Breakthrough Sepsis Pathogen Detection

Corporate Presentation
November 2018
(NASDAQ: TTOO)

T2 Biosystems®

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; (xii) risks related to intellectual property; and (xiii) other risk factors included in our annual report on form 10-K filed with the Securities and Exchange Commission (SEC) on March 19, 2018 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?

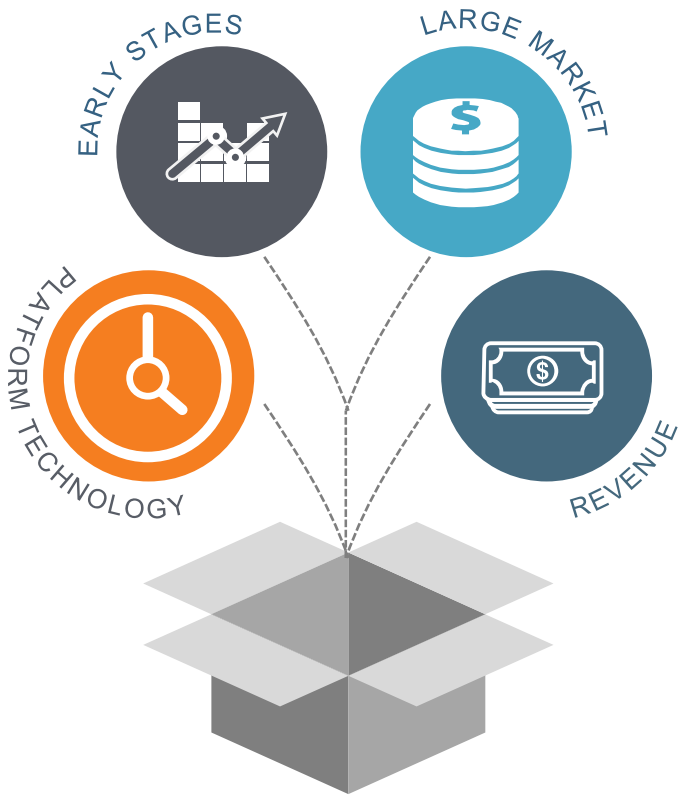
T2 has reached a tipping point for broad adoption of the T2Dx® technologies

Early Stages

- Proven with T2Candida®
- Launching 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)

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

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

Represents the potential 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.

The Facts About Sepsis

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

Contributes to 1 in 2-3 hospital deaths[1]

Representing $27B in U.S. healthcare costs[2,3]

Claims more lives than breast cancer, prostate cancer and AIDS, combined[4]

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

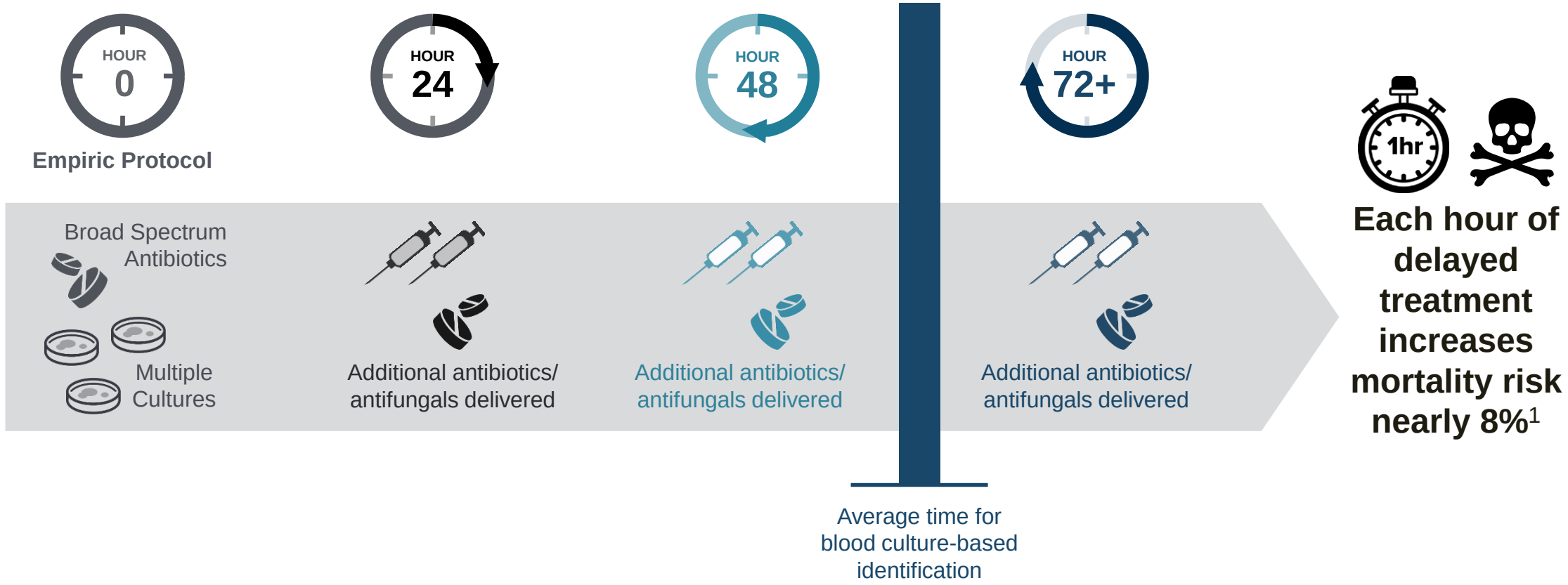
Kills ~250,000 Americans annually and ~6 million people worldwide[6,7]

Most prevalent and costly cause of hospital readmissions[8]

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

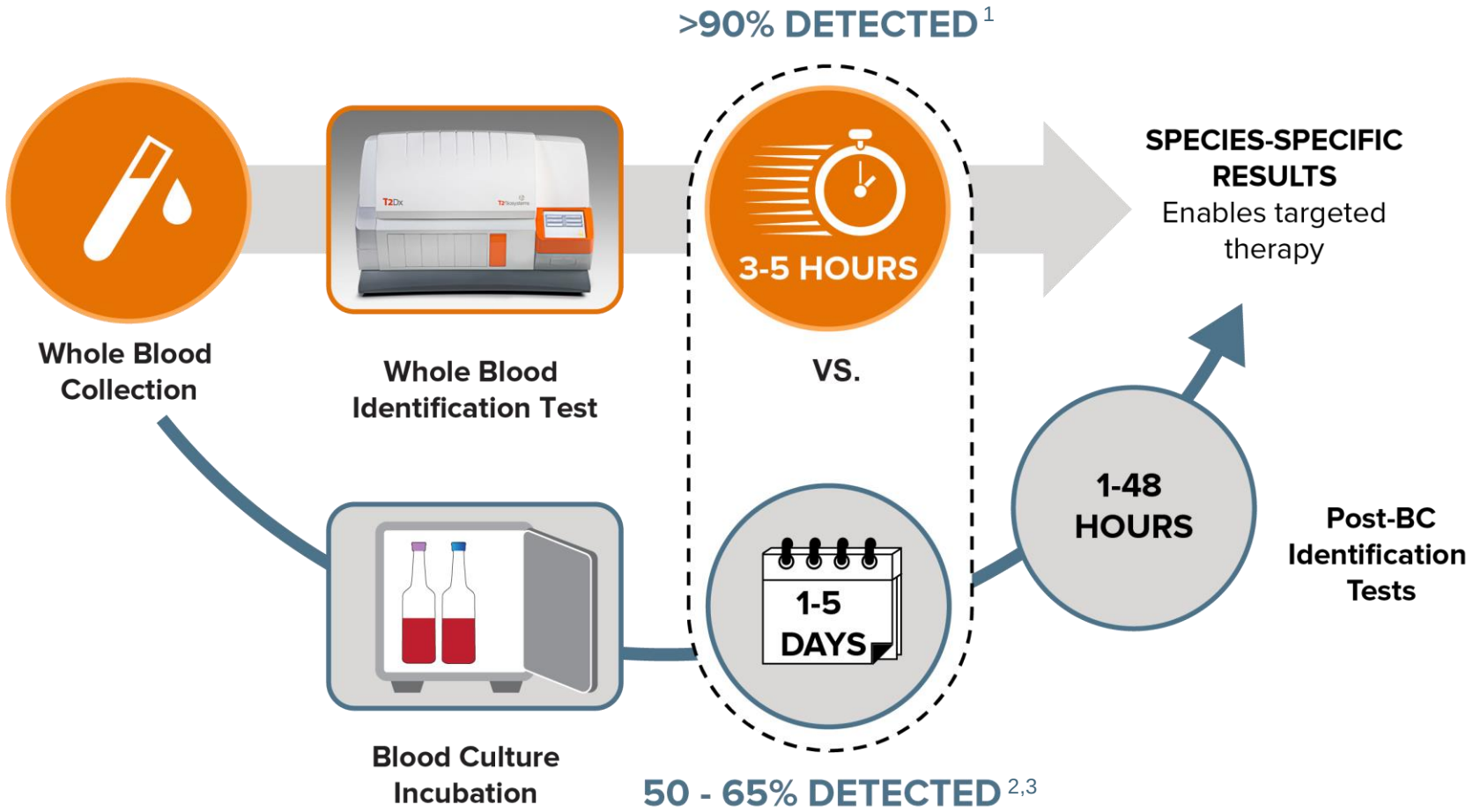
Patient journey: Current pathway and empiric “process”



1. Kumar, A., Roberts, D., Wood, K.E., et al, (2006). Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. Critical care medicine, 34(6), 1589-1596.

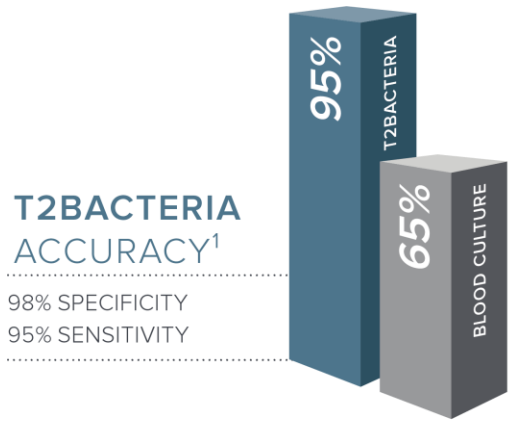
T2MR: New Standard in Detecting Sepsis Pathogens

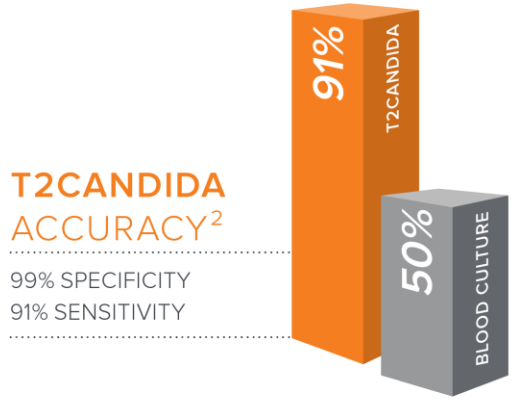
T2Dx diagnostics provides faster and more accurate detection

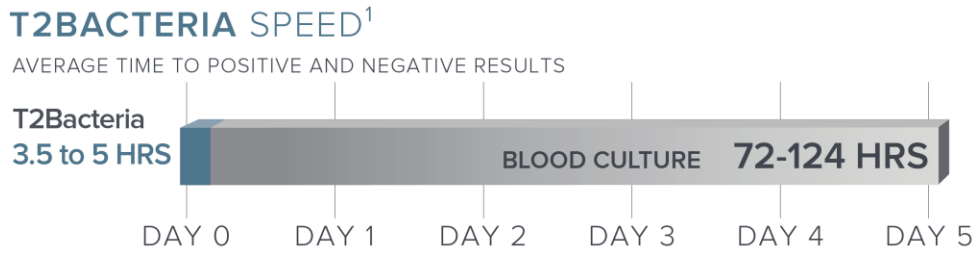


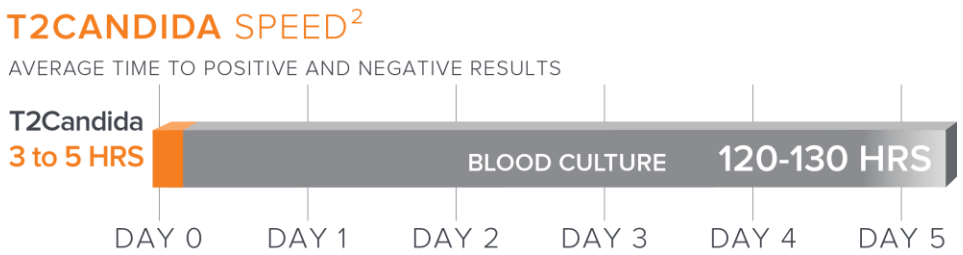
1. Mylonakis, E., Clancy, C. J., Ostrosky-Zeichner, L., et al. (2015). T2 magnetic resonance assay for the rapid diagnosis of candidemia in whole blood: a clinical trial. Clinical Infectious Diseases, ciu959.
2. Clancy, C. J., & Nguyen, M. H. (2013). Finding the "missing 50%" of invasive candidiasis: 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



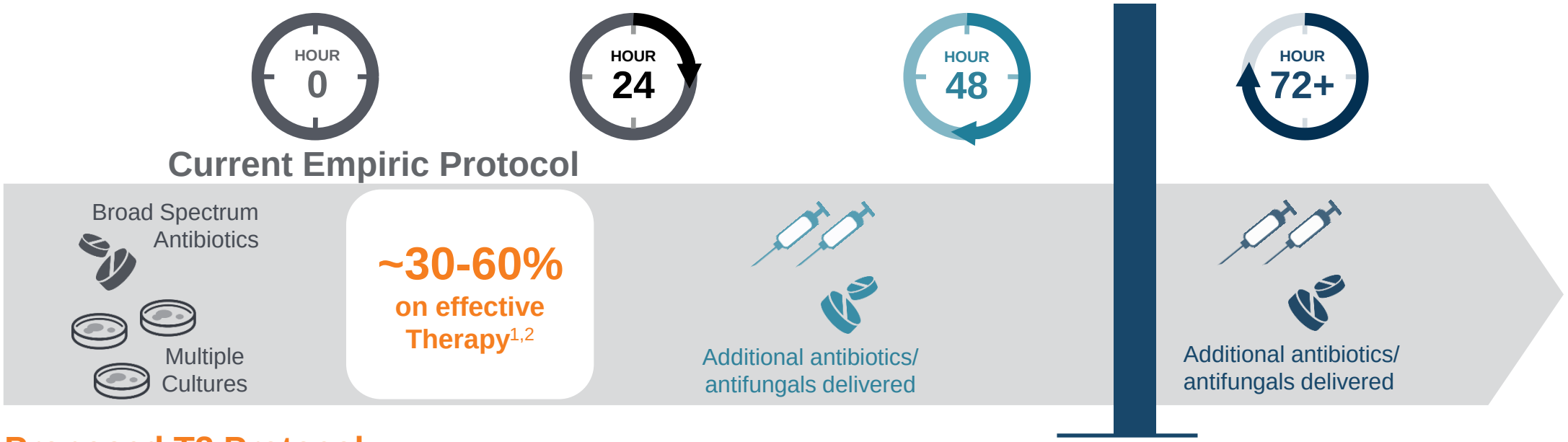




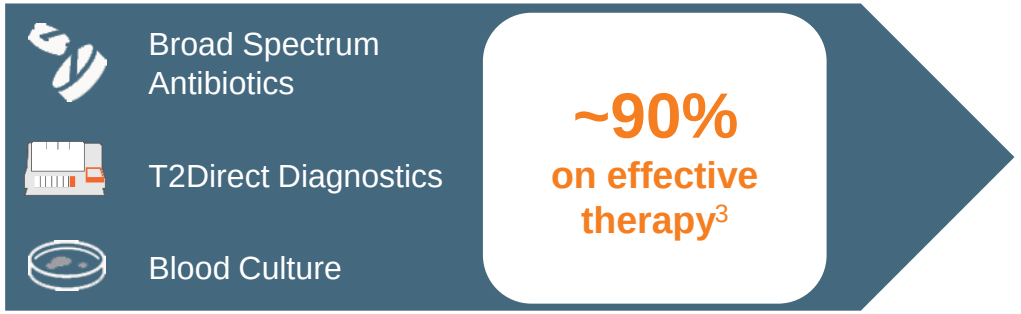


1. T2Bacteria Pivotal Clinical Study. Overall average sensitivity of 90% in prospective arm and 97% PPA in contrived arm.
2. Mylonakis, E., Clancy, C. J., Ostrosky-Zeichner, L., et. al. (2015). T2 magnetic resonance assay for the rapid diagnosis of candidemia in whole blood: a clinical trial. Clinical infectious diseases, ciu959.

A Simple Change, an Immense Impact



Proposed T2 Protocol



Which translates to…

1,400+ Lives Saved Per Week

$215M+ Dollars Saved Per Week

…in the US alone[4]

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.

T2Candida Panel is Changing Treatment Protocols

Growing number of real-world T2Candida success stories

Henry Ford Health System

- 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]

Lee Health — Caring People. Inspiring Health.

- 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 tested[2]

Huntsville Hospital

- Pharmacy savings of ~$280 per patient
- T2Candida detected 56% more positive patients than blood culture[3]

Riverside Community Hospital

- 100% of patients who tested positive received appropriate therapy in <9 hours
- Therapy was discontinued for all patients who tested negative[4]

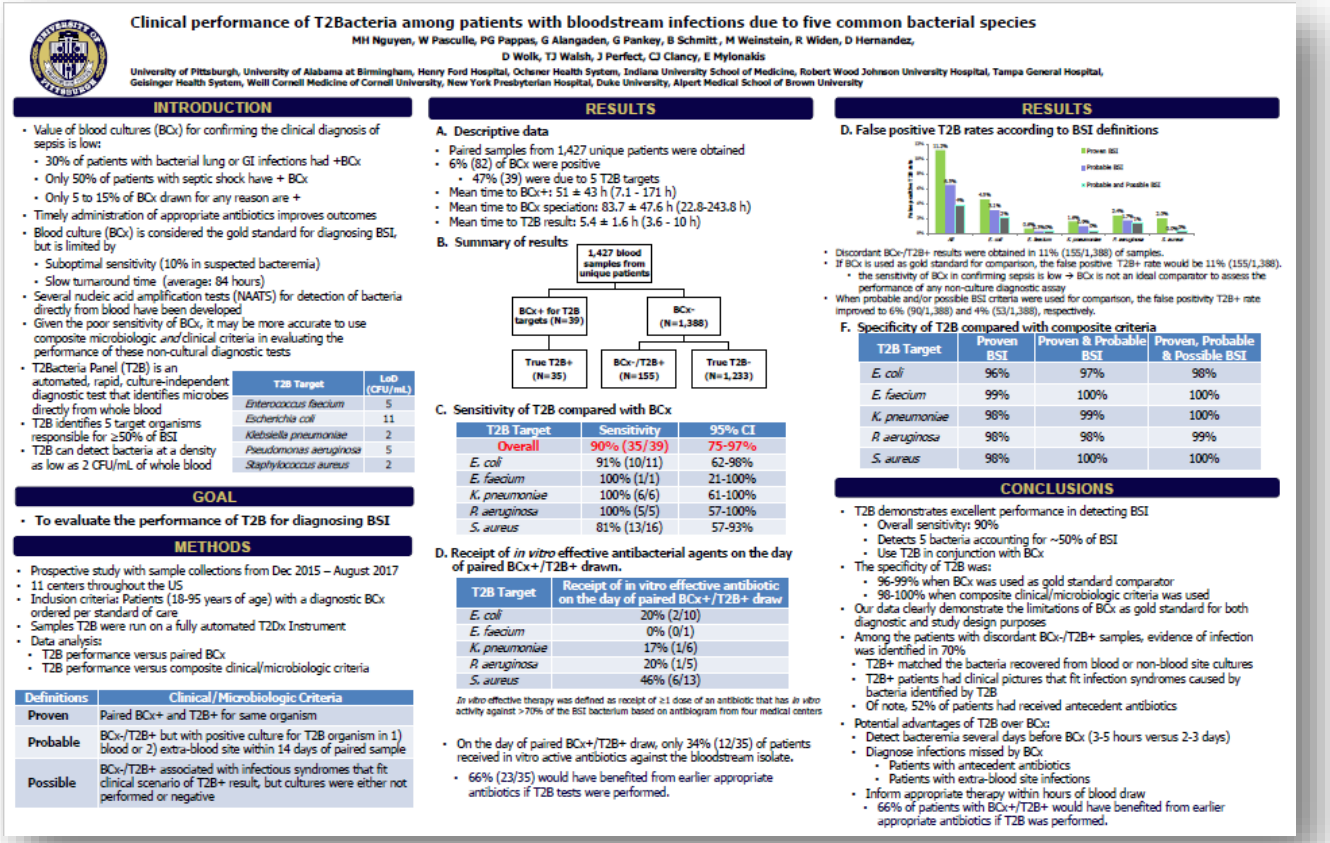
1. Wilson, N.M., Kenney, R.M., Tibbetts, R.J., et. al. T2 Magnetic Resonance Improves the Timely Management of Candidemia. Poster Presentation IDWeek 2016.
2. Estrada, S. J. Real World Value of T2Candida Lee Memorial Hospital. Slide Presentation ASM 2016.
3. Kateon, H., Edwards, J., Sawyer, A., et al. 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.

T2Bacteria Pivotal Data Presented at ASM Microbe 2018

1,400 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



Clinical performance of T2Bacteria among patients with bloodstream infections due to five common bacterial species

MH Nguyen, W Pasculle, PG Pappas, G Alangaden, G Pankey, B Schmitt, M Weinstein, R Widen, D Hernandez, D Wolk, TJ Walsh, J Perfect, CJ Clancy, E Mylonakis

University of Pittsburgh, University of Alabama at Birmingham, Henry Ford Hospital, Ochsner Health System, Indiana University School of Medicine, Robert Wood Johnson University Hospital, Tampa General Hospital, Geisinger Health System, Weill Cornell Medicine of Cornell University, New York Presbyterian Hospital, Duke University, Alpert Medical School of Brown University

INTRODUCTION

- Value of blood cultures (BCx) for confirming the clinical diagnosis of sepsis is low:
  - 30% of patients with bacterial lung or GI infections had +BCx
  - Only 50% of patients with septic shock have + BCx
  - Only 5 to 15% of BCx drawn for any reason are +
- Timely administration of appropriate antibiotics improves outcomes
- Blood culture (BCx) is considered the gold standard for diagnosing BSI, but is limited by
  - Suboptimal sensitivity (10% in suspected bacteremia)
  - Slow turnaround time (average: 84 hours)
- Several nucleic acid amplification tests (NAATS) for detection of bacteria directly from blood have been developed
- Given the poor sensitivity of BCx, it may be more accurate to use composite microbiologic *and* clinical criteria in evaluating the performance of these non-cultural diagnostic tests
- T2Bacteria Panel (T2B) is an automated, rapid, culture-independent diagnostic test that identifies microbes directly from whole blood
- T2B identifies 5 target organisms responsible for ≥50% of BSI
- T2B can detect bacteria at a density as low as 2 CFU/mL of whole blood

T2B Target	LoD (CFU/mL)
Enterococcus faecium	5
Escherichia coli	11
Klebsiella pneumoniae	2
Pseudomonas aeruginosa	5
Staphylococcus aureus	2

GOAL

- **To evaluate the performance of T2B for diagnosing BSI**

METHODS

- Prospective study with sample collections from Dec 2015 – August 2017
- 11 centers throughout the US
- Inclusion criteria: Patients (18-95 years of age) with a diagnostic BCx ordered per standard of care
- Samples T2B were run on a fully automated T2Dx Instrument
- Data analysis:
  - T2B performance versus paired BCx
  - T2B performance versus composite clinical/microbiologic criteria

Definitions	Clinical/Microbiologic Criteria
Proven	Paired BCx+ and T2B+ for same organism
Probable	BCx-/T2B+ but with positive culture for T2B organism in 1) blood or 2) extra-blood site within 14 days of paired sample
Possible	BCx-/T2B+ associated with infectious syndromes that fit clinical scenario of T2B+ result, but cultures were either not performed or negative

RESULTS

A. Descriptive data

- Paired samples from 1,427 unique patients were obtained
- 6% (82) of BCx were positive
  - 47% (39) were due to 5 T2B targets
- Mean time to BCx+: 51 ± 43 h (7.1 - 171 h)
- Mean time to BCx speciation: 83.7 ± 47.6 h (22.8-243.8 h)
- Mean time to T2B result: 5.4 ± 1.6 h (3.6 - 10 h)

B. Summary of results

C. Sensitivity of T2B compared with BCx

T2B Target	Sensitivity	95% CI
Overall	**90% (35/39)**	**75-97%**
E. coli	91% (10/11)	62-98%
E. faecium	100% (1/1)	21-100%
K. pneumoniae	100% (6/6)	61-100%
P. aeruginosa	100% (5/5)	57-100%
S. aureus	81% (13/16)	57-93%

D. Receipt of *in vitro* effective antibacterial agents on the day of paired BCx+/T2B+ drawn.

T2B Target	Receipt of in vitro effective antibiotic on the day of paired BCx+/T2B+ draw
E. coli	20% (2/10)
E. faecium	0% (0/1)
K. pneumoniae	17% (1/6)
P. aeruginosa	20% (1/5)
S. aureus	46% (6/13)

In vitro effective therapy was defined as receipt of ≥1 dose of an antibiotic that has *in vitro* activity against >70% of the BSI bacterium based on antibiogram from four medical centers

- On the day of paired BCx+/T2B+ draw, only 34% (12/35) of patients received in vitro active antibiotics against the bloodstream isolate.
  - 66% (23/35) would have benefited from earlier appropriate antibiotics if T2B tests were performed.

RESULTS

D. False positive T2B rates according to BSI definitions

- Discordant BCx-/T2B+ results were obtained in 11% (155/1,388) of samples.
- If BCx is used as gold standard for comparison, the false positive T2B+ rate would be 11% (155/1,388).
  - the sensitivity of BCx in confirming sepsis is low → BCx is not an ideal comparator to assess the performance of any non-culture diagnostic assay
- When probable and/or possible BSI criteria were used for comparison, the false positivity T2B+ rate improved to 6% (90/1,388) and 4% (53/1,388), respectively.

F. Specificity of T2B compared with composite criteria

T2B Target	Proven BSI	Proven & Probable BSI	Proven, Probable & Possible BSI
E. coli	96%	97%	98%
E. faecium	99%	100%	100%
K. pneumoniae	98%	99%	100%
P. aeruginosa	98%	98%	99%
S. aureus	98%	100%	100%

CONCLUSIONS

- T2B demonstrates excellent performance in detecting BSI
  - Overall sensitivity: 90%
  - Detects 5 bacteria accounting for ~50% of BSI
  - Use T2B in conjunction with BCx
- The specificity of T2B was:
  - 96-99% when BCx was used as gold standard comparator
  - 98-100% when composite clinical/microbiologic criteria was used
- Our data clearly demonstrate the limitations of BCx as gold standard for both diagnostic and study design purposes
- Among the patients with discordant BCx-/T2B+ samples, evidence of infection was identified in 70%
  - T2B+ matched the bacteria recovered from blood or non-blood site cultures
  - T2B+ patients had clinical pictures that fit infection syndromes caused by bacteria identified by T2B
  - Of note, 52% of patients had received antecedent antibiotics
- Potential advantages of T2B over BCx:
  - Detect bacteremia several days before BCx (3-5 hours versus 2-3 days)
  - Diagnose infections missed by BCx
    - Patients with antecedent antibiotics
    - Patients with extra-blood site infections
  - Inform appropriate therapy within hours of blood draw
    - 66% of patients with BCx+/T2B+ would have benefited from earlier appropriate antibiotics if T2B was performed.

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 hours[3]

Billions of Dollars

In savings for hospitals, including decreased readmissions[4]

50% Reduction

In mortality for patients with rapid effective treatment[5]

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: $35,000[1]

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

1% of DRG

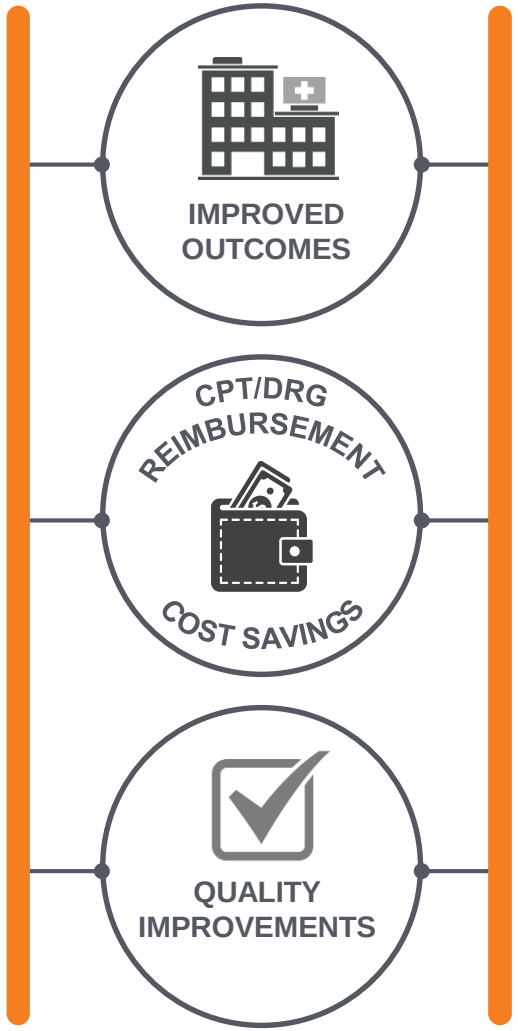
1. Example DRG reimbursement. DRG reimbursement varies based on hospital and patient factors.

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

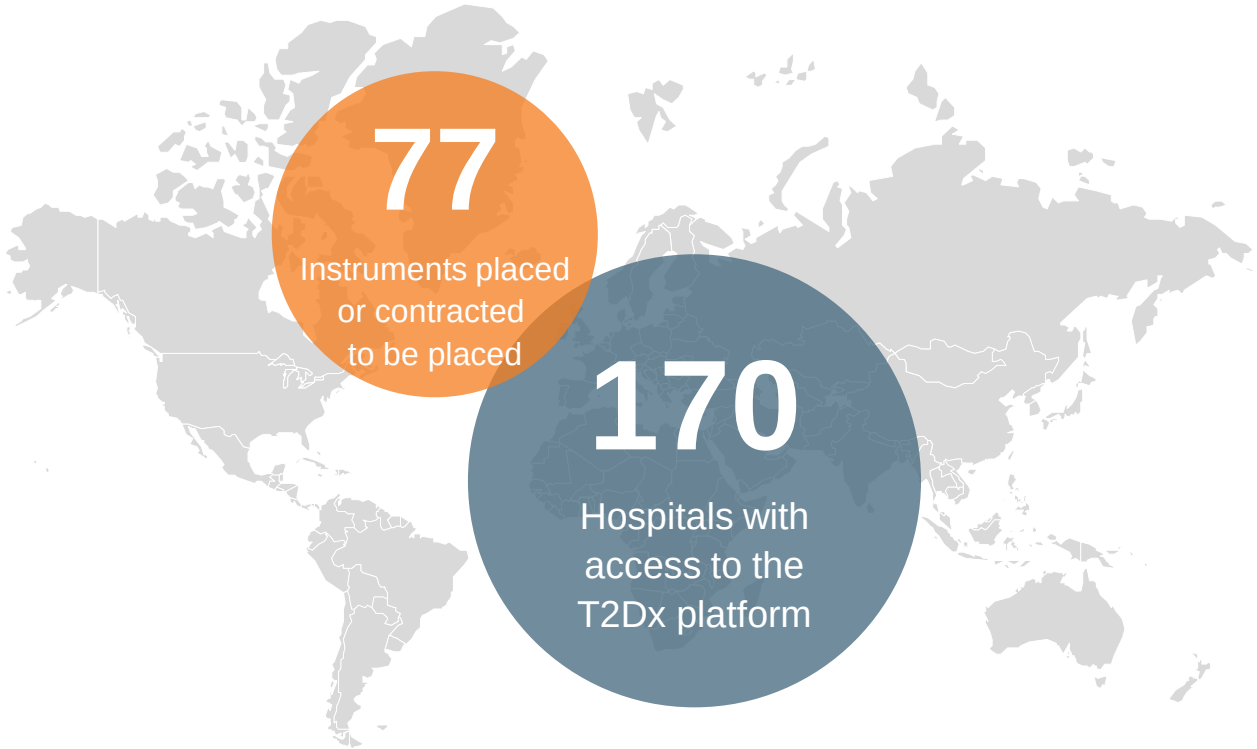
- **Organization:** 15 sales reps, expanding to 16 Y/E 2018, and 3 medical affairs liaisons expanding to 5 by Y/E 2018
- Target: 1,200 hospitals with the highest concentration of patients at risk for sepsis-related infections

International

Distributor Sales in 19 Countries

- 8 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

asm microbe 2018 JUNE 7–11 ATLANTA

October 3-7 • San Francisco, CA • www.idweek.org
IDWeek 2018
Advancing Science, Improving Care

Society of Critical Care Medicine
The Intensive Care Professionals

ashp

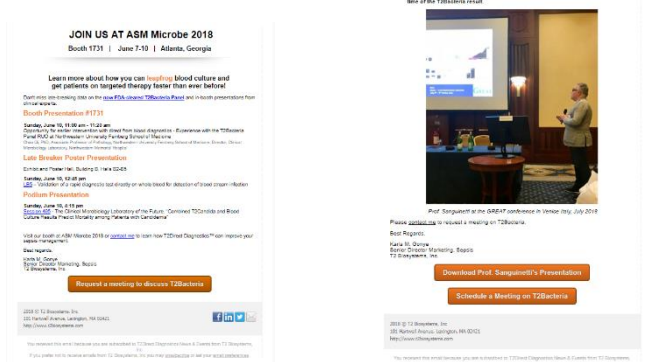
LIVES 2018 31st ANNUAL CONGRESS PARIS

WORLD ANTI-MICROBIAL RESISTANCE CONGRESS 2018

29th ECCMID Amsterdam, Netherlands 13 – 16 April 2019

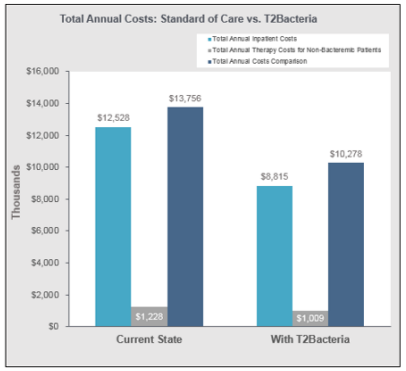
Digital Marketing

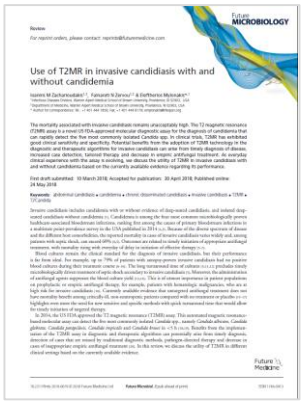
Targeted Social Media and Email Campaigns



Publications / Economic Models

T2Direct Diagnostics™ Economic Model

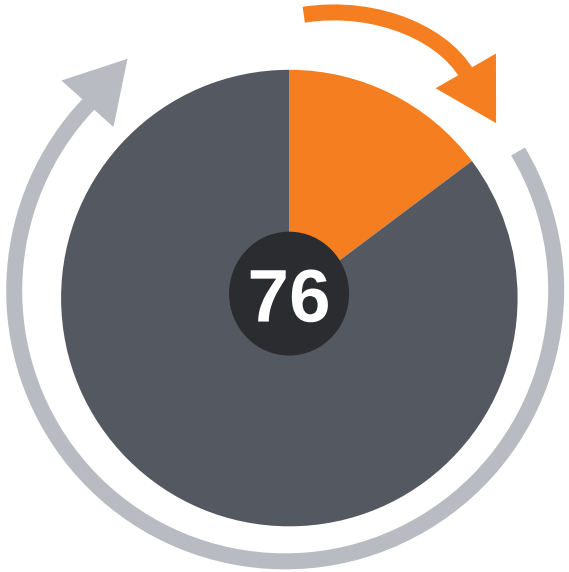




Commercial Activity Related to T2Bacteria Launch

Step up in proposals is first leading indicator

New proposals delivered to U.S. customers during 4Q17-3Q18



11 of these proposals have been converted to new contracts

6-12 month sales cycle

New Proposals New Contracts

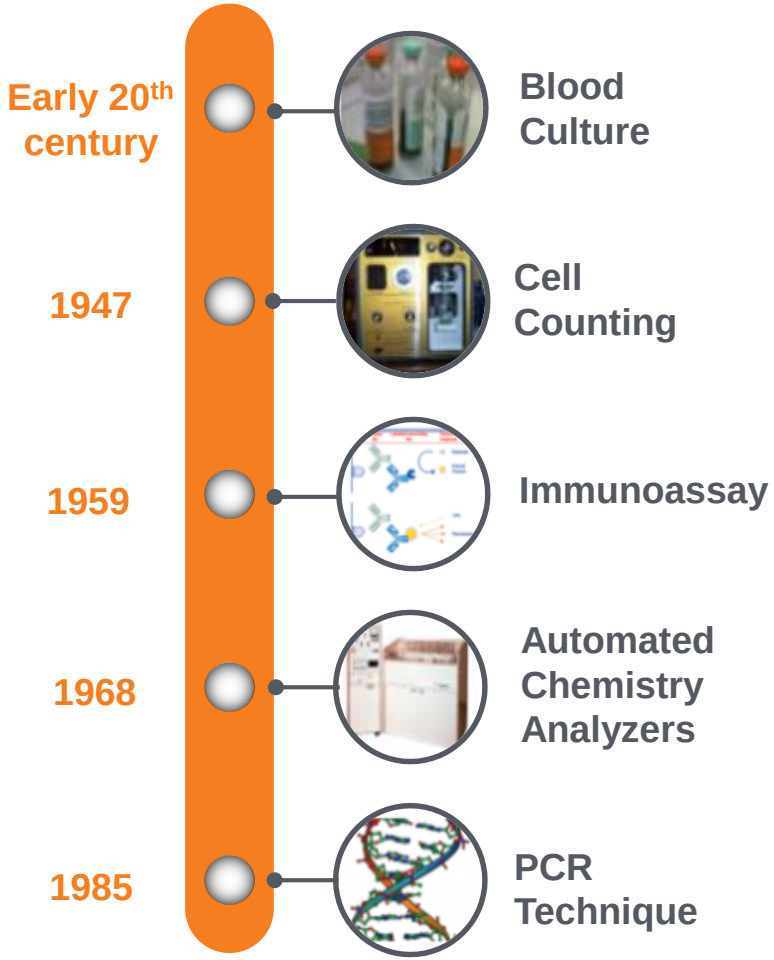
2-3X

increase in customer proposals versus prior year (4Q16-3Q17)

Opportunity to double U.S. installed base

Breakthroughs in Medical Diagnostics

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



Direct Sample Analysis

Identify Pathogens Using Magnetic Resonance

Product Pipeline Highlights – Enabled by Highly-Sensitive Detection

Directly from whole blood – no requirement for blood culture

SEPSIS

	2016	2017 & 2018	2019 & beyond	
FUNGAL	**T2Candida Panel** CE Marked & FDA cleared	***Candida auris* assay** Research Use Only including environmental testing		**T2Candida Panel** Including pan-*Candida*
BACTERIAL		**T2Bacteria Panel** CE Marked & FDA cleared	**T2Carba Resistance+** Gram-negative resistance markers	**CARB-X** Additional bacterial species and resistance markers, including ESBL and gram-positive
BACTERIAL RESISTANCE			Allergan Powered by CARB-X	Powered by CARB-X
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 Summary[1]

September 30, 2018		
Revenue	3Q18	$2.5M
	2Q18	$3.9M
	3Q17	$1.1M
Product Revenue	3Q18	$1.2M
	2Q18	$1.2M
	3Q17	$0.7M
Product Growth	YoY	71%
Cash Burn	3Q18	$10.5M
Cash[4]		$60.4M
Common Shares Outstanding		43.8M
Quarterly Cash Burn (2018 vs. 2017)		-12.5% YoY

>5% Investors – As of September 30, 2018[2,3]	
Canon Life Sciences	13.8%
Goldman Sachs	9.7%
Senvest Management	7.6%

1. All amounts are rounded to the nearest hundred thousand.
2. Based on 44,038,754 shares outstanding as of September 30, 2018.
3. Source SEC filings as of November 7, 2018.
4. Includes $180k restricted cash.

Guidance

2018 Guidance	
Total revenue	**$10.5 - $12.0 million**
Product revenue	$5.0 - $5.9 million
Research revenue	$5.5 - $6.1 million
2H18 T2Dx placements:	**20 - 25**
2H18 high-risk patient adds:	**75,000+ achieved 35,000+ in 4Q18**
3Q & 4Q operating expense:[1]	**$10.8 - $11.8 million[2]**

Long-Term Targets	
Total revenue	Doubling in 2019 and 2020 to at least $50 million in 2020
Breakeven model:	
Total revenue	$65 - $70 million
Gross margin	~50%
SG&A	~30 - 35%
R&D	~15 - 20%

1. Excluding cost of product revenue.
2. including non-cash depreciation and stock based compensation expenses of approximately $2.0 million in each quarter and non-cash stock based compensation from performance-based RSUs of $0.8 million in each quarter.

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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