### The YODA Project Research Proposal Review

The following page contains the final YODA Project review approving this proposal.

# The YODA Project Research Proposal Review - Final (Protocol #: 2021-4754 )

ewers:	
Nihar Desai	
Cary Gross	
Harlan Krumholz	
Richard Lehman	
Joseph Ross	
-	Decision:
proposal clearly described?	Yes
Will request create or materially enhance generalizable scientific and/or medical knowledge to inform science and public health?	Yes
Can the proposed research be reasonably addressed using the requested data?	Yes, or it's highly likely
Recommendation for this data request:	Approve
ments:	
ditional comments	
	Nihar Desai Cary Gross Harlan Krumholz Richard Lehman Joseph Ross  Ew Questions: Is the scientific purpose of the research proposal clearly described?  Will request create or materially enhance generalizable scientific and/or medical knowledge to inform science and public health?  Can the proposed research be reasonably

### The YODA Project Research Proposal Review

Revisions were requested during review of this proposal.

The following pages contain the original YODA Project review and the original submitted proposal.

# The YODA Project Research Proposal Review - Revisions Requested (Protocol #: 2021-4754 )

Reviewers:  ☐ Nihar Desai  ☑ Cary Gross ☐ Harlan Krumholz ☑ Richard Lehman ☑ Joseph Ross	
Review Questions:	Decision:
<ol> <li>Is the scientific purpose of the res proposal clearly described?</li> </ol>	search <sub>Yes</sub>
2. Will request create or materially engeneralizable scientific and/or me knowledge to inform science and health?	edical
<ol><li>Can the proposed research be rea addressed using the requested da</li></ol>	•
4. Recommendation for this data rec	quest: Not Approve
Comments:	
Ranking (DOOR) in measuring the risk-benefit profile of proposal difficult to evaluate, as it was short on detail. It whether it had already been developed, how it is developed these trials are quite heterogeneous, examining different and who were assessed on the basis of different primary	was left with little understanding of DOOR as a measure,



#### **Principal Investigator**

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Last Name: Radhakrishnan

Degree: MBBS, MD

Primary Affiliation: Yale University E-mail: <a href="mailto:rajiv.radhakrishnan@yale.edu">rajiv.radhakrishnan@yale.edu</a>

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300 George St, Suite 901

City: New Haven

State or Province: CT

Zip or Postal Code: 06510

Country: USA

#### **General Information**

Key Personnel (in addition to PI):

First Name: Xin Last name: Zhou Degree: PhD

Primary Affiliation: Yale University

Are external grants or funds being used to support this research?: No external grants or funds are being used to support this research.

How did you learn about the YODA Project?: Email/Newsletter/Flier

#### **Conflict of Interest**

https://yoda.yale.edu/system/files/radhakrishnan\_coi.pdf https://yoda.yale.edu/system/files/xin\_coi.pdf

#### Certification

**Certification:** All information is complete; I (PI) am responsible for the research; data will not be used to support litigious/commercial aims.

**Data Use Agreement Training:** As the Principal Investigator of this study, I certify that I have completed the YODA Project Data Use Agreement Training

- NCT00488319 R076477PSZ3002 A 2-Year, Open-Label, Single-Arm Safety Study of Flexibly Dosed Paliperidone Extended Release (1.5-12 mg/day) in the Treatment of Adolescents (12 to 17 Years of Age) With Schizophrenia
- 2. NCT01009047 R076477PSZ3003 A Randomized, Multicenter, Double-Blind, Active-Controlled, Flexible-Dose, Parallel-Group Study of the Efficacy and Safety of Prolonged Release Paliperidone for the Treatment of Symptoms of Schizophrenia in Adolescent Subjects, 12 to 17 Years of Age
- 3. NCT00645099 R076477SCH3020 A Prospective Randomized Open-label 6-Month Head-To-Head Trial to Compare Metabolic Effects of Paliperidone ER and Olanzapine in Subjects With Schizophrenia
- 4. NCT00518323 R076477PSZ3001 A Randomized, Multicenter, Double-Blind, Weight-Based, Fixed-Dose, Parallel-Group, Placebo-Controlled Study of the Efficacy and Safety of Extended Release Paliperidone for the Treatment of Schizophrenia in Adolescent Subjects, 12 to 17 Years of Age
- 5. NCT00334126 R076477SCH3015 A Randomized, Double-blind, Placebo-controlled, Parallel Group



- Study to Evaluate the Efficacy and Safety of Paliperidone ER Compared to Quetiapine in Subjects With an Acute Exacerbation of Schizophrenia
- 6. NCT00086320 R076477-SCH-301 A Randomized, Double-blind, Placebo-controlled, Parallel-group Study With an Open-label Extension Evaluating Paliperidone Extended Release Tablets in the Prevention of Recurrence in Subjects With Schizophrenia
- 7. NCT00650793 R076477-SCH-703 A Randomized, DB, PC and AC, Parallel Group, Dose-Response Study to Evaluate the Efficacy and Safety of 3 Fixed Dosages of Extended Release OROS Paliperidone (6, 9, 12 mg/Day) and Olanzapine (10 mg/Day), With Open-Label Extension, in the Treatment of Subjects With Schizophrenia Open Label Phase
- 8. NCT00589914 R092670PSY3006 A Randomized, Double-Blind, Parallel-Group, Comparative Study of Flexible Doses of Paliperidone Palmitate and Flexible Doses of Risperidone Long-Acting Intramuscular Injection in Subjects With Schizophrenia
- 9. NCT00604279 R092670PSY3008 A Randomized, Open-Label, Parallel Group Comparative Study of Paliperidone Palmitate (50, 100, 150 mg eq) and Risperidone LAI (25, 37.5, or 50 mg) in Subjects with Schizophrenia
- 10. NCT00590577 R092670PSY3007 A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Dose Response Study to Evaluate the Efficacy and Safety of 3 Fixed Doses (25 mg eq., 100 mg eq., and 150 mg eq.) of Paliperidone Palmitate in Subjects With Schizophrenia
- 11. NCT00111189 R092670PSY3001 A Randomized Double-blind Placebo-controlled Parallel Group Study
  Evaluating Paliperidone Palmitate in the Prevention of Recurrence in Patients With Schizophrenia. Placebo
  Consists of 20% Intralipid (200 mg/mL) Injectable Emulsion
- 12. NCT00210717 R092670PSY3002 A Randomized, Double-Blind, Parallel Group, Comparative Study of Flexibly Dosed Paliperidone Palmitate (25, 50, 75, or 100 mg eq.) Administered Every 4 Weeks and Flexibly Dosed RISPERDAL CONSTA (25, 37.5, or 50 mg) Administered Every 2 Weeks in Subjects With Schizophrenia
- 13. NCT00119756 R092670PSY3005 A Randomized, Crossover Study to Evaluate the Overall Safety and Tolerability of Paliperidone Palmitate Injected in the Deltoid or Gluteus Muscle in Patients With Schizophrenia
- 14. NCT00210548 R092670PSY3003 A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Dose-Response Study to Evaluate the Efficacy and Safety of 3 Fixed Doses (50 mg eq., 100 mg eq., and 150 mg eq.) of Paliperidone Palmitate in Subjects With Schizophrenia
- 15. NCT00101634 R092670PSY3004 A Randomized, Double-blind, Placebo-controlled, Parallel-group, Dose-response Study to Evaluate the Efficacy and Safety of 3 Fixed Doses (25 mg eq. 50 mg eq. and 100 mg eq) of Paliperidone Palmitate in Patients With Schizophrenia
- 16. NCT00034749 RIS-USA-231 The Efficacy and Safety of Risperidone in Adolescents With Schizophrenia: a Comparison of Two Dose Ranges of Risperidone
- 17. NCT00397033 R076477SCA3001 A Randomized, Double-blind, Placebo-controlled, Parallel-group
  Study to Evaluate the Efficacy and Safety of Two Dosages of Paliperidone ER in the Treatment of Patients
  With Schizoaffective Disorder
- 18. NCT00412373 R076477SCA3002 A Randomized, Double-blind, Placebo-controlled, Parallel- Group Study to Evaluate the Efficacy and Safety of Flexible-dose Paliperidone ER in the Treatment of Patients With Schizoaffective Disorder
- NCT00236444 CR002020 (RIS-INT-79) Risperidone in the Prevention of Relapse: a Randomized, Double-blind, Placebo-controlled Trial in Children and Adolescents With Conduct and Other Disruptive Behavior Disorders
- NCT00266552 CR006019 (RIS-USA-93) The Safety And Efficacy Of Risperidone Versus Placebo In Conduct Disorder and Other Disruptive Behavior Disorders In Mild, Moderate And Borderline Mentally Retarded Children Aged 5 To 12 Years
- 21. NCT00249132 RIS-INT-3 A Canadian multicenter placebo-controlled study of fixed doses of risperidone and haloperidol in the treatment of chronic schizophrenic patients
- 22. NCT00216476 RISSCH3001 CONSTATRE: Risperdal® Consta® Trial of Relapse Prevention and Effectiveness
- 23. NCT00216580 RIS-PSY-301 An Open-label Trial of Risperidone Long-acting Injectable in the Treatment of Subjects With Recent Onset Psychosis
- 24. NCT00378092 CR011992, RISSCH3024 A Prospective Study of the Clinical Outcome Following Treatment Discontinuation After Remission in First-Episode Schizophrenia
- 25. NCT00752427 R076477-SCH-702 24 week extension of NCT00085748: A Randomized, 6-Week Double-Blind, Placebo-Controlled Study With an Optional 24-Week Open-Label Extension to Evaluate the Safety and Tolerability of Flexible Doses of Paliperidone Extended Release in the Treatment of Geriatric Patients



#### With Schizophrenia

- 26. NCT00077714 R076477-SCH-304 A Randomized, Double-blind, Placebo- and Active-controlled, Parallel-group, Dose-response Study to Evaluate the Efficacy and Safety of 2 Fixed Dosages of Paliperidone Extended Release Tablets and Olanzapine, With Open-label Extension, in the Treatment of Patients With Schizophrenia
- 27. NCT00083668 R076477-SCH-305 A Randomized, Double-blind, Placebo- and Active-controlled, Parallel-group, Dose-response Study to Evaluate the Efficacy and Safety of 3 Fixed Dosages of Paliperidone Extended Release (ER) Tablets and Olanzapine, With Open-label Extension, in the Treatment of Patients With Schizophrenia
- 28. NCT00074477 R092670-SCH-201 A Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of 50 and 100 Mg-eg of Paliperidone Palmitate in Patients With Schizophrenia
- 29. NCT00078039 R076477-SCH-303 Trial Evaluating Three Fixed Dosages of Paliperidone Extended-Release (ER) Tablets and Olanzapine in the Treatment of Patients With Schizophrenia
- 30. NCT00085748 R076477-SCH-302 A Randomized, 6-Week Double-Blind, Placebo-Controlled Study With an Optional 24-Week Open-Label Extension to Evaluate the Safety and Tolerability of Flexible Doses of Paliperidone Extended Release in the Treatment of Geriatric Patients With Schizophrenia
- 31. NCT00249145 RIS-INT-24/CR006046 Risperidone in the Treatment of Behavioral Disturbances in Demented Patients: an International, Multicenter, Placebo-controlled, Double-blind, Parallel-group Trial Using Haloperidol as Internal Reference
- 32. NCT00088075 RIS-SCH-302/CR003370 A Randomized, Double-Blind, Placebo-Controlled Clinical Study of the Efficacy and Safety of Risperidone for the Treatment of Schizophrenia in Adolescents
- 33. NCT00253136 RIS-USA-121/CR006055 Risperidone Depot (Microspheres) vs. Placebo in the Treatment of Subjects With Schizophrenia
- 34. RIS-USA-72 The safety and efficacy of risperidone 8 mg qd and 4 mg qd compared to placebo in the treatment of schizophrenia
- 35. NCT01529515 R092670PSY3012 A Randomized, Multicenter, Double-Blind, Relapse Prevention Study of Paliperidone Palmitate 3 Month Formulation for the Treatment of Subjects With Schizophrenia
- 36. NCT01193153 R092670SCA3004 A Randomized, Double-Blind, Placebo-Controlled, Parellel-Group Study of Paliperidone Palmitate Evaluating Time to Relapse in Subjects With Schizoaffective Disorder
- 37. NCT01662310 R076477-SCH-3041 Paliperidone Extended Release Tablets for the Prevention of Relapse in Subjects With Schizophrenia: A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study
- 38. NCT00524043 R076477SCH4012 A Randomized, Double-Blind, Placebo- and Active-Controlled,
  Parallel-Group Study to Evaluate the Efficacy and Safety of a Fixed Dosage of 1.5 mg/Day of Paliperidone
  Extended Release (ER) in the Treatment of Subjects With Schizophrenia
- 39. NCT00105326 R076477-SCH-1010/CR002281 A Double-blind, Placebo-controlled, Randomized Study Evaluating the Effect of Paliperidone ER Compared With Placebo on Sleep Architecture in Subjects With Schizophrenia
- 40. NCT00645307 R076477-SCH-701 A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study With an Open-Label Extension Evaluating Extended Release OROS® Paliperidone in the Prevention of Recurrence in Subjects With Schizophrenia Open Label Phase
- 41. NCT00044681 RIS-INT-93 A Study to Evaluate the Efficacy, Safety and Maintenance Effect of Risperidone Augmentation of SSRI Monotherapy in Young and Older Adult Patients With Unipolar Treatment-Resistant Depression
- 42. NCT00249223 RIS-INT-61 Risperidone Depot (Microspheres) vs. Risperidone Tablets a Non-inferiority, Efficacy Trial in Subjects With Schizophrenia
- 43. NCT01157351 R092670SCH3006 A Fifteen-month, Prospective, Randomized, Active-controlled, Openlabel, Flexible Dose Study of Paliperidone Palmitate Compared With Oral Antipsychotic Treatment in Delaying Time to Treatment Failure in Adults With Schizophrenia Who Have Been Incarcerated
- 44. NCT01081769 R092670SCH3005 A 24-month, Prospective, Randomized, Active-Controlled, Open-Label, Rater-Blinded, Multicenter, International Study of the Prevention of Relapse Comparing Long-Acting Injectable Paliperidone Palmitate to Treatment as Usual With Oral Antipsychotic Monotherapy in Adults With Schizophrenia
- 45. NCT01281527 R092670SCH3010 A 6-month, Open Label, Prospective, Multicenter, International, Exploratory Study of a Transition to Flexibly Dosed Paliperidone Palmitate in Patients With Schizophrenia Previously Unsuccessfully Treated With Oral or Long-acting Injectable Antipsychotics
- 46. NCT01051531 R092670SCH3009 Safety, Tolerability, and Treatment Response of Paliperidone Palmitate in Subjects With Schizophrenia When Switching From Oral Antipsychotics
- 47. NCT01527305 R092670SCH4009 An Open-Label, Prospective, Non-Comparative Study to Evaluate the



- Efficacy and Safety of Paliperidone Palmitate in Subjects With Acute Schizophrenia
- 48. NCT01299389 PALM-JPN-4 A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Fixed-Dose, Multicenter Study of JNS010 (Paliperidone Palmitate) in Patients With Schizophrenia
- 49. NCT01258920 PALM-JPN-5 A Long-Term, Open-Label Study of Flexibly Dosed Paliperidone Palmitate Long-Acting Intramuscular Injection in Japanese Patients With Schizophrenia
- 50. NCT00216671 RISSCH4045 Early Versus Late Initiation of Treatment With Risperdal Consta in Subjects With Schizophrenia After an Acute Episode
- 51. NCT00369239 RISSCH4043 Is Premorbid Functioning a Predictor of Outcome in Patients With Early Onset Psychosis Treated With Risperdal Consta?
- 52. NCT00216632 RISSCH4026 Treatment Success in Patients Requiring Treatment Change From Olanzapine to Risperidone Long Acting Injectable (TRESOR)
- 53. NCT00236379 RIS-USA-275 A Six-month, Double-blind, Randomized, International, Multicenter Trial to Evaluate the Glucoregulatory Effects of Risperidone and Olanzapine in Subjects With Schizophrenia or Schizoaffective Disorder
- 54. NCT01050582 RISNAP4022 Evaluation of Growth, Sexual Maturation, and Prolactin-Related Adverse Events in the Pediatric Population Exposed to Atypical Antipsychotic Drugs
- 55. NCT00495118 RIS-INT-80 Risperidone Depot (Microspheres) in the Treatment of Subjects With Schizophrenia or Schizoaffective Disorder an Open-label Follow-up Trial of RIS-INT-62 and RIS-INT-85
- 56. NCT00236457 RIS-INT-62 Randomized, Multi-center, Open Label Trial Comparing Risperidone Depot (Microspheres) and Olanzapine Tablets in Patients With Schizophrenia or Schizoaffective Disorder
- 57. NCT00236587 RIS-USA-265 An Open Label, Long Term Trial of Risperidone Long Acting Microspheres in the Treatment of Patients Diagnosed With Schizophrenia
- 58. NCT00297388 RIS-SCH-401 A 52-wk Prospective, Randomized, Double-blind, Multicenter Study of Relapse Following Transition From Oral Antipsychotic Medication to 2 Different Doses (25 or 50 mg Every 2 Wks) of Risperidone Long-acting Microspheres (RISPERDAL CONSTA) in Adults With Schizophrenia or Schizoaffective Disorder
- 59. NCT00821600 RIS-SCH-1012 Single-Dose, Open-Label Pilot Study to Explore the Pharmacokinetics, Safety and Tolerability of a Gluteal Intramuscular Injection of a 4-Week Long-Acting Injectable Formulation of Risperidone in Patients With Chronic Stable Schizophrenia
- 60. NCT00299702 RISSCH4060 A 2-year, Prospective, Blinded-rater, Open-label, Active-controlled, Multicenter, Randomized Study of Long-term Efficacy and Effectiveness Comparing Risperdal® Consta® and Abilify® (Aripiprazole) in Adults With Schizophrenia
- 61. N/A RIS-INT-85 Open-label Study Exploring a Switching Regimen From Depot Neuroleptics to Risperidone Depot Microspheres
- 62. NCT00034775 RIS-USA-259 Open-Label Trial Exploring A Switching Regimen From Oral Neuroleptics, Other Than Risperidone, To Risperidone Depot Microspheres
- 63. NCT00460512 R076477SCH3017 An Open-label Prospective Trial to Explore the Tolerability, Safety and Efficacy of Flexibly Dosed Paliperidone ER in Subjects With Schizophrenia
- 64. NCT00566631 R076477SCH3018 Tolerability, Safety and Treatment Response of Flexible Doses of Paliperidone ER in Acutely Exacerbated Subjects With Schizophrenia
- 65. NCT01515423 R092670PSY3011 A Randomized, Multicenter, Double-Blind, Non-inferiority Study of Paliperidone Palmitate 3 Month and 1 Month Formulations for the Treatment of Subjects With Schizophrenia
- 66. NCT02713282 R092670SCH3015 A 52-Week, Open-Label, Prospective, Multicenter, International Study of a Transition to the Paliperidone Palmitate 3-Month Formulation In Patients With Schizophrenia Previously Stabilized on the Paliperidone Palmitate 1-Month Formulation

What type of data are you looking for?: Individual Participant-Level Data, which includes Full CSR and all supporting documentation

#### **Research Proposal**

#### **Project Title**

Harnessing clinical trial data to inform real-world clinical decision making in the treatment of schizophrenia

#### **Narrative Summary:**



Randomized clinical trials (RCT) provide rich data related to safety and efficacy of pharmacological agents. This is often at variance with real-world data since patients in the real-world i.e. (real-world data (RWD)) are not constrained by RCT design. Even when the results of RCT and RWD are consistent, they often do not apply directly to an individual patient who presents before a physician. We attempt to overcome these challenges by use of a novel statistical technique, Desirability of Outcome Ranking (DOOR), to better inform clinical-decision making in the treatment of schizophrenia.

#### **Scientific Abstract:**

Background: Randomized clinical trials (RCT) provide rich data related to safety and efficacy of pharmacological agents. This is often at variance with real-world data since patients in the real-world i.e. (real-world data (RWD)) are not constrained by RCT design. Even when the results of RCT and RWD are consistent, they often do not apply directly to an individual patient who presents before a physician.

Objectives: To examine the utility of Desirability of Outcome Ranking (DOOR) in measuring the risk-benefit profile of antipsychotic treatment in schizophrenia.

Study Design: Randomized control trial data will be reanalyzed using Desirability of Outcome Ranking (DOOR), a measure that combines clinically-relevant risks and benefits.

Participants: Subject-level data from randomized, placebo-controlled studies of risperidone and paliperidone in schizophrenia patients.

Main Outcome Measures: Utility of DOOR in characterizing treatment responders/non-responders and overall concordance with results of trial using traditional outcome measures.

Statistical Analysis: We will re-analyze the trial data using DOOR for finer gradations of composite outcomes. DOOR probability, proportion in favor of treatment, and win ratio will be used to compare treatments. Their 95% confidence intervals will be estimated by bootstrap.

#### **Brief Project Background and Statement of Project Significance:**

Randomized clinical trials (RCT) provide rich data related to safety and efficacy of pharmacological agents. This is often at variance with real-world data since patients in the real-world i.e. (real-world data (RWD)) are not constrained by RCT design. Even when the results of RCT and RWD are consistent, they often do not apply directly to an individual patient who presents before a physician. We attempt to overcome these challenges by use of a novel statistical technique, Desirability of Outcome Ranking (DOOR), to better inform clinical-decision making in the treatment of schizophrenia. DOOR has proven utility in antimicrobial therapy in conjunction with partial credit scoring to allow for quantitative comparisons of the clinical desirability of treatment decisions (Claeys et al, 2021, Evans et al, 2020). In this proposal, we extend this novel statistical technique to clinical decision making in antipsychotic treatment of schizophrenia.

#### Specific Aims of the Project:

The specific aims of the project are:

- a) Develop a Desirability of Outcome Ranking (DOOR) for schizophrenia trials
- b) Examine the utility of DOOR in characterizing treatment responders/non-responders and overall concordance with results of trial using traditional outcome measures

#### What is the purpose of the analysis being proposed? Please select all that apply.

Participant-level data meta-analysis

Participant-level data meta-analysis using only data from YODA Project

Develop or refine statistical methods

#### **Research Methods**

Data Source and Inclusion/Exclusion Criteria to be used to define the patient sample for your study:

Individual-level data from RCTs of risperidone and paliperidone in schizophrenia

#### Main Outcome Measure and how it will be categorized/defined for your study:



Desirability of Outcome Ranking (DOOR) will be defined a-priori from input from expert psychiatrists who have experience in treating patients with schizophrenia. The outcome is a composite outcome, combining the efficiency and safety measures together.

#### Main Predictor/Independent Variable and how it will be categorized/defined for your study:

The predictor / independent variable is the treatment assignment (i.e drug vs placebo). The analysis will include the treatment assignment, age, gender, race/ethnicity, and other potential risk factors.

## Other Variables of Interest that will be used in your analysis and how they will be categorized/defined for your study:

We will evaluate the heterogeneity of the composite outcomes in the subgroups of age, gender and race/ethnicity.

#### **Statistical Analysis Plan:**

We will generate tables that summarize the distribution and extent of missingness of potential risk factors, for example, age, gender, and race/ethnicity, overall and by treatment arm to assess for random baseline imbalances for the trial data.

Our interest is to compare the DOOR between two treatments. The DOOR probability, proportion in favor of treatment and win ratio will be estimated by making all possible pairwise comparisons between two treatment arms according to DOOR, and their 95% CI will be constructed using bootstrap.

We will also evaluate heterogeneity of the composite outcome in several pre-specified subgroups, for example, age, gender, and race/ethnicity. These are hypothesis generating analyses. We will use the method described above to evaluate the effect of treatments stratified by subgroup. All subgroup analyses will be clearly reported, including how subgroups will be defined, outcomes examined, and how both the point and interval estimates of treatment effects.

Software Used:

R

#### **Project Timeline:**

Estimation of key milestone dates for the proposed study:

- 1) Anticipated project start date = Nov-2021
- 2) Data analysis completion = May 2022
- 3) Dissemination of results= Nov 2022

#### **Dissemination Plan:**

Dissemination plan includes presentation at conferences (such as ASCP Annual conference, ISCTM annual meeting) and publication in peer-reviewed journals (such as Journal of Clinical Psychiatry).

#### Bibliography:

- 1. Claeys CK, Hopkins TL, Schlaffer K, Hitchcock S, Jiang Y, Evans S, Johnson JK, Leekha S. Comparing the Clinical Utility of Rapid Diagnostics for Treatment of Bloodstream Infections Using Desirability of Outcome Ranking Approach for the Management of Antibiotic Therapy (DOOR-MAT). Antimicrob Agents Chemother. 2021;65(9):e0044121.
- 2. Evans SR, Knutsson M, Amarenco P, Albers GW, Bath PM, et al. Methodologies for pragmatic and efficient assessment of benefits and harms: Application to the SOCRATES trial. Clin Trials. 2020 Dec;17(6):617-626.