

**AWARD NUMBER:** W81XWH-17-1-0532

**TITLE:** Multicenter Randomized Trial of Everolimus in Pediatric Heart Transplantation

**PRINCIPAL INVESTIGATOR:** Lynn A. Sleeper

**CONTRACTING ORGANIZATION:** Boston Children's Hospital, Boston, MA

**REPORT DATE:** OCTOBER 2023

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**PREPARED FOR:** U.S. Army Medical Research and Development Command  
Fort Detrick, Maryland 21702-5012

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# REPORT DOCUMENTATION PAGE

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<b>14. ABSTRACT</b> TEAMMATE is a multicenter randomized clinical trial of a novel immunosuppressive therapy that is studing children who have undergone recent heart transplantation. The primary goal is to determine whether a new rejection treatment (everolimus and low-dose tacrolimus) can reduce or prevent complications of transplant, including rejection, coronary artery disease, and kidney disease, when compared to usual care (tacrolimus and mycophenolate mofetil). The secondary goal is to acquire FDA approval of the first immunosuppression regimen for pediatric heart transplantation. The primary trial endpoint is a validated surrogate measure—the major adverse transplant event (MATE) score—which efficiently predicts long-term survival, and that has been accepted by the FDA (IND# 127980). The trial is being conducted at 25 centers, with leadership at Boston Children's Hospital (Data Coordinating Center) and Stanford University (Clinical Coordinating Center). At the time of this annual report, trial execution is complete (211 enrolled and followed for 30 months) and data analysis/results dissemination activities remain. Additional accomplishments in Year 06 include completion of endpoint adjudication and centralized angiography interpretations; completion of biospecimen collection (59 plasma samples); successful execution of a Data and Safety Monitoring Board meeting (Nov 2022); publication of the Trial Design paper and acceptance of a research abstract for the Trial Main Results to the American Heart Association Scientific Sessions Late-Breaking Science platform..					
<b>15. SUBJECT TERMS</b> Heart transplantation; children; immunosuppression; randomized clinical trial					
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TEAMMATE is a multicenter randomized clinical trial of a novel immunosuppressive therapy that is studying children who have undergone recent heart transplantation. The primary goal is to determine whether a new rejection treatment (everolimus and low-dose tacrolimus) can reduce or prevent complications of transplant, including rejection, coronary artery disease, and kidney disease, when compared to usual care (tacrolimus and mycophenolate mofetil). The secondary goal is to acquire FDA approval of the first immunosuppression regimen for pediatric heart transplantation. The primary trial endpoint is a validated surrogate measure—the major adverse transplant event (MATE) score—which efficiently predicts long-term survival, and that has been accepted by the FDA (IND# 127980). The trial was conducted at 25 centers, with leadership at Boston Children's Hospital (Data Coordinating Center) and Stanford University (Clinical Coordinating Center). At the time of this annual report, enrollment and the 30-month follow-up are complete for all participants. Additional accomplishments in Year 06 include completion of biospecimen collection and the acceptance of a research abstract for the Trial Main Results to the American Heart Association Scientific Sessions Late-Breaking Science platform.

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## 1. INTRODUCTION:

Median survival after pediatric heart transplantation is only 15 years in the current era, due to the occurrence of late complications after heart transplant, most of which stem from the medications used to suppress the immune system in order to prevent graft rejection. While graft survival has improved significantly with the current standard of care, tacrolimus (TAC) and mycophenolate mofetil (MMF), most of the improvement has come from a reduction in early mortality. Preliminary studies suggest that everolimus in combination with low-dose TAC may prevent rejection, coronary artery disease, and kidney failure more effectively than TAC-MMF. However, these studies are limited by single-center design, inconsistent endpoint definitions and use of historical controls. In contrast to adults, children have a substantially longer *potential* life expectancy in the absence of late transplant complications, making the prevention of such complications an urgent priority for the pediatric heart transplant community.

The research that is the subject of this report, the TEAMMATE trial, is a multicenter randomized clinical trial of a novel immunosuppressive therapy that is studying a target of 210 children who have undergone recent heart transplantation. The primary goal is to determine whether a new rejection treatment (everolimus and low-dose TAC) can reduce or prevent complications of transplant when compared to usual care (TAC-MMF). The secondary goal is to acquire FDA approval of the first immunosuppression regimen for pediatric heart transplantation. The primary trial endpoint is a validated surrogate measure—the major adverse transplant event (MATE) score—which efficiently predicts long-term survival, and that has been accepted by the FDA (IND# 127980). The trial is being conducted at 25 centers, with leadership at Boston Children's Hospital (Data Coordinating Center) and Stanford University (Clinical Coordinating Center).

This trial has high military relevance: 1) pediatric heart transplant is most often performed in those with congenital heart disease, which may be more common in military families due to *in utero* exposures such as hazardous chemicals, poor air quality, ground water contamination, and infectious diseases that may be more prevalent when serving abroad; 2) the evaluation of everolimus may have medical applications for treating military injuries that require a vascular composite allograft, such as hand transplantation; and 3) proliferation signal inhibitors (such as everolimus) are uniquely known for their ability to alter healing of human tissues, and therefore may provide insights into mechanistic pathways necessary to expedite wound healing.

## 2. KEYWORDS:

Children, heart transplant, immunosuppression, randomized clinical trial, everolimus

## 3. ACCOMPLISHMENTS:

**What were the major goals of the project?**

**The OVERALL AIM** of the research is to execute a multicenter randomized trial enrolling 210 pediatric heart transplant recipients from 25 sites to evaluate the efficacy, safety and tolerability of everolimus+low-dose tacrolimus and to secure its FDA approval.

**Major Tasks per SOW include:**

- |  |                 |
|--|-----------------|
| 1. Regulatory & Contractual Activities required for Study Launch | Months -6 to 3  |
| 2. Prepare Study Staff and Systems to Execute Trial              | Months 1 to 3   |
| 3. Participant Recruitment                                       | Months 4 to 18  |
| 4. Participant Follow-up and Evaluation                          | Months 4 to 48  |
| 5. Study Closeout and Analysis                                   | Months 36 to 48 |

Shaded rows indicate tasks completed at time of last Annual Report.

**Table 1. Statement of Work Tasks and Completion Status**

*Table 1. Progress Report based on Statement of Work for Major Tasks 1 to 6.*

*Shaded rows indicate fully completed tasks.*

Major Task 1: Regulatory & Contractual Activities required for Study Launch	Timeline (mo)	Status
<b>Subtask 1: Obtain regulatory approvals for study protocol</b>		
Submit final protocol to U.S. FDA for review and approval of amendments to Investigational New Drug (IND) application #127980	-6 to -3	✓ 11/20/17
Submit final protocol for Military IRB (ORP/HRPO) review and approval	-3 to 0	✓ 9/21/17 (v1)
Coordinate with Sites for IRB submission of protocol and ICF	1-3	✓ 25 fully approved, +2 terminated
DSMB organizational and protocol review meeting, arranged by DCC	2	✓ 11/01/17
Submit amendments, adverse events and protocol deviations as needed	As Needed	Amendment #28 approved 11/17/21

Submit annual single IRB report for continuing review	Annually	✓
<i>Milestone Achieved: Approval by Military HRPO and FDA</i>	1	✓
<i>Milestone Achieved: Local IRB approval at Study Sites and Angio Core Laboratory</i>	3	<b>COMPLETE</b>
<b>Subtask 2: Execute financial agreements / subawards</b>		
Coordinate with CCC, 25 Sites (22 original, 5 new, minus 2 terminated = 25 currently) and Core Lab to execute Subcontracts/ CTAs	1-3	✓ 26 fully executed, 2 terminated
Execute Consultant Agreements with Adjudication Committee members	1-3	✓
<i>Milestone Achieved: All Subcontracts and Consultant Agreements executed</i>	1-3	<b>COMPLETE</b>
<b>Major Task 2: Prepare Study Staff and Systems to Execute Trial</b>		
<b>Subtask 1: Training of Research Staff</b>		
DCC/CCC to conduct in-person training session for certification on study protocol	2-3	✓ 11/10/17 in Anaheim, CA; 7/19/18 in Palo Alto, CA 1/11/19 in Boston, MA
DCC/CCC to conduct webinars for SCs to review study protocol procedures	2-3	✓ (occurs monthly)
Angio Core Lab to conduct webinar with site angiographers and site study coordinators regarding data transfer and image acquisition	3	✓ (held 2/1/18)
Adjudication Committee webinar to standardize AE review procedures	3	✓ (calls held throughout 2018, 2019 & Feb 2020)
Retrain site study coordinators/Train new coordinators as needed via Webinar	As Needed	✓ 81 Study &

		Transplant Coords + 35 PIs trained
<i>Milestone Achieved: Research staff trained</i>	3	<b>COMPLETE</b>
<b>Subtask 2: Build Trial materials and communications and database system</b>		
Finalize case report forms, including pilot testing with core site SCs	1-3	✓ 53 CRFs finalized
Create Trial and Angio Core Lab Manuals of Operation (MOO)	2-3	✓
Develop Administrative website to post trial materials and secure documents	1-3	✓
Develop and test database management and randomization systems	2-3	✓ 53 of 53 CRFs in use (100%)
Angio Core Lab to obtain license from Ambra Health for secure image transfer	1	✓ 12/14/17
<i>Milestone Achieved: Study systems developed and functional for trial launch</i>	3	<b>COMPLETE</b>
<b>Major Task 3: Participant Recruitment</b>		
Site Study Coordinators screen records for eligibility and randomize consented patients; CCC on call for eligibility questions from sites	4-18	722 screened <b>Complete</b> - 211 randomized of 210 Target ✓
Teleconference with SCs every other week and site PIs monthly	4-18	✓
<i>Milestone Achieved: Recruitment and randomization of 210 participants</i>	18	<b>COMPLETE</b>
<b>Major Task 4: Participant Follow-up and Evaluation (0,3,6,9,12,18,24,30 mo post-randomization)</b>		
<b>Subtask 1: Data collection - Complete participant study visits</b>		
Complete required study visits, including QOL/functional status	4-48	✓

assessments		
Obtain prescription records from local pharmacies to monitor compliance	4-48	✓
Submit participant clinical data to DCC database management system	4-48	✓
De-identify angiograms and submit to Angio Core Lab	4-48	✓
Collect blood/urine samples for ancillary studies, if funded	4-48	✓
Submit adverse event reports to DCC and local IRB (if applicable) per required time frames	As needed	✓
<i>Milestone Achieved: Data collection complete</i>	48	<b>COMPLETE</b>
<b>Subtask 2: Event Reporting and Monitoring, Quality Assurance and Centralized Assessments</b>		
DCC securely posts SAEs and Committee submits adjudications	7-30	✓
DCC submits SAEs to DoD and DSMB per required time frames	7-30	✓
DSMB reviews 6-mo outcomes of first 5 participants assigned to EVL/LDTAC	10	✓  Mtg held 10JAN2019
ACL performs angio readings and submits assessments to DCC	10-33	✓
Site visits and data audits performed in person, 1 per site and for-cause;	12-40	✓
Ongoing monitoring of site and ACL data quality and completeness by DCC		✓
Write and publish trial design manuscript prior to interim look	8-14	✓
DSMB meeting for one interim look at efficacy outcome (estimated timing)	30	Mtg held 11DEC2020

DCC coordinates DSMB meetings, prepares and securely post reports	10-43	✓
<i>Milestone Achieved: Standardized assessments and QA/QC measures executed</i>	48	<b>COMPLETE</b>
<b>Major Task 5: Study Closeout and Analysis</b>		
<b>Subtask 1: Study Closeout</b>		
DCC collects all outstanding data & queries from Sites, ACL, Adjudication. Committee	42-48	✓
All trial parties request extension of protocol duration to local IRBs** to permit analyses in fifth year	45	Continuing review approved
Secure (Foundation, Industry) funds for extended analysis period	36-48	DoD IIR application FY21 not funded
<i>Milestone Achieved: Complete high quality trial data from all sources</i>	48	<b>COMPLETE</b>
<b>Subtask 2: Analysis and Dissemination</b>		
Statistical analysis for annual regulatory reports, investig & DSMB meetings	10-48	Ongoing
Statistical analysis programs developed for final results manuscript using dummy randomization and pre-specified table/figure shells from SAP	36-48	✓
Identify targets for dissemination of results (presentations, publications, web)	36-48	✓
<i>Milestone Achieved: Analyses performed and dissemination targets identified</i>	48	<b>CONTINUING</b>
<b>Major Task 6: Writing and publication of results manuscripts (extension year, post-Award end) with carryover and ancill. funding (Foundation, Industry)</b>	(49-60)	<b>ONGOING</b>

## What was accomplished under these goals?

*In this Reporting Period (Year 6), **the Trial has been completed** with respect to all major Tasks related to the 30-month participant follow-up and data collection. Data analysis and results dissemination is ongoing.*

Study Sites: A Central IRB and full Reliance remains active for 24 of 25 sites and local IRB for one site.

Enrollment: Enrollment was completed for the trial in August 2020 (30 months duration). **The final total is 211 participants** (target of 210 (occurred on 31JUL2020), plus one patient who was consented prior to the 210<sup>th</sup> randomization, who was allowed to proceed to randomization (07AUG2020).

Trial Completion: As of 9/14/23, **all 211 participants (100%) have completed the trial or have been closed out.** Five of the 211 withdrew from the trial or were lost to follow-up.

Protocol Execution and Monitoring: Central angiogram interpretations and endpoint adjudications are complete. All 25 regulatory/data audit site visits have occurred.

**What opportunities for training and professional development has the project provided?**

None in this reporting period.

**How were the results disseminated to communities of interest?**

A research abstract for the Trial Main Results has been accepted to be presented at the American Heart Association Scientific Sessions Late-Breaking Science platform in November 2023.

Three additional abstracts are under development for submission to the International Society for Heart and Lung Transplantation Annual Conference (April 2024).

**What do you plan to do during the next reporting period to accomplish the goals?**

1. Perform data analysis for the main and secondary results of the trial.
2. Write and submit to a journal the manuscript for the main results of the trial.
3. Request a meeting with the FDA to jointly review the TEAMMATE Trial results and their implications for pediatric labeling of everolimus.

**4. IMPACT:**

**What was the impact on the development of the principal discipline(s) of the project?**

This randomized trial has made an impact on the field of pediatric heart transplantation by demonstrating for the first time that a collaborative clinical research network specific to pediatric heart transplantation can be successfully formed to efficiently execute multicenter research studies to improve the management and outcomes of children who have undergone heart transplantation. TEAMMATE may also impact the pediatric labeling of everolimus and the status of its Black Box warning.

**What was the impact on other disciplines?**

The TEAMMATE Trial has demonstrated to other subspecialties within pediatric cardiology that with planning, collaboration and continued focus, rigorous multicenter research can be successfully executed even in relatively rare and fragile pediatric populations.

**What was the impact on technology transfer?**

Nothing to report.

**What was the impact on society beyond science and technology?**

Nothing to report.

**5. CHANGES/PROBLEMS:**

**Changes in approach and reasons for change**

No changes in approach during the last reporting period.

**Actual or anticipated problems or delays and actions or plans to resolve them**

*Describe problems or delays encountered during the reporting period and actions or plans to resolve them.*

We have received approval for a third and final NCE to complete the analyses of trial data.

**Changes that had a significant impact on expenditures**

Not applicable. Advance payment by DoD of all remaining funds was previously executed.

**Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents**

**Significant changes in use or care of human subjects**

- The trial protocol has had 31 amendments approved and 1 withdrawn. Amendment #31 was approved by the single IRB at Boston Children’s Hospital 04/01/23.
- The continuing review for Columbia University was approved by the DoD HRPO on 3/9/22.
- The continuing review for the main protocol was approved by the Central IRB (Boston Children’s Hospital) on 12/19/22 (expiration 12/18/23).
- The continuing review for the main protocol approved by the Central IRB (Boston Children’s Hospital) was approved by the DoD HRPO in 2023.

**Significant changes in use or care of vertebrate animals**

Not applicable.

**Significant changes in use of biohazards and/or select agents**

Not applicable.

**6. PRODUCTS:** *List any products resulting from the project during the reporting period. If there is nothing to report under a particular item, state “Nothing to Report.”*

## Publications, conference papers, and presentations

Almond CS, Sleeper LA, Rossano JW, Bock MJ, Pahl E, Auerbach S, Lal A, Hollander SA, Miyamoto SD, Castleberry C, Lee J, Barkoff LM, Gonzales S, Klein G, Daly KP. The TEAMMATE Trial: Study Design and Rationale – Tacrolimus and everolimus against tacrolimus and MMF in pediatric heart transplantation using the major adverse event (MATE) score. *American Heart Journal* 2023 Jun;260:100-112. doi: 10.1016/j.ahj.2023.02.002. Epub 2023 Feb 23.

See Appendix for published abstracts and Presentations reported in prior Reports.

## Books or other non-periodical, one-time publications.

Nothing to report.

## Other publications, conference papers and presentations.

Nothing to report.

## Website(s) or other Internet site(s)

The following website went live in October 2018. Its purpose was to promote TEAMMATE Trial visibility and serve as an informational resource to patient families and study centers:

<http://med.stanford.edu/teammate.html>

- **Technologies or techniques**

Nothing to report.

- **Inventions, patent applications, and/or licenses**

*Identify inventions, patent applications with date, and/or licenses that have resulted from the research. Submission of this information as part of an interim research performance progress report is not a substitute for any other invention reporting required under the terms and conditions of an award.*

Nothing to report.

- **Other Products (presented in past Annual Reports)**

- **A Spanish language version informed consent video** was produced as an informational tool for families: : <https://www.youtube.com/watch?v=KnWwkHUZCv8>
- **An instructional video on Preparation of Liquid Everolimus** was produced for use by families participating in the trial:

<https://www.youtube.com/watch?v=CO7VtATeofU&feature=youtu.be>

## PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

Name:	Lynn Sleeper, ScD
Project Role:	PD/PI, PI of DCC
Researcher Identifier (e.g. ORCID ID):	0000-0002-8055-768X
Nearest person month worked:	3
Contribution to Project:	No change.
Name:	Kevin Daly, MD
Project Role:	Co-Investigator, Co-PI of CCC
Researcher Identifier (e.g. ORCID ID):	0000-0003-4327-1532
Nearest person month worked:	1.8
Contribution to Project:	No change.
Name:	Christopher Almond, MD, MPH
Project Role:	Co-Investigator, Co-PI of CCC
Researcher Identifier (e.g. ORCID ID):	0000-0001-7136-8337
Nearest person month worked:	1.45
Contribution to Project:	No change.
Name:	Tajinder Pal Singh, MD, MSc
Project Role:	Co-Investigator/Medical Monitor
Researcher Identifier (e.g. ORCID ID):	n/a
Nearest person month worked:	1.2
Contribution to Project:	No change.
Name:	Shelley Miyamoto, MD
Project Role:	Co-Investigator/Director of Angiography Core Laboratory
Researcher Identifier (e.g. ORCID ID):	n/a
Nearest person month worked:	0.095
Contribution to Project:	No change
Name:	Gloria Klein, MS, RD
Project Role:	Project Director of DCC
Researcher Identifier (e.g. ORCID ID):	n/a
Nearest person month worked:	1.2
Contribution to Project:	No change.
Name:	Tanya Olesker
Project Role:	Administrative Coordinator of DCC
Researcher Identifier (e.g. ORCID ID):	n/a
Nearest person month worked:	1.2
Contribution to Project:	No change.

Name: JungWoo Lee  
Project Role: Research Assistant  
Researcher Identifier (e.g. ORCID ID): n/a  
Nearest person month worked: 6  
Contribution to Project: Left Sept 2023

Name: Fiona Howard  
Project Role: Research Assistant  
Researcher Identifier (e.g. ORCID ID): n/a  
Nearest person month worked: 6  
Contribution to Project: No change

Name: Minmin Lu, MS  
Project Role: Statistical Programmer  
Researcher Identifier (e.g. ORCID ID): n/a  
Nearest person month worked: 3.6  
Contribution to Project: No change.

Name: Jane Messere, RN  
Project Role: Clinical Research Associate  
Researcher Identifier (e.g. ORCID ID): n/a  
Nearest person month worked: 1.8  
Contribution to Project: No change.

Name: Selena Gonzales, MPH  
Project Role: Project Manager of the CCC  
Researcher Identifier (e.g. ORCID ID): 0000-0003-3744-111X  
Nearest person month worked: 3  
Contribution to Project: No change.

Name: Joseph Rossano, MD  
Project Role: Co-Investigator/Site PI  
Researcher Identifier (e.g. ORCID ID): n/a  
Nearest person month worked: 0.075  
Contribution to Project: No change.

Name: Scott Auerbach, MD  
Project Role: Co-Investigator/Site PI  
Researcher Identifier (e.g. ORCID ID): 0000-0002-2341-0913  
Nearest person month worked: 0.075  
Contribution to Project: No change.

Name: Seth Hollander, MD  
Project Role: Co-Investigator/Site PI  
Researcher Identifier (e.g. ORCID ID): 0000-0002-0818-3150  
Nearest person month worked: 0.075  
Contribution to Project: No change.

Name:	Micheal Kuhn, MD
Project Role:	Co-Investigator/Site PI
Researcher Identifier (e.g. ORCID ID):	0000-0003-1357-4698
Nearest person month worked:	0.075
Contribution to Project:	No change.
Name:	Anna Joong, MD
Project Role:	Co-Investigator/Site PI
Researcher Identifier (e.g. ORCID ID):	n/a
Nearest person month worked:	0.075
Contribution to Project:	No change.
Name:	Ashwin Lal, MD
Project Role:	Co-Investigator/Site PI
Researcher Identifier (e.g. ORCID ID):	0000-0003-0935-6858
Nearest person month worked:	0.075
Contribution to Project:	No change.
Name:	Aecha Marion Ybarra
Project Role:	Co-Investigator/Site PI
Researcher Identifier (e.g. ORCID ID):	n/a
Nearest person month worked:	0.075
Contribution to Project:	No change.

**Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?**

Nothing to Report.

**What other organizations were involved as partners?**

The American Heart Association and Enduring Hearts support the TEAMMATE Biospecimen collection (AHA-EH 824428).

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## 7. SPECIAL REPORTING REQUIREMENTS

**COLLABORATIVE AWARDS:** N/A

**QUAD CHARTS:** N/A

## 8. APPENDICES:

***Previously published/listed in past Reports:***

1. Bock MJ, Lal AK, Auerbach SR, Castleberry C, Hollander SA, Daly KP, Almond C, Rossano JW, Lee J, Sleeper LA, Pahl E for the TEAMMATE Trial Investigators. Immunosuppressant Drug Level Monitoring In Pediatric Heart Transplant Recipients: A Report from the TEAMMATE Trial. *The Journal of Heart and Lung Transplantation* 2022 Volume 41, Issue 4, Supplement, April 2022, Pages S87-S88.

2. **“TEAMMATE, Trials, and Everolimus”**

March 2, 2022

Almond C, Barkoff L, Klein G, Daly KP

Pediatric Heart Transplant Society, #PHTSLIVE

3. **The TEAMMATE Trial: An Update for Patients and Families**

Enduring Hearts Facebook Live!

April 22, 2021

**Presenter:** Kevin Daly, MD (Trial Co-Chair)

Assistant Professor of Pediatrics, Harvard Medical School

Advanced Cardiac Therapies Program

Dept of Cardiology, Boston Children’s Hospital

*TEAMMATE was featured in both of these invited talks:*

4. **Proliferation Signal Inhibitor Avenue: Use of mTORi/PSI Immunosuppression in Pediatric Heart Transplantation**

Kevin P. Daly, MD

**American Transplant Congress 2021: The Road Less Traveled:  
Experience with Unique Immunosuppression in Pediatric Transplantation  
June 6, 2021**

**5. *Brayden Andrew Moore Transplant Educational Lecture*  
**Heart Transplant Immunosuppression and Steroid-Free Induction Therapy****

Kevin P. Daly, MD (Trial Co-Chair)

**Children's of Alabama, University of Alabama at Birmingham**

**August 10, 2021**

6. Sleeper LA, Daly KP, Addonizio LJ, Alejos JC, Auerbach S, Bock MJ, Butto A, Carlo WF, Castleberry C, Dreyer WJ, Feingold B, Lamour J, Friedland-Little J, Hollander S, Klein G, Lal A, Pahl E, Peng D, Pietra B, Punnoose AR, Ryan TD, Su J, Sutcliffe DL, Zangwill S, Rossano JW, Almond CS. Recruitment in the TEAMMATE Trial: Observed vs. Expected. Select Abstracts From Cardiology 2020: 23rd Annual Update on Pediatric and Congenital Cardiovascular Disease. *World J Ped Congenit Heart Surg* 2020; 11(2), NP1–NP77.  
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