the decline of the mpox outbreak in the Netherlands, 2022 and 2023' Eurosurveillance 2024: volume 29, issue 21

Kamadjeu and colleagues. 'Characterising household transmission dynamics of clade Ib mpox in Burundi: a prospective cohort study' The Lancet Infectious Diseases 2025

Malembi and colleagues. 'Clinical presentation and epidemiological assessment of confirmed human mpox cases in DR Congo: a surveillance-based observational study' Lancet 2025: volume 405, issue 10490, pages 1,666 to 1,675

Masirika and colleagues (i). 'Ongoing mpox outbreak in Kamituga, South Kivu province, associated with monkeypox virus of a novel Clade I sub-lineage, Democratic Republic of the Congo, 2024' Eurosurveillance 2024 14: volume 29, issue 11, page 2400106

Masirika and colleagues (ii). 'Mapping and sequencing of cases from an ongoing outbreak of Clade Ib monkeypox virus in South Kivu, Eastern Democratic Republic of the Congo between September 2023 to June 2024' medRxiv 2024 p2024.09.18.24313835

Mason and colleagues. 'MVA-BN Vaccine Effectiveness: A Systematic Review of Real-World Evidence in Outbreak Settings' medRxiv. 2024

Ministerio de Sanidad (i). 'Vacunas y Programa de Vacunación, Viruela M (mpox)' (viewed 23 October 2025)

Ministerio de Sanidad (ii). 'Protocolo para la detección precoz y manejo de casos de mpox en españa' (viewed 23 October 2025)

Mullen and colleagues. 'Mpox vaccination uptake in a UK community sample of gay, bisexual and other men who have sex with men (GBMSM) the year following the 2022 clade IIb mpox outbreak' Sexually Transmitted Infections 2025: 101, 2

Murhula and colleagues. 'The First Observational Study on Clade Ib Mpox Transmission and Disease Severity in South Kivu' Lancet preprints 2025

NHS. 'Vaccinations: mpox' 2025

Nzoyikorera and colleagues. 'Monkeypox Clade Ib virus introduction into Burundi: first findings, July to mid-August 2024' Eurosurveillance 2024: volume 29, issue 42, page 2400666

Pischel and colleagues. 'Vaccine effectiveness of 3rd generation mpox vaccines against mpox and disease severity: A systematic review and meta-analysis' Vaccine 2024: volume 14, 42, issue 25, page 126053

RIVM. 'Current information about mpox' National Institute for Public Health and the Environment 2025

Sheridan and colleagues. 'Monkeypox virus-neutralising antibodies detected against Clade Ib and Clade IIb in healthy individuals following MVA-BN vaccination' medRxiv 2025

UKHSA (i). 'Investigation into monkeypox outbreak in England: technical briefing 8' 2022

UKHSA (ii). 'Mpox outbreak: epidemiological overview, 9 October 2025' 2025

Vakaniaki and colleagues. 'Sustained human outbreak of a new MPXV clade I lineage in eastern Democratic Republic of the Congo' Nature Medicine 2024: volume 13, 1 to 5

WHO. 2022-25 ‘Mpox Outbreak: Global Trends’ World Health Organization, 2025 (viewed 21 October 2025)

Zhang and colleagues. ‘Cost-effectiveness of vaccination strategies to control future mpox outbreaks in England: a modelling study’ The Lancet Regional Health 2025: Europe 55, 101364

About the UK Health Security Agency

UK Health Security Agency (UKHSA) prevents, prepares for and responds to infectious diseases, and environmental hazards, to keep all our communities safe, save lives and protect livelihoods. We provide scientific and operational leadership, working with local, national and international partners to protect the public's health and build the nation's health security capability.

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