

Breakthrough Sepsis Pathogen Detection

Corporate Presentation
May 2019
(NASDAQ: TT00)

Forward-Looking Statements

This presentation contains forward-looking statements. Such statements reflect the current views of senior management of T2 Biosystems, Inc. ("we", "us", "our", "T2", "T2 Biosystems" or the "Company") and include those about T2's goals, strategies, plans, objectives, prospects, milestones, future operations, business and industry, anticipated product benefits, future events and conditions and potential scenarios. Such statements and those that include the words "expect," "intend," "plan," "believe," "project," "forecast," "estimate," "may," "should," "anticipate" and similar statements of a future or forward-looking nature identify forward-looking statements for purposes of the federal securities laws or otherwise. Forward-looking statements address matters that involve risks and uncertainties. Each forward-looking statement is subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statement, including, for example: (i) our status as an early commercial-stage company and expectation to incur losses in the future; (ii) our ability to obtain marketing authorization from the FDA or regulatory clearance for additional product candidates in the United States or abroad; (iii) the market acceptance of our technology; (iv) our ability to timely and successfully develop and commercialize existing and future product candidates; (v) our lengthy and variable sales cycle and lack of sales history; (vi) our ability to successfully manage growth; (vii) federal, state and foreign regulatory requirements; (viii) our uncertain future capital needs and ability to raise future capital; (ix) dependence on third parties; (x) recruiting, training and retaining key personnel; (xi) competitive factors; (xii) manufacturing and other product risks; (xiii) risks related to intellectual property; and (xiv) other risk factors included in our annual report on form 10-K filed with the Securities and Exchange Commission (SEC) on March 14, 2019 and other documents we file with the SEC from time to time. Accordingly, there are or will be important factors that could cause our actual results to differ materially from those indicated in these statements. The statements made herein speak only as of the date of this presentation. We do not undertake, and specifically disclaim, any obligation to update any forward-looking statements contained in this presentation.

Why Are We Here Today?

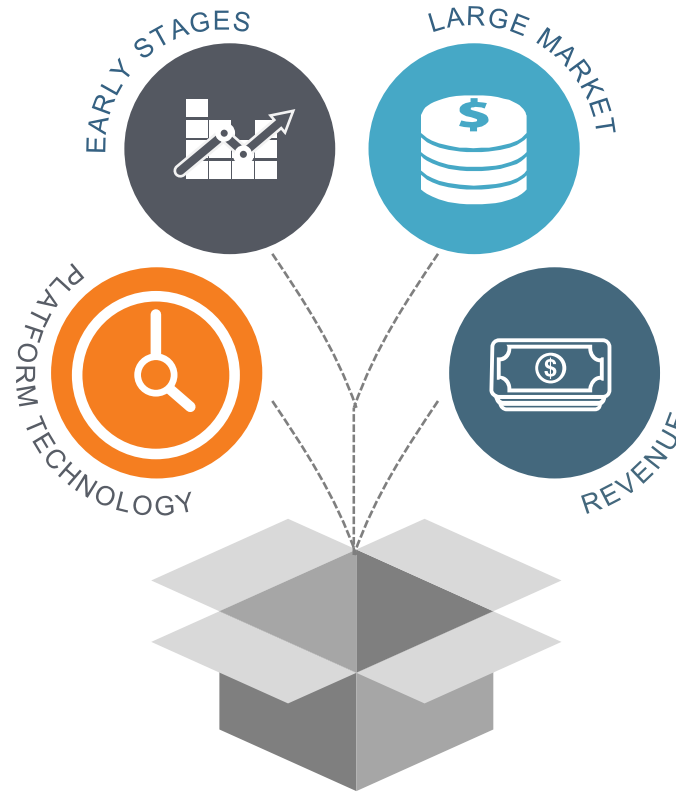
T2 has reached a tipping point for broad adoption of the T2Dx[®] technologies

Early Stages

- Proven with T2Candida[®]
- Expanding rapidly with T2Bacteria[®]

Platform Technology

- Market expansion over time



Large Market

- Global unmet need

Revenue

- “Double-double” revenue growth opportunity with attractive recurring model

Sepsis is a Deadly and Frustrating Global Problem

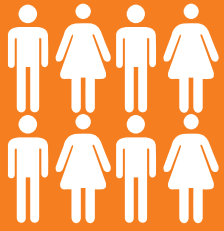
A recognized, but unsolved global crisis



1 death every
5 seconds
(more or less)

Sepsis is a Deadly and Frustrating Global Problem

A critical part of the solution is now available



Potentially
>40,000
preventable deaths in
the U.S. with T2



The Facts About Sepsis

Most expensive hospital-treated condition in the U.S.



Contributes to
1 in 2-3 hospital
deaths¹



Representing
\$27B in U.S.
healthcare
costs^{2,3}



**Claims more
lives than breast
cancer, prostate
cancer and
AIDS, combined⁴**



1 in 5 surviving
sepsis patients
die within 2 years
due to sepsis⁵



Kills ~250,000
Americans
annually and ~6
million people
worldwide^{6,7}



Most prevalent
and costly cause
of hospital
readmissions⁸

1. Liu, V., Escobar, G. J., Greene, J. D., et al. (2014). Hospital deaths in patients with sepsis from 2 independent cohorts. *Jama*, 312(1), 90-92.

2. Torio, C. M. and Moore, B. J. (2016). Statistical Brief# 204. Healthcare Cost and Utilization Project (HCUP). May.

3. McDermott, K. W., Elixhauser, A., Sun, R. (2017). Statistical Brief# 225. Healthcare Cost and Utilization Project (HCUP). June.

4. National Institute of General Medical Sciences. National Institutes of Health. Sepsis fact sheet. 2014.

5. Prescott, H. C., Osterholzer, J. J., Langa, K.M., et al. (2016). Late mortality after sepsis: propensity matched cohort study.

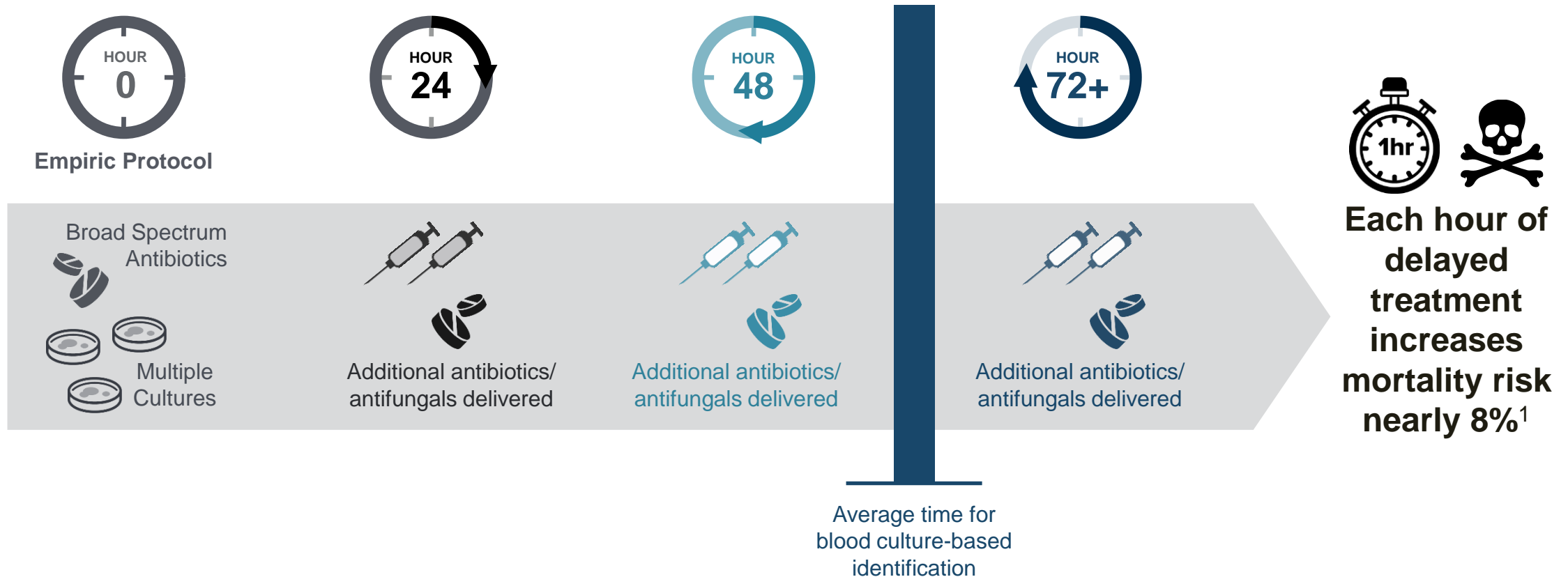
6. Centers for Disease Control and Prevention.

7. Gilbert, J. A. (2018). Sepsis care bundles: a work in progress. *The Lancet Respiratory Medicine*.

8. Mayr, F. B., Talisa, V. B., Balakumar, V., et al. (2017). Proportion and cost of unplanned 30-day readmissions after sepsis compared with other medical conditions. *JAMA*, 317(5), 530-531.

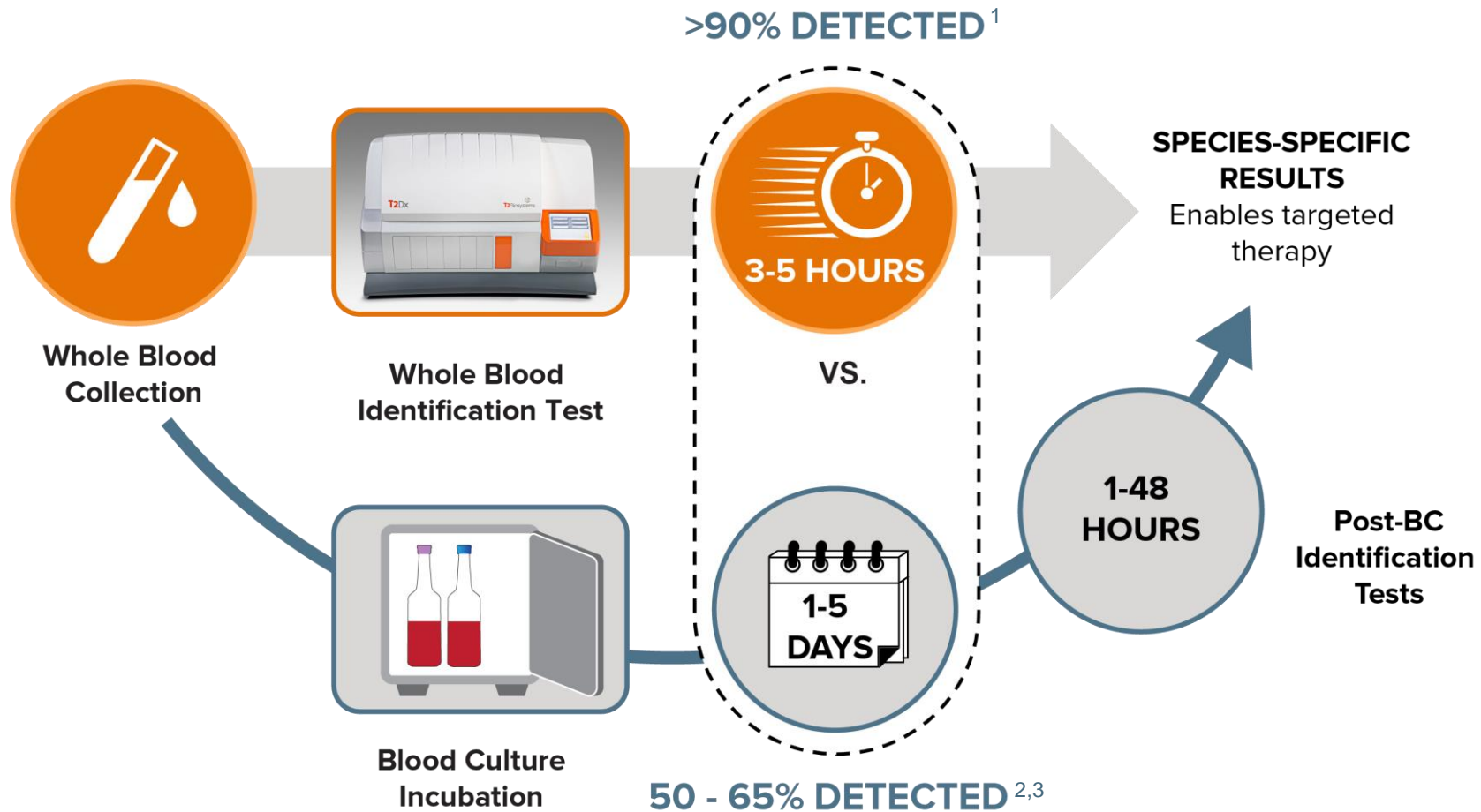
Sepsis Poses an Hourly Challenge that Relies on Probability-Based Protocols

Patient journey: Current pathway and empiric “process”



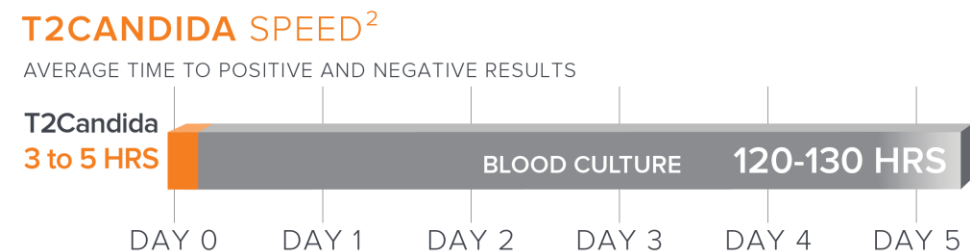
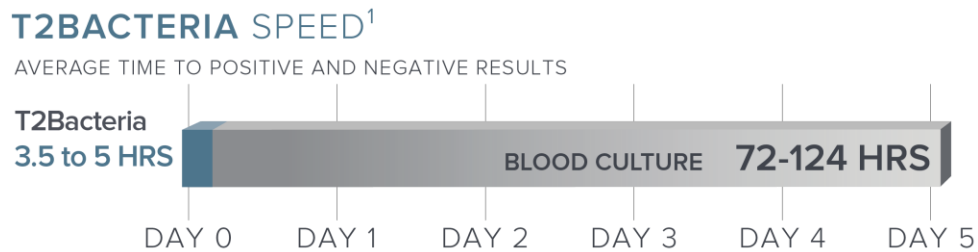
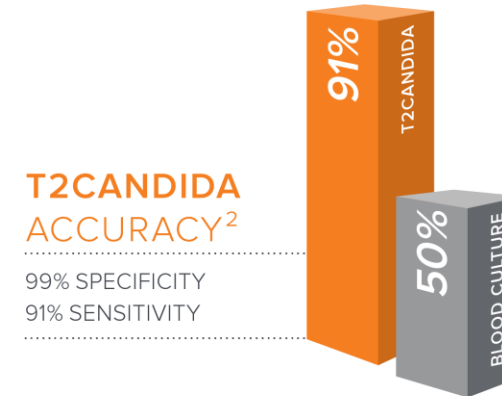
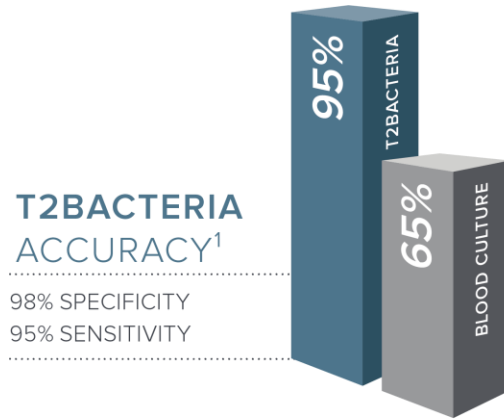
T2MR: New Standard in Detecting Sepsis Pathogens

T2Dx diagnostics provides faster and more accurate detection

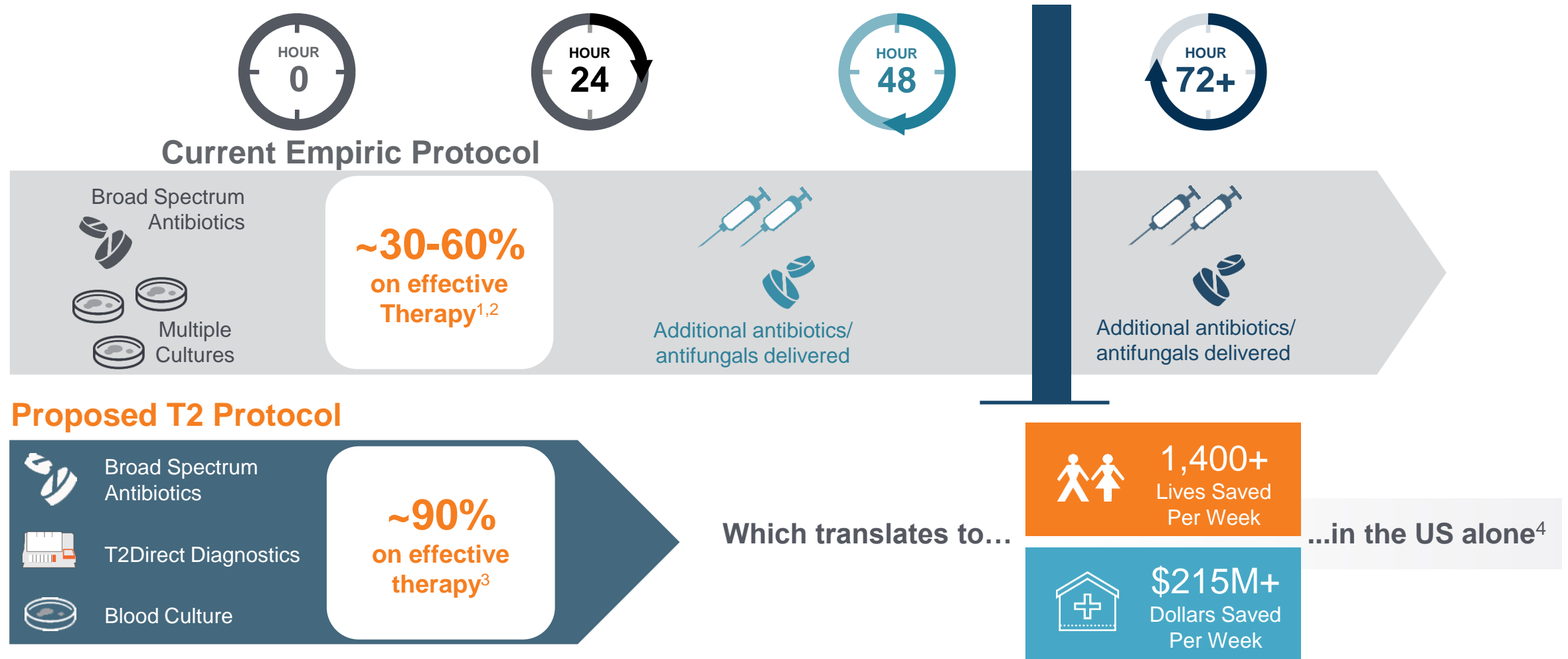


1. Mylonakis, E., Clancy, C. J., Ostrosky-Zeichner, L., et al. (2015). T2 magnetic resonance assay for the rapid diagnosis of candidemia in whole blood: a clinical trial. *Clinical Infectious Diseases*, ciu959.
2. Clancy, C. J., & Nguyen, M. H. (2013). Finding the "missing 50%" of invasive candidiasis: how nonculture diagnostics will improve understanding of disease spectrum and transform patient care. *Clinical infectious diseases*, 56(9), 1284-1292.
3. Cockerill III, F. R., Wilson, J. W., Vetter, E.A., et al. (2004). Optimal testing parameters for blood cultures. *Clinical Infectious Diseases*, 38(12), 1724-1730.

The Blood Culture Divide



A Simple Change, an Immense Impact



1. T2Bacteria Clinical Pivotal Trial Data.

2. Buehler, S. S., Madison, B., Snyder, S. R., et al. (2016). Effectiveness of practices to increase timeliness of providing targeted therapy for inpatients with bloodstream infections: a laboratory medicine best practices systematic review and meta-analysis. Clinical microbiology reviews, 29(1), 59-103.

3. Kumar, A., Ellis, P., Arabi, Y., et al. (2009). Initiation of inappropriate antimicrobial therapy results in a fivefold reduction of survival in human septic shock. CHEST Journal, 136(5), 1237-1248.

4. Represents the potential healthcare savings and lives saved using the T2Direct Diagnostic to test high risk patients based on assumed levels of total annual patients assuming all high-risk sepsis patients are tested with T2Direct Diagnostics and assuming (i) 90% of high risk patients receive appropriate therapy within hours of the presentation of symptoms, (ii) a 50% mortality rate reduction for patients who receive rapid appropriate therapy, and (iii) that each new detected patient saves \$22,800. This slide contains T2's estimates, which are not based on historical results and constitute forward-looking statements that are subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statement.

T2Bacteria Immediate Clinical Impact

Emergency Room Patient Example

- Patient entered the Emergency Department with signs and symptoms of infection
- T2Bacteria Panel was run on patient's blood sample, but they were sent home when other diagnostics came back negative
- T2Bacteria was positive in a few hours for an *E. coli* infection and the patient was immediately brought back and properly treated
- Blood culture confirmed the infection 24 hours later

Cancer Patient Example

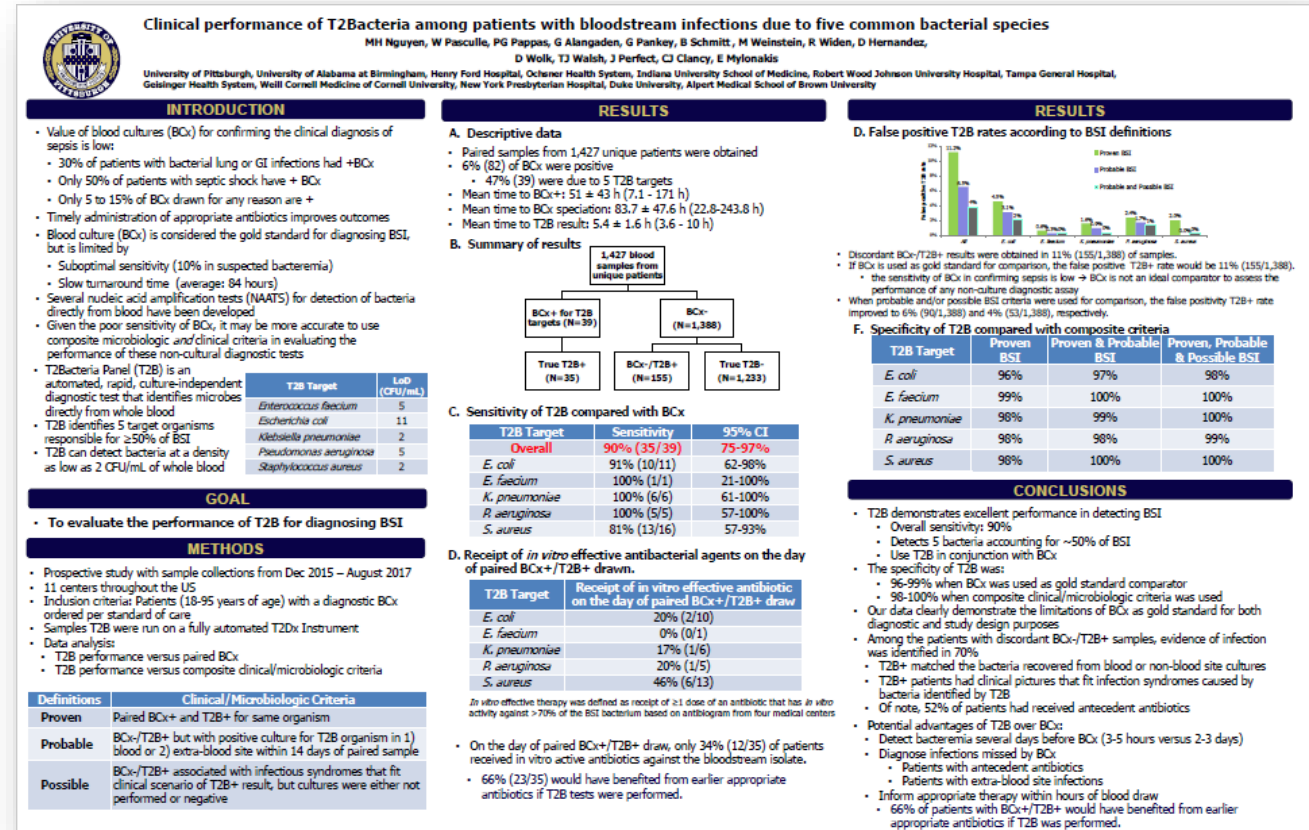
- Cancer patient with unknown infection was on antibiotics for 5 days
- T2Bacterial panel was run on patient's blood sample
- T2Bacteria was positive in 4 hours and antibiotic therapy was changed to vancomycin

T2Bacteria Pivotal Data Published in Annals of Internal Medicine

1,427 patient samples collected across 11 hospitals

Comparisons to Blood Culture:

- Detected **69 patient** infections not detected by culture
- Provided results more than **2.5 days faster than culture** (5.4 hours)
- 68%** of patients with a BSI confirmed by T2 and blood culture could have benefitted from earlier rapid diagnostic result
- Noted advantage in detecting infected patients on antibiotics who were missed by blood culture



T2Candida Panel is Changing Treatment Protocols

Growing number of real-world T2Candida success stories



- Study demonstrated \$2.3M in annual hospital savings
- Reduced median ICU length of stay by 7 days; overall stay by 4 days
- Most negative patients had antifungals discontinued or de-escalated saving \$\$.¹



- Median length of stay reduced by 7 days
- Unnecessary antifungal therapy was avoided in >50% of patients
- Average net antifungal savings of ~\$195 for every patient tested²



- Pharmacy savings of ~\$280 per patient
- T2Candida detected 56% more positive patients than blood culture³



- 100% of patients who tested positive received appropriate therapy in <9 hours
- Therapy was discontinued for all patients who tested negative⁴

1. Wilson, N.M., Kenney, R.M., Tibbetts, R.J., et. al. T2 Magnetic Resonance Improves the Timely Management of Candidemia. Poster Presentation IDWeek 2016.

2. Estrada, S. J. Real World Value of T2Candida Lee Memorial Hospital. Slide Presentation ASM 2016.

3. Kateon, H., Edwards, J., Sawyer, A., et al. Utilization of T2Candida Panel for the rapid detection of *Candida* species in a large community hospital. Poster Presentation IDWeek 2016.

4. Patel, F. and Young, E. Antifungal Prescribing During Initial Implementation of Candidemia Early Detection and Species Identification Testing with T2Candida Panel. Poster Presentation IDWeek 2016.

Significant Burden of Bacterial Infection and Sepsis

Payors should support and incentivize revised protocols

**Add
T2Bacteria
&
T2Candida**

**>90% of
patients on the
right targeted
therapy within
6 to 8 hours**



Representing \$27B in U.S. healthcare costs^{1,2}

~\$25,000 Cost Savings

Per patient if on right therapy
within 24 hours³

Billions of Dollars

In savings for hospitals, including
decreased readmissions⁴

50% Reduction

In mortality for patients with rapid
effective treatment⁵

Patients Benefit

From reduction in long-term
side-effects

1. Torio, C. M. and Moore, B. J. (2016). Statistical Brief# 204. Healthcare Cost and Utilization Project (HCUP). May.

2. McDermott, K. W., Elixhauser, and A., and Sun, R. (2017). Statistical Brief# 225. Healthcare Cost and Utilization Project (HCUP). June.

3. Estimated economic impact based on customer experience with T2Candida Panel; Bilir, S. P., Ferrufino, C. P., Pfaller, M. A., and Munakata, J. (2015); and studies for target bacterial species.

4. See slide 11.

5. Leibovici, L., Shraga, I., Drucker, M., et al.(1998). The benefit of appropriate empirical antibiotic treatment in patients with bloodstream infection. Journal of internal medicine, 244(5), 379-386.

Established Reimbursement Across Multiple Care Environments

Financially attractive in all settings

Point-of-Care Testing

Emergency Room
Outpatient Settings

- CPT 87640, 87798
- Coverage if not admitted; other outpatient settings
- ER is most common setting

	T2Bacteria
Reimbursement	\$220
Cost of Test	\$150

In-Patient Hospital

Admitted from ER
Admitted for Unrelated Procedure

- DRG 870, 871, 872
- Coverage if admitted or already admitted
- Example DRG Reimbursement: \$35,000¹

	T2Bacteria	T2Candida
Cost of Test	\$150	\$200
Percent of DRG	0.4%	0.6%

1% of DRG

The T2Dx Impact

Improve the quality of patient care while reducing healthcare costs

Targeted Rx

- Reduced resistance
- Reduced length of stay
- Potential reduction in morbidity and mortality



Efficient use of limited resources

- Reduced repeat testing
- Reduced unnecessary Rx
- Reduced time waiting for diagnostic test results

Adoption Drives Revenue and Rapid Pay Back

Doing well by doing good

Typical High Risk Patients In Target Market

Patients Suspected of Sepsis	3,000
Patients Suspected of Fungal Infections	375

Potential Hospital Utilization Scenario

	Patients Tested	Price per Test	Total Revenue
T2Bacteria	1,500	\$150	\$225,000
T2Candida	375	\$200	\$75,000
Annual Recurring	1,875		\$300,000
T2Dx Instrument		\$100,000 unit price	

In this example, patients suspected of sepsis are screened with the T2Bacteria Panel in the ER and throughout portions of the hospital as part of a sepsis protocol.

Commercial Strategy

Global expansion of T2Direct Diagnostics driven by T2Bacteria Panel launch



United States

Direct Sales

- **Organization:** 15 sales reps and 6 medical affairs liaisons
- **Target:** 1,200 hospitals with the highest concentration of patients at risk for sepsis-related infections

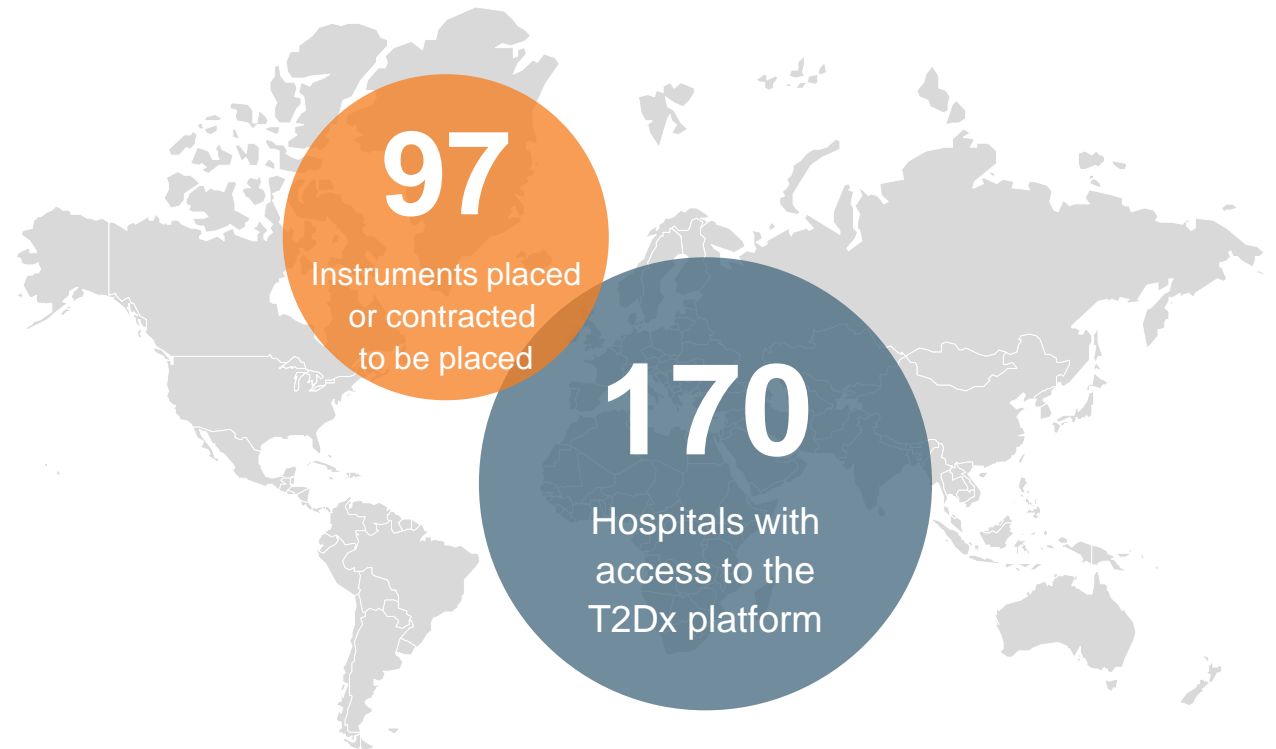


International

Distributor Sales in 19 Countries

- 12 distribution partners supported by small team of direct sales/marketing and field service personnel

Expanding on the existing T2Dx installed base



Comprehensive Commercial Tactics

Global expansion of T2Direct Diagnostics driven by T2Bacteria Panel launch

Medical Meetings & Conferences



Digital Marketing

4,779 followers
6d

WEBINAR: "Sepsis Management: The Emergence of Rapid Diagnostics in the ED." Sepsis, the #1 cause of death in US hospitals, has a mortality that exceeds prostate cancer, breast cancer and AIDS combined. As many as 92% of s...see more

Targeted Social Media and Email Campaigns

LIVE LECTURE
Sepsis Management: The Emergence of Rapid Diagnostics in the Emergency Department
SPEAKER: W. Frank Peacock IV, MD, FACEP, FACC
Professor of Emergency Medicine, Associate Chief and Research Director for the Department of Emergency Medicine at the Baylor College of Medicine

WEBINAR **SEPT. 18, 2018 11:00 AM ET**

37 Likes · 3 Comments

JOIN US AT ASM Microbe 2018
Booth #1751 | June 7-11 | Atlanta, Georgia

Learn more about how you can **improve blood culture and get patients on targeted therapy faster than ever before!**

Visit our booth to see the new **T2Direct** **T2Bacteria** panel and learn how it can help you improve patient outcomes and reduce costs.

Booth Presentation #1751
Sunday, June 10, 10:00 am - 11:00 am
Presenting the new **T2Direct** **T2Bacteria** panel and learn how it can help you improve patient outcomes and reduce costs. **Booth Presentation #1751**
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Sunday, June 10, 10:00 am - 11:00 am
Presenting the new **T2Direct** **T2Bacteria** panel and learn how it can help you improve patient outcomes and reduce costs.

Request a meeting to discuss T2Bacteria

Publications / Economic Models

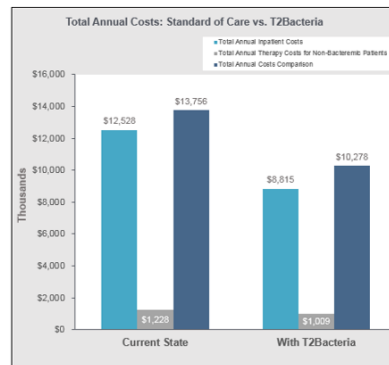
Utilizing Same-Day Sepsis Pathogen ID for Faster Therapy, Enhanced Stewardship, Improved Outcomes

Cornelius J. (Neil) Clancy, M.D.

20 June 2018

University of Pittsburgh

T2Direct Diagnostics™ Economic Model



Use of T2MR in invasive candidiasis with and without candidemia

Abstract

Background: Invasive candidiasis (IC) is a life-threatening fungal infection. The use of T2MR in IC can help identify the causative agent, allowing for targeted therapy and improved outcomes.

Methods: A retrospective analysis of patients with IC treated with T2MR. The study compared the use of T2MR to standard of care (SOC) in terms of time to diagnosis, time to targeted therapy, and mortality.

Results: The study found that patients treated with T2MR had a significantly shorter time to diagnosis and time to targeted therapy compared to SOC. Additionally, mortality was significantly lower in the T2MR group.

Conclusion: The use of T2MR in IC can improve patient outcomes by enabling faster diagnosis and targeted therapy.

Commercial Activity Related to T2Bacteria Launch

Encouraging data points from first 9 months driving refined strategy

- Positive customer feedback on **team of 6 medical affairs liaisons** supporting new system activation
- First U.S. customers **began testing** during Q1 2019
- Sales team balanced between engaging with accounts that could fall into the faster **30-90 day sales cycle** category (all new U.S. accounts in 2H 2018), while also advancing existing traditional opportunities (6-12 month cycle), which began closing in Q1 2019
- **Approximately doubled** contract close rate since T2Bacteria launch
- **~400 attendees** at ECCMID (April 2019) integrated symposium highlighting T2Bacteria and T2Candida clinical data



2019 Guidance:

100%+ Product
Revenue Growth

70-80 new T2Dx
Instrument Contracts

T2Resistance Panel

The first direct-from-blood detection of resistance markers

- Detection of **13 resistance genes** from both gram-positive and gram-negative pathogens from a single patient blood sample, without the wait for blood culture, in 3-5 hours
- Covers the most clinically important genes, including several listed on the **CDC's Urgent Threat list** for antibiotic resistance
- Utilizes **same T2Dx Instrument** as the T2Bacteria and T2Candida Panels
- Developed with the help of an award from CARB-X (funded by BARDA), the Wellcome Trust, and the National Institute of Allergy and Infectious Diseases (NIAID)
- Expected to be available for research use only in the U.S. and receive CE Mark for commercial availability in Europe by the end of 2019

FDA Breakthrough Designation


- Granted “Breakthrough Device” designation by the FDA
- Allows T2 Biosystems to work closely with the FDA during the premarket review phase to ensure patients can have access to the benefits of this innovation as soon as possible

Powered by **CARB-X**



Product Pipeline Highlights – Enabled by Highly-Sensitive Detection

Directly from whole blood – no requirement for blood culture

		2016	2017 & 2018	2019 & beyond	
SEPSIS	FUNGAL	T2Candida Panel CE Marked & FDA cleared	T2Candida auris Panel Research Use Only including environmental testing		
	BACTERIAL		T2Bacteria Panel CE Marked & FDA cleared	T2Resistance Gram-positive and gram-negative resistance genes	
	BACTERIAL RESISTANCE			 Powered by CARB-X <i>FDA Breakthrough Device designation</i>	
	TICK-BORNE				T2Lyme Panel Canon

This slide contains T2's future goals and aspirations, which constitute forward-looking statements that are subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. See "Forward-Looking Statements" on slide 2.

Financial Summary¹

March 31, 2019		
Revenue	1Q19	\$1.8M
	4Q18	\$1.8M
	FY18	\$10.5M
Product Revenue	1Q19	\$1.3M
	4Q18	\$1.3M
	FY18	\$4.8M
Product Growth	YoY	30%
Cash Burn	1Q19	\$13.4M
Cash ⁴		\$37.6M
Common Shares Outstanding	1Q19	44.3M

>5% Investors – As of March 31, 2018 ^{2,3}	
Canon Life Sciences	13.7%
Goldman Sachs	9.4%
Senvest Management	6.4%

1. All amounts are rounded to the nearest hundred thousand.
2. Based on 44,175,441 shares outstanding as of December 31, 2018.
3. Source SEC filings as of February 15, 2019.
4. Includes \$180k restricted cash.

Guidance

2019 Guidance	
2019 total revenue	Double from \$10.5 million in 2018
Product revenue	100%+ growth
2Q 2019 total revenue:	\$1.8 - \$2.1 million
Product revenue	\$1.5 - \$1.8 million
2019 T2Dx new contracts:	70 – 80
2Q 2019 T2Dx new contracts:	12 – 14
Quarterly operating expense:¹	\$10.5 - \$11.5 million²

Long-Term Targets	
Total revenue	Doubling in 2019 and 2020 to at least \$50 million in 2020
Breakeven model:	
Total revenue	\$65 - \$75 million
Gross margin	~45 - 50%

1. Excluding cost of product revenue.

2. Including non-cash depreciation and stock based compensation of approximately \$3.0 million

3. * This slide contains T2's future goals and aspirations, which constitute forward-looking statements that are subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. See "Forward-Looking Statements" on slide 2.

Breakthroughs in Medical Diagnostics

First and only FDA-cleared diagnostic to detect pathogens directly from blood

FAST COMPANY



Early 20th
century



Blood
Culture

1947



Cell
Counting

1959



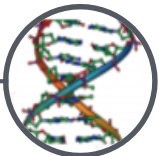
Immunoassay

1968



Automated
Chemistry
Analyzers

1985



PCR
Technique

Direct Sample Analysis Identify Pathogens Using Magnetic Resonance



Investment Highlights

A platform technology with multiple, billion-dollar franchise opportunities



T2MR

Innovative
technology - broad
applications



Market

\$2B+ Initial market
potential



Sepsis Pathogen ID

Provide species-specific
results, direct from whole
blood, in 3 to 5 hours



Reimbursement

Covered by existing
reimbursement codes



Robust Pipeline

A new generation of
diagnostics



Execution

Patient access growing,
key collaborations
established