## Short notes for clinicians

## HHV-screening in deceased organ donation

**These are short notes to assist communication with patients; the suggested follow up protocol for recipients is shown on the last 3 pages.**

### The virus

Human herpes virus type 8 (HHV-8) belongs to the Herpesviridae family of viruses; other members of this family include Herpes simplex, Varicella zoster and Cytomegalovirus. Once infection occurs, HHV-8 remains latent, and most people will never experience any symptoms. Under immunosuppression, HHV-8 can reactivate and lead to the development of symptoms, most commonly Kaposi's Sarcoma (KS), a type of cancer that affects the skin and visceral organs. HHV-8 has also been linked to other conditions, such as primary effusion lymphoma, multicentric Castleman disease and Kaposi Sarcoma Inflammatory Cytokine Syndrome.

### Epidemiology

Unlike the other related viruses mentioned above, which are very common in the general population, HHV-8 infection is not very common in the UK. High endemicity areas such as sub-Saharan Africa may have seroprevalence rates greater than 50%. Some parts of the Mediterranean and Middle East are areas of intermediate prevalence, with 20-35% rates reported from Sicily, in Italy; other examples include Greece, Israel and Saudi Arabia. Non-endemic areas such as the USA and Western Europe report rates of 0 to 6%. In these regions, HHV-8 infection can be more commonly seen amongst men who have sex with men (MSM) and migrants from endemic regions. Where known, infection rates as high as 25-35% have been described among some MSM communities. Intravenous drug use is another route of transmission known to have gained significance in some non-endemic countries such as the USA. Seroprevalence data is lacking for many regions in the world.

### Screening for evidence of (asymptomatic) infection

Antibody tests are required to detect asymptomatic infection, but they are not commonly used nor are they readily available, and to date, they have mostly been used for research and epidemiological purposes. There are very few commercially available tests, and they must be carefully evaluated before use, given their highly variable performance. A commercially available antibody test has been extensively evaluated and has been used in the UK in the investigation of possible donor-derived transmission events; it has been used in the deceased organ donor screening program since 2023.

### Deceased organ donation and transplantation

Because the infection is uncommon in non-endemic countries such as the UK, diseases caused by HHV-8 are rarely seen in patients. In solid organ transplantation, a recipient can be affected by this virus if they already had the infection before receiving the transplant and the virus reactivates post-transplant, usually causing KS of the skin or the mucosa. An organ recipient may also become infected after the transplant and remain asymptomatic, develop self-limited, mild symptoms or develop KS at a later stage. Where the initial infection is acquired from the donor organ (primary infection derived from the transplant), there is a possibility of

more severe disease, as compared to reactivation of previously existing infection in a patient on standard immunosuppression, as we see with other herpesviruses. With screening in place, we have seen transmission through kidneys, lungs and livers, but significant disease has been noted mainly in liver recipients.

The exact determinants of HHV-8 transmission to recipients of organs from infected donors are not known; not all donors infected with HHV-8 transmit the virus. If transmission occurs, the virus may be controlled by the person's immune system, despite the immunosuppressive medications received post-transplant. There may be some non-specific signs and symptoms such as fever, fatigue, abnormalities in blood cell counts and liver function, which settle once the virus replication is controlled. As this virus causes life-long infection, it may reactivate at some point, months or years later, particularly under more significant immunosuppression. On the other hand, if the initial virus spread is not contained, it may go on to cause symptoms early post-transplantation (typically 1- 4 months), in the form of Kaposi sarcoma or other forms of disease that can affect the lymph nodes, the transplanted organ or other organs too. Non-neoplastic forms of HHV-8 disease such as Kaposi sarcoma inflammatory cytokine syndrome (KICS), should be suspected promptly to avoid late diagnosis.

## Post-implantation donor testing and recipient monitoring

At the present time, it is not possible to accurately test deceased donors before organ donation and transplantation have been completed. If an organ donor is screened for HHV-8 and is found to be antibody positive after transplantation, the recipient can be followed up virologically for evidence of acquisition of (donor-derived) infection, in the first place. Should transmission occur, virological and clinical monitoring is important, keeping low thresholds for investigating rapid or sustained increases in viral load or compatible disease presentation. Whenever possible, the HHV-8 related disease type must be determined to allow selection of appropriate therapeutic approaches. It is also possible that the blood tests show signs of infection (e.g., low and stable viral load measurements in blood, or occasional low level "blips") with absence of symptoms. This process is akin to the monitoring of other viral infections such as CMV and EBV for example. Illustrative follow up plans are shown later in this paper, aiming at detecting a newly acquired infection when the organ donor is found to be infected with HHV-8.

Regular monitoring and early detection of HHV-8-related symptoms allow appropriate diagnosis, with opportunities for treatment. Symptomatic primary infection in SOT recipients can have features that overlap with other conditions; hence a high level of suspicion must be maintained. These can include fever, night sweats, lymphadenopathy, effusions, hepatosplenomegaly, cytopenia and a picture of acute systemic inflammatory illness that can be mistaken for severe sepsis.

## Living donors and recipients

Decisions around introduction of new screening programs are complex and require a balanced approach between what is practically achievable (including appropriate test availability and resources), the expected benefits and potential risks.

For most centres, HHV-8-driven disease is extremely rare and when seen, it is mainly due to reactivation of pre-existing disease in the recipient, with largely manageable, non-fatal outcomes. Description of severe primary donor-derived infection come from our UK series and

some clusters published from other non-endemic countries. These observations have so far been largely linked to deceased donation, but we have had some cases linked to living donation too. Enhanced awareness of HHV-8 brought about by the introduction of testing in response to the severe outcomes seen in deceased organ donation should prompt closer surveillance and reporting of cases in recipients from living donors.

Screening of potential living organ donors and candidate recipients for HHV-8 serological status prior to organ donation and transplantation has been recommended by SaBTO in 2025, Consideration for selective screening was made but the decision was for universal screening.

**SaBTO initial position statement on HHV-8 can be found here:**
https://www.gov.uk/government/publications/sabto-virology-subcommittee-recommendations-on-kshv-infection (recommendations have been expanded, to include screening of prospective recipients and living donors. Publication of the updated position statement is awaited)

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# INF1746/2 – HHV-8 screening in organ donation

NHS Blood and Transplant

**Effective date: 02MAR2026**

## SURVEILLANCE OF RECIPIENTS WHERE THE ORGAN DONOR TESTS POSITIVE FOR HHV-8 ANTIBODIES AND DNA

**Important disclaimer: in the absence of national or international consensus guidelines, this algorithm is based on current available knowledge extracted from the scientific literature, experience gathered from previously investigated transmissions and outcomes from the UK donor screening program.**

**DONOR HHV-8 POSITIVE ++++ (ANTIBODY POSITIVE & DNA POSITIVE)**

This is the highest risk donor profile, with increased chance of transmission of infection
Recipient testing for primary infection: This is an indicative plan; it may be adapted due to changes in immunosuppression or clinical status. Primary aim is to make an early diagnosis and minimize risk of severe disease which is more often seen in donor-derived infection.
Exclusion of HHV-8 infection in the presence of compatible signs and symptoms remains important in SOT recipients, regardless of donor screening results.

RECIPIENT's BASELINE STATUS (determined on 1st post-transplant sample submitted for follow up) #1

Antibody POSITIVE = infection acquired before the transplant #1 #2

This is a lifelong infection. Possibility of reactivation/reinfection
Clinical monitoring, low threshold for investigations
There is no evidence on the utility of long-term PCR monitoring
Assess case by case or apply local protocol

**DNA measurements** for detection of reactivation /reinfection (modify according to intensity of immunosuppression and clinical status):

- Monthly for the first 3 months post-transplant, then at 6 months; clinical monitoring is most important, regardless of viral load.
- Consider continuation of PCR monitoring on a case by case, particularly during periods of significant increase in immunosuppression
- If viral DNA becomes detectable, trends in viral load and clinical correlation may be informative. Involve specialists.
- There is no evidence to support change in immunosuppression based on isolated, low level viral load in an otherwise well person.

Serology notes:
#1 Antibody test is applied to the first post-transplant sample received; a negative result is recorded as the baseline serostatus, and an archived pre-transplant sample will only be requested if this sample is not negative
#2. Inconclusive serology can be seen in about 4% of screened individuals, mostly due to high background fluorescence, interfering substances in end-stage organ failure or possible underlying auto-immune conditions, rendering interpretation difficult.

Antibody NEGATIVE = susceptible to HHV-8 infection #1 #2

*Surveillance required, high risk of **primary** infection*

Frequency and duration to be determined depending on individual requirements. Illustrative plan with minimum time points shown below. Discuss.

**Antibody measurements** for detection of seroconversion:
Post transplant month 1, 3, 12

**DNA measurements** for detection of 1ry infection viraemia (modify, e.g. according to intensity of immunosuppression, clinical status and use of anti-virals).

- Post-transplant month 1, 2, 3, 6, 9,12
- If transmission occurs, viral DNA is usually detectable within 3 months, commonly in the first month, but this can vary and can be missed. Undetectable DNA does not exclude infection.

**Documentation of infection**

- If infection is demonstrated, confirm and intensify surveillance due to possibility of progression to disease within the first 3-9 months, particularly in recipients of liver and lungs. Involve specialist (virologist/ID/oncologist/haematologist) at early stages.
- These are indicative timepoints, based on observed cases and may vary depending on individual circumstances.
- Review monitoring during relevant clinical events (e.g. rejection, change in immunosuppression, treatment for CMV, EBV)
- **High level of clinical suspicion must be maintained for the development of all forms of HHV8–related syndromes**

# INF1746/2 – HHV-8 screening in organ donation

NHS Blood and Transplant

**Effective date: 02MAR2026**

## SURVEILLANCE OF RECIPIENTS WHERE THE ORGAN DONOR TESTS POSITIVE FOR HHV-8 ANTIBODIES ONLY

**Important disclaimer: in the absence of national or international consensus guidelines, this algorithm is based on current available knowledge extracted from scientific literature, experience gathered from previously investigated transmissions and outcomes from the UK donor screening program.**

DONOR HHV-8 **ANTIBODY POSITIVE** (Antibody positive & DNA not detected)

Antibody positivity indicates infection status and transmission can occur despite undetectable viral DNA in blood.
Recipient testing: This is an indicative plan; it may be adapted to coincide with other time points when patients are reviewed clinically and samples are routinely collected, or due to changes in immunosuppression or clinical status. Primary aim is to make an early diagnosis and minimize risk of severe disease which is more often seen in donor-derived infection. Exclusion of HHV-8 in the presence of compatible signs and symptoms remains important, regardless of donor results.

RECIPIENT's BASELINE STATUS (determined on 1st post-transplant sample submitted for follow up)[#1]

Antibody POSITIVE = infection acquired before the transplant [#1 #2]

This is a lifelong infection. Possibility of reactivation/reinfection
Clinical monitoring, low threshold for investigations
There is no consensus on the utility of PCR monitoring
Assess case by case or devise a local protocol

**DNA measurements** for detection of reactivation /reinfection (modify according to intensity of immunosuppression and clinical status):

- Monthly for the first 3 months post-transplant, then at 6 months, to detect re-infection; clinical monitoring is most important, regardless of viral load.
- Consider continuation of PCR monitoring on a case by case, particularly during periods of significant increase in immunosuppression
- If viral DNA becomes detectable, trends in viral load and clinical correlation may be informative. Involve specialists.
- There is no evidence to support change in immunosuppression based on isolated, low level viral load in an otherwise well person.

Serology notes:
[#1] Antibody test is applied to the first post-transplant sample received; a negative result is recorded as the baseline serostatus and an archived pre-transplant sample will only be requested if this sample is not negative
[#2]. Inconclusive serology can be seen in about 4% of screened individuals, mostly due to high background fluorescence or possible underlying auto-immune conditions, rendering interpretation difficult.

Antibody NEGATIVE = susceptible to HHV-8 infection[#1 #2]

*Surveillance required, risk of primary infection*

Frequency and duration to be determined depending on individual requirements. Illustrative plan with minimum time points shown below. Discuss.

**Antibody measurements** for detection of seroconversion:
Post transplant month 1, 3, 12

**DNA measurements** for detection of 1ry infection viraemia (modify, e.g. according to intensity of immunosuppression, clinical status and use of anti-virals).

- Post-transplant month 1, 2, 3; 6, 9,12
- If transmission occurs, viral DNA is usually detectable within 3 months, commonly in the first month, but this can vary and can be missed. Undetectable DNA does not exclude infection.

**Documentation of infection**

- If infection is demonstrated, confirm and intensify surveillance due to possibility of progression to disease within the first 3-9 months, particularly in recipients of liver and lungs. Involve specialist (virologist/ID/oncologist/haematologist) at early stages.
- These are indicative timepoints, based on observed cases and may vary depending on individual circumstances.
- Review monitoring during relevant clinical events (e.g. rejection, change in immunosuppression, treatment for CMV, EBV)
- **High level of clinical suspicion must be maintained for the development of all forms of HHV8–related syndromes**

# INF1746/2 – HHV-8 screening in organ donation

NHS Blood and Transplant

**Effective date: 02MAR2026**

**PRECAUTIONARY SURVEILLANCE OF RECIPIENTS WHERE THE ORGAN DONOR HHV-8 ANTIBODY IS INDETERMINATE AND DNA NOT DETECTED**

**Important disclaimer: in the absence of national or international consensus guidelines, this algorithm is based on current available knowledge extracted from scientific literature, experience gathered from previously investigated transmissions and outcomes from the UK donor screening program.**

DONOR HHV-8 serostatus **INDETERMINATE** [#2] (**DNA not detected**)

**Precautionary recipient testing to be considered on a case-by-case basis by the transplant centre**: [#2] Less intense surveillance possible, given no transmission recorded with this donor profile. If opting for no routine virological surveillance, low threshold for triggering testing should be considered in all cases. This indicative plan may be adapted to coincide with time points when patients are reviewed clinically and samples are routinely collected, or due to changes in immunosuppression or clinical status. Exclusion of HHV-8 in the presence of compatible signs and symptoms remains important, regardless of donor results.

RECIPIENT's BASELINE STATUS [#1]

Antibody POSITIVE = infection acquired before the transplant [#1 #2]

Possibility of reactivation/reinfection
Clinical monitoring, low threshold for investigations
Assess case by case or devise local protocol

**DNA measurements** for detection of reactivation /reinfection (modify according to intensity of immunosuppression and clinical status):

- Monthly for the first 3 months post-transplant, then at 6 months, to detect re-infection; clinical monitoring is most important, regardless of viral load.
- Consider continuation of PCR monitoring on a case by case, particularly during periods of significant increase in immunosuppression
- If viral DNA becomes detectable, trends in viral load and clinical correlation may be informative. Involve specialists.
- There is no evidence to support change in immunosuppression based on isolated, low level viral load in an otherwise well person.

Serology notes:
[#1] Antibody test is applied to the first post-transplant sample received; a negative result is recorded as the baseline serostatus, and an archived pre-transplant sample will only be requested if this sample is not negative
[#2.] Inconclusive serology can be seen in about 4% of screened individuals, mostly due to high background fluorescence or possible underlying auto-immune conditions, rendering interpretation difficult.

Antibody NEGATIVE = susceptible to HHV-8 infection [#1 #2]

Surveillance optional, assess case by case. Risk deemed low. We have no recorded transmission with this donor profile, as in the absence of recent risks and undetectable DNA, the indeterminate antibody status may be due to false positivity.

Frequency and duration to be determined by individual requirements. Illustrative plan shown below. Discuss.

**Antibody measurements** for detection of seroconversion:
Post transplant month 1, 3, 6

**DNA measurements**[#] for detection of 1ry infection viraemia (modify, e.g. according to intensity of immunosuppression, clinical status and use of anti-virals).

- Post-transplant month 1, 2,3, 6
- If transmission is documented, viral DNA is usually detectable within 3 months, commonly in the first month, but this can vary.

**Documentation of infection**

- If infection is demonstrated, confirm and intensify surveillance due to possibility of progression to disease within the first 3-9 months, particularly in recipients of liver and lungs. Involve specialist (virologist/ID/oncologist/haematologist) at early stages.
- These are only indicative timepoints, based on observed cases and may vary.
- Review monitoring during relevant clinical events (e.g. rejection, change in immunosuppression, treatment for CMV, EBV)
- **High level of clinical suspicion must be maintained for the development of all forms of HHV8–related syndromes**