

# Patient Selection for Sepsis Testing

Targeting the right patients, pathogens, and therapy.

**With sepsis, every hour counts** — Early diagnosis and treatment are crucial for better patient outcomes, as many as 80% of sepsis deaths could be prevented with rapid diagnosis and treatment.<sup>1</sup>

T2 Biosystems sepsis panels enhance the standard of care for sepsis by providing species identification directly from a whole blood sample in 3 to 5 hours, often before the second dose of antimicrobials has been administered.

## Establishing Panel Use and Selection Criteria

Instituting strong patient selection ensures that patients most at risk for developing bloodstream infections receive the best care. There are several proven patient selection models, like the ones outlined below, that care teams using T2Bacteria®, T2Resistance® and T2Candida® have integrated into their existing sepsis protocols.

 Patient Type	 Patient Location	 Ordering Provider	 Protocol Approach
<ul style="list-style-type: none"> <li>• Sepsis</li> <li>• Oncology</li> <li>• Transplant</li> </ul>	<ul style="list-style-type: none"> <li>• Emergency Dept.</li> <li>• ICU</li> <li>• Surgery</li> </ul>	<ul style="list-style-type: none"> <li>• Infectious Diseases</li> <li>• Intensivist</li> <li>• Hospitalist</li> </ul>	Patients meeting criteria <ul style="list-style-type: none"> <li>• Lactate / PCT</li> <li>• Empiric Rx started</li> <li>• Sepsis scoring</li> </ul>

**Sepsis:** At risk patients with high mortality if treatment not started immediately

**Oncology/Transplant:** Immunocompromised, repeated exposure to antibiotics, neutropenic

**ED/ICU:** High-risk patients coming into the ED or crashing in the ICU

**Surgery:** At risk for bacterial/ fungal translocation

Use in cases where a small group is heavily involved in managing septic patients

Provider oversees test orders and is responsible for results interpretation/therapeutic decisions

Biomarkers & sepsis risk scoring systems may increase the PPV of the test → More likely to find the true positives

# Patient Indicators for Ordering

## PHYSICAL CONDITION

- Suspicion of a BSI
- Sepsis or septic shock
- Started on empiric therapy
- qSOFA >2
- Elevated PCT
- Lactate >2
- 3+ days in the ICU

## UNDERLYING CONDITION

- Surgery (intra-abdominal, GI/hepatobiliary, or solid organ transplant)
- Immunocompromised/elderly (LTAC)
- Febrile neutropenic
- HAP/VAP
- IV drug use
- Trauma/burn

## DEVICE IMPLANTS

- Dialysis access
- Central Venous Catheter (CVC)/PICC
- Prosthetic valves
- TPN

# Patient Selection Criteria in Clinical Use

## Evangelismos General Hospital | Athens, Greece

T2Bacteria is restricted to patients suspected of a bloodstream infection (BSI) who meet the following criteria:

- Blood cultures have been ordered AND one of the following is present:
  - » Septic shock with Lactate > 2mmol/L
  - » Significant increase in vasopressors needed, or new need for vasopressors
  - » Patient already receiving antibiotics

NOTE: T2Resistance Panel is ordered in patients with positive T2Bacteria results (exception for *A. baumannii*)

## Bambino Gesù Children's Hospital | Rome, Italy

Clinical criteria for BSIs are based on local internal protocols. T2Bacteria and T2Candida Panels are ordered at the discretion of the treating physicians.

# T2 Biosystems Sepsis Panels

## T2Bacteria Panel

SENSITIVITY 90%<sup>2,3</sup> | SPECIFICITY 98%<sup>2,3</sup>

- *Enterococcus faecium*
- *Staphylococcus aureus*
- *Klebsiella pneumoniae*
- *Acinetobacter baumannii*
- *Pseudomonas aeruginosa*
- *Escherichia coli*

## T2Resistance Panel\*

SENSITIVITY >99%<sup>4</sup> | SPECIFICITY >99%<sup>4</sup>

- *mecA/C*
- *vanA/B*
- KPC
- AmpC (CMY/DHA)
- OXA-48 Group
- NDM/VIM/IMP
- CTX-M 14/15

## T2Candida Panel

SENSITIVITY 91%<sup>5,6</sup> | SPECIFICITY 99%<sup>5,6</sup>

- *Candida albicans*
- *Candida tropicalis*
- *Candida parapsilosis*
- *Candida krusei*
- *Candida glabrata*



**T2 Biosystems®**

VISIT [www.t2biosystems.com](http://www.t2biosystems.com) or EMAIL [info@t2biosystems.com](mailto:info@t2biosystems.com)



\*T2Resistance has not yet been reviewed by FDA for clearance

1. Sepsis Alliance. Sepsis Alliance annual sepsis awareness survey. 2020. Accessed 7/23. 2. Nguyen, M. H., et al. Annals of Internal Medicine, 2019, 3. T2Bacteria Instructions for Use 4. T2Resistance Instructions for Use 5. Mylonakis, E., et al. Clinical Infectious Diseases, 2015 6. T2Candida Instructions for Use

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