

## CRBSI definitions 2023

*From 2023 onwards CRBSI category 1 has become defunct and category 3 requires either a positive peripheral venous blood culture or a positive (semi-) quantitative tip culture.*

## Case definition of Central venous catheter-Related Bloodstream Infection (CRBSI) in the PREZIES Surveillance

### **CRBSI: microbiologically-confirmed CVC-related bloodstream infection**

Clinical symptoms [fever ( $>38^{\circ}$ ), shivers, hypotension (systolic pressure  $<100$  mmHg)]

And

peripheral venous blood culture is positive

And

positive (semi)quantitative culture of the Central Venous Catheter (CVC)- tip [ $>15$  colony-forming units (cfu)] with identical microorganism

or

quantitative blood culture ratio CVC blood sample/peripheral blood sample  $> 5$ ;

or

differential delay of positivity of blood cultures: CVC blood sample culture positive two hours or more before peripheral blood culture (blood samples drawn simultaneously); or

positive culture with identical microorganism from pus from CVC insertion site

And

absence of other infection with identical microorganism.

### **CRBSI, category 1 – defunct from 2023 onwards**

#### **CRBSI, category 2**

Clinical symptoms [fever ( $>38^{\circ}$ ), shivers, hypotension (systolic pressure  $<100$  mmHg)] And

positive (semi)quantitative culture of the CVC tip ( $>15$  cfu)

And

no peripheral venous blood sample obtained, however arterial blood culture positive with identical microorganism

And

absence of other infection with identical microorganism.

#### **CRBSI, category 3**

Clinical symptoms [fever ( $>38^{\circ}$ ), shivers, hypotension (systolic pressure  $<100$  mmHg)]

And

peripheral venous blood culture is positive

or

positive (semi-) quantitative culture of the CVC tip

And

fever disappears within 24h after CVC removal

And

absence of other infection with identical microorganism.

**CRBSI, category 4**

Clinical symptoms [fever ( $>38^{\circ}$ ), shivers, hypotension (systolic pressure  $<100$  mmHg)]

And

positive peripheral venous blood culture

And

CVC remains in situ

And

fever disappears within 48 h after start of antibiotic treatment.

And

absence of other infection with identical microorganism

Notes: •Catheter-related: the CVC was in situ  $< 48$  hours before the onset of the BSI

• In Dutch clinical practice, CRBSI is usually investigated by culturing both peripheral blood and the CVC tip. If less optimal (laboratory) methods are used, the diagnostic CRBSI categories 2-4 are available (hierarchical structure).

• The CVC and blood samples are preferentially drawn simultaneously or within 24 hours.