



Management of laboratory exposure to *Brucella* species: assessing exposure and individual assessment flowchart

1. Assessing the exposure

Risk level = HIGH

Persons at risk	Exposure activities
Person performing activity	Worked on positive <i>Brucella</i> culture within a certified biosafety cabinet without wearing appropriate PPE (example: gloves and gown)
Person performing activity and any person within a 5 feet (1.5m) radius	<ul style="list-style-type: none"> • worked with a positive <i>Brucella</i> culture on open bench • opened positive <i>Brucella</i> cultures on open bench • sniffed positive <i>Brucella</i> culture • mouth pipetted specimen material • direct skin or mucous membrane contact
All persons present in laboratory room	Occurrence of widespread aerosol generating procedures*

Risk level = LOW

Persons at risk	Exposure activities
All persons present in laboratory room at distance more than 5 feet (1.5m) from activity	Present in the lab at the time of manipulation of <i>Brucella</i> isolate on an open bench, but who do not have high risk exposures as defined above

Risk level = NONE

Persons at risk	Exposure activities
None	<ul style="list-style-type: none"> • handled positive <i>Brucella</i> culture using full containment level 3 (CL3) precautions (without breaches) • handled positive <i>Brucella</i> culture within a certified biosafety cabinet using appropriate PPE (example: gloves and gown, without breaches) • sample reception staff handling sample request forms and so on, but not handling opened samples • routine processing of blood samples or urine samples (such as in routine biochemistry, haematology, blood sciences laboratories)

* Widespread aerosol generating procedures referred to in Table 1 include, but are not limited to:

- centrifuging without sealed carriers
- vortexing or sonicating
- accidents resulting in spillage or splashes (that is, breakage of tube containing specimen)

Other manipulations outside a certified biosafety cabinet may require further investigation. These may include:

- automated pipetting of a suspension containing the organism
- grinding, blending or shaking the specimen
- other procedures for suspension in liquid to produce standard concentration for identification (that is, inclusion of steps that could be considered major aerosol generating activities)

(Adapted from US [Centers for Disease Control and Prevention](#))

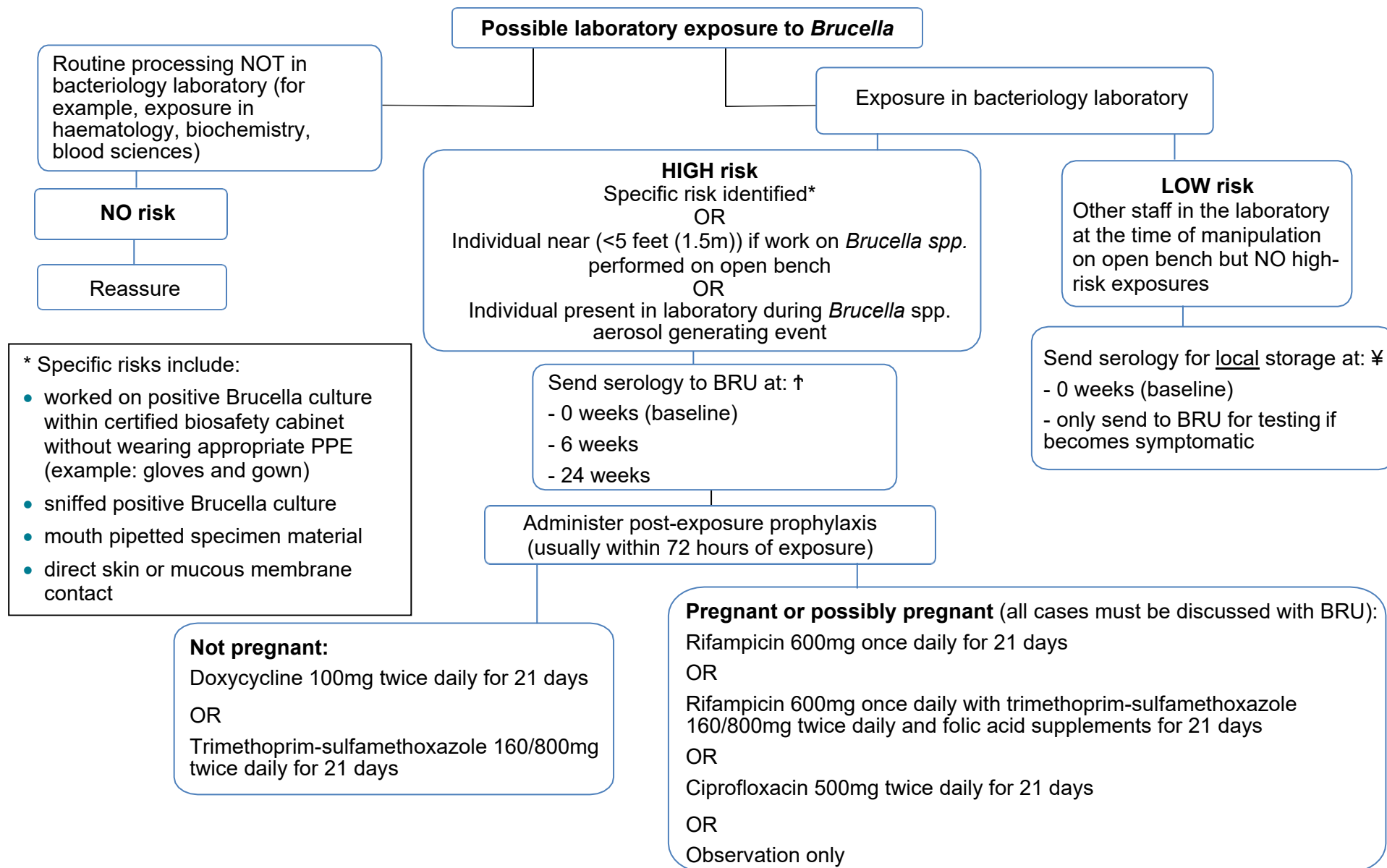
Figure 1, below, is a flow chart showing the steps involved in assessing exposure and individual assessment. It uses the following symbols:

An asterisk (*) refers to specific risk exposures, as in the list above.

¥ 'Low risk patients' means store serum for at least one year from exposure.

† 'High risk patients' means all sera will be stored for 2 years. Baseline serology will be tested in parallel with subsequent samples.

Figure 1. Assessing exposure and individual assessment flowchart



Accessible text version of Figure 1.

Possible laboratory exposure to *Brucella*

Path 1: Routine processing NOT in bacteriology laboratory (for example, exposure in haematology, biochemistry, blood sciences)

No risk

Reassure

Path 2: Exposure in bacteriology laboratory

There are 2 risk categories for an exposure in a bacteriology laboratory, high risk and low risk

2.1. High risk

If a specific risk is identified (see below), implement the following steps.

Note that 'specific risks' include:

- worked on positive *Brucella* culture within certified biosafety cabinet without wearing appropriate PPE (example: gloves and gown)
- sniffed positive *Brucella* culture
- mouth pipetted specimen material
- direct skin or mucous membrane contact

OR

Individual near (<5 feet (1.5m)) if work on *Brucella* spp. performed on open bench

OR

Individual present in laboratory during *Brucella* spp. aerosol generating event

Send serology to BRU at:

- 0 weeks (baseline)
- 6 weeks
- 24 weeks

'High risk patients' means all sera will be stored for 2 years. Baseline serology will be tested in parallel with subsequent samples.

Administer post-exposure prophylaxis (usually within 72 hours of exposure)

Post-exposure prophylaxis regime depends on whether the patient is a) Not pregnant or b) Pregnant (or possibly pregnant).

a) Not pregnant

Doxycycline 100mg twice daily for 21 days

OR

Trimethoprim-sulfamethoxazole 160/800mg twice daily for 21 days

b) Pregnant or possibly pregnant (all cases must be discussed with BRU)

Rifampicin 600mg once daily for 21 days

OR

Rifampicin 600mg once daily with trimethoprim-sulfamethoxazole 160/800mg twice daily and folic acid supplements for 21 days

OR

Ciprofloxacin 500mg twice daily for 21 days

OR

Observation only

2.2 Low risk

An exposure in a bacteriology laboratory that is considered low risk:

Other staff in the laboratory at the time of manipulation on open bench but NO high-risk exposures

Send serology for local storage at:

- 0 weeks (baseline)

- only send to BRU for testing if becomes symptomatic

'Low risk patients' means store serum for at least one year from exposure.

2. Actions: exposure checklist

1. Identify potential exposure event and reinforce need for laboratory containment measures (handle cultures in Containment Level 3 facilities with the use of a certified biosafety cabinet) to prevent further exposures.
2. Identify individuals exposed or potentially exposed and start an incident summary sheet.
3. Determine level of risk of exposed individuals (see figure 1). If any queries, please contact the BRU on +44 (0) 151 706 4410.
4. Inform local Health Protection Team (you can use the [postcode look-up](#)).
5. Contact local occupational health department for follow up of individuals with high risk exposure.
6. Complete local incident report.
7. Assess the requirement to report the incident to Health and Safety Executive using the [RIDDOR form](#).
8. Contact Brucella Reference Unit (BRU). BRU will provide a specific ILOG reference number which is to be included on all request forms for serum sent for testing.
9. Administer post-exposure prophylaxis to individuals with high risk exposure (see [Figure 1](#)).
10. Active surveillance for febrile illness for all laboratory staff with low risk and high risk exposures for 6 months after the last exposure (patient information leaflets are provided on the BRU website).

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