

## 1. Introduction and Who Guideline applies to

This document sets out the University Hospitals of Leicester (UHL) NHS guideline for the Safe Use of Ultrasound Gel. Ultrasound gel is available in both sterile and non-sterile preparations. Non-sterile gel has been associated with contamination and outbreaks of infection in various settings worldwide.

UKHSA (formerly Public Health England) has identified that a long-standing outbreak of *Burkholderia cepacia* is linked to a non-sterile ultrasound gel product used in hospitals in the UK and Ireland. *B. cepacia* is widespread in the environment and typically considered to be an organism of low virulence and an opportunistic pathogen, though has been associated with contaminated medicinal and hygiene products.

Cases spanned a wide age range and were predominantly hospitalised patients in England including individuals cared for in critical care settings. Most isolates (*B. cepacia* isolated from patient samples) were from sterile sites (i.e. blood, body fluids) or were otherwise considered to be invasive (e.g. retrieved from the lower respiratory tract). The nature of samples and available information indicated that there were a range of clinical presentations including some cases with serious illness. Although we are not aware of deaths attributed to *B. cepacia* infection in this outbreak, it is possible that it may have been a contributory factor for some patients.

*B. cepacia* was recovered from multiple samples of a single brand of ultrasound gel from Trusts from across the UK. Pulsed-field gel electrophoresis and whole genome sequencing indicated that gel and case isolates were closely related, consistent with a common source outbreak. The investigation highlighted issues in clinical practice and a lack of guidance on the safe use of ultrasound gels to mitigate risks associated with these products.

This document provides guidance on the safe use of ultrasound gel to reduce risk of transmission of infection. It has been in part adapted from guidance produced elsewhere and should be considered in the wider context of standard infection prevention and control precautions. Though patient safety is paramount, the environmental impact associated with adhering to this guidance needs to be considered. While evidence and expert consensus have been used to inform this guidance, local risk assessments could be used to augment these recommendations.

This policy applies to any clinicians and practitioners using ultrasound gel in their practice in healthcare settings, including:

- Any user such as sonographers, radiologists, intensivists, midwives, vascular access specialists, emergency department and medical clinicians, physiotherapists, nurses and health care assistants
- Healthcare providers (NHS and independent) of facilities providing ultrasound services

## 2. Guideline Standards and Procedures

### 2.1 Type of Gel to be used

**Sterile** ultrasound gel **must** be used in the following circumstances:

- For invasive procedures, i.e. any ultrasound guided procedure which involves passing a device through tissue such as intravenous line insertion or fine needle aspiration
- Where there is contact with or near to non-intact skin (any alteration in skin integrity such as rash or surgical wound, including umbilicus on neonates)

- Where there is contact with mucous membrane (e.g. for transrectal, intra-oral, ophthalmic procedures or transvaginal procedures). Sterile gel is to be used both inside and outside of the probe cover as integrity cannot be guaranteed
- For examinations on immunocompromised, neonatal intensive care or critically ill hospitalised patients (such as in high dependency settings). For further information on patient specifics please read UKHSA recommendations Appendix 2 (link below)
- Where an ultrasound examination is near to an in-dwelling invasive device such as suprapubic catheter or intravenous line
- In labour where there is a high likelihood of C-section or use of invasive instrumentation during delivery
- Where an invasive procedure is likely to be undertaken in the following 24 hours. This includes 'viewing or initial assessment' of a site by ultrasound prior to undertaking an (aseptic) invasive procedure (e.g. appendicitis scan, skin marking for drainage)

**Non-sterile** ultrasound gel may be used in the following circumstances:

- During low risk, general examinations on intact skin on non-immunocompromised patients

## 2.2 Safe use of ultrasound gel

**For both sterile and non-sterile gel use:**

- Healthcare workers should practice hand hygiene measures before and after the use of ultrasound gel
- Gel should be stored according to manufacturer's instructions in an area that is dry and away from potential sources of contamination
- Gel containers should be cleaned with an appropriate disinfectant wipe between patients (e.g. Clinell wipes)
- Gel containers should never be refilled
- Gel containers should be disposed of if damaged, soiled or out of date
- Gel should never be decanted from other bottles or larger containers

**For use of sterile ultrasound gel:**

- Ensure that only unopened sachets /containers that are labelled as 'sterile' are used.
- Sterile gels are **single use only** and once opened must not be re-used, either with other patients or stored and reused with the same patient
- Ensure that sterile gel is used both inside and outside the probe cover if used
- To avoid waste, single use sachets may be preferable in areas where gel is used infrequently

**For use of non-sterile ultrasound gel:**

- Re-filling single use bottles is not permitted
- Clean the whole bottle, including the tip between every patient/use
- Single use bottles should be discarded when empty, when soiled or when damaged
- Once opened, date the bottle and dispose of after 1 month or its expiry date whichever comes first
- Remove gel from skin after the procedure using a clean paper towel/tissue/wipe and clean/cleanse the skin using patient skin wipes or equivalent. Encourage the patient to wash following the examination

- The tip or nozzles of bottles should not come into contact with anything, where it does it should be cleaned immediately with a disinfectant wipe
- If the nozzles comes into contact with the patients skin then it should be wiped with an appropriate disinfection wipe (e.g.Clinell)
- If an invasive procedure is subsequently undertaken within 24 hours of the use of non-sterile gel, at or near to the site, then the skin should be thoroughly cleaned using antiseptic skin preparation in line with trust local policy for the procedure. Please note that if the procedure is known about prior to ultrasound, sterile gel should be used

Warming of gel is not recommended unless there is a clinical benefit that outweighs applying gel at room temperature. Where warming of gel is performed:

- Use dry heat warmers, not warm water
- Ensure bottles are kept upright in warmers, not inverted
- Clean warmers daily and when soiled with gel with an disinfectant wipe

### **3. Education and Training**

*None, document to support awareness*

### **4. Monitoring Compliance**

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Annual decontamination audit	Annual decontamination audit	IP leads	annually	IP leads
Cleaning logs	Team leaders to check logs	RDA team leaders/ultrasound leads	weekly	Report to clinical leads in ultrasound

### **5. Supporting References**

<https://www.gov.uk/government/publications/ultrasound-gel-good-infection-prevention-practice/good-infection-prevention-practice-using-ultrasound-gel>

[https://www.bmus.org/static/uploads/resources/2020\\_Guidelines\\_for\\_Professional\\_Ultrasound\\_Practice.pdf](https://www.bmus.org/static/uploads/resources/2020_Guidelines_for_Professional_Ultrasound_Practice.pdf)

### **6. Key Words**

Ultrasound, gel, UKHSA – UK health security agenc, *Burkholderia cepacia*

CONTACT AND REVIEW DETAILS	
<b>Guideline Lead</b> Catharine Berry, Clinical Lead Sonographer	<b>Executive Lead</b> Medical Director
<b>Details of Changes made during review:</b> V1 new guideline	