Effective Health Care

# Assessment, Treatment, and Prevention of Posttraumatic Stress Disorder in Children and Adolescents

## Results of Topic Selection Process & Next Steps

The nominator, the American Academy of Child & Adolescent Psychiatry (AACAP), is interested in using a systematic review to inform the update of the 2010 AACAP clinical practice guidelines pertaining to the assessment, treatment, and prevention of posttraumatic stress disorder (PTSD) in children and adolescents. Due to limited program resources, the program is unable to develop a review at this time. No further activity on this topic will be undertaken by the Effective Health Care (EHC) Program.

## Topic Brief

**Topic Name:** Assessment, Treatment, and Prevention of Posttraumatic Stress Disorder in Children and Adolescents

**Topic #:** 0677

**Nomination Date:** 06/03/2016

**Topic Brief Date:** 09/26/2016

**Authors:**
Karli Kondo
Kara Winchell
Rose Relevo
Mark Helfand

**Conflicts of Interest:** None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

**Summary of Key Findings**

- Appropriateness and Importance: The nomination is both appropriate and important.
- Duplication: Table 1 outlines the findings of our search for duplication and feasibility. We identified no completed or in-process reviews examining diagnostic and screening tools (KQ 3) or pharmacologic interventions for children six years and under (KQ 5b). We identified complete and in-process evidence reviews examining risk factors (KQ 1), nonpharmacological interventions (KQ 4), pharmacological interventions for children seven and older (KQ 5a), and interventions to prevent PTSD in children and adolescents (KQ 3). The most pertinent is a Cochrane review (2012) of psychological therapies for the treatment of PTSD in children and adolescents (KQ 4).
- Impact: A new systematic review on the proposed topic may have limited impact. Many studies have been published since the 2010 guidelines, but the information provided in these new studies is consistent with conclusions of the 2010 guidelines.
- Feasibility:
    - *Size/scope of review:* We estimate that the total size of the relevant literature (2011-present) may be approximately 250 studies across key questions.
    - *ClinicalTrials.gov:* We identified 19 relevant trials on ClinicalTrials.gov.

    - *Cochrane RCT filter results:* We identified 11 additional RCTs examining prevention and nonpharmacological interventions.
- Value: The potential for value is high, given that AACAP will use a new AHRQ systematic review to update their 2010 practice parameters. This organization has previously produced evidence based guidelines, and are transparent about their methodology.

## Table of Contents

## Introduction

In adolescents, the prevalence of PTSD is 8.0% in girls and 2.3% in boys, or 3.9% overall.[1,2] Rates for younger children are unclear, but the National Center for PTSD estimates that PTSD occurs in approximately 3-15% of young girls, and 1-6% of young boys, depending on type of trauma.[1,2] Some risk factors for PTSD in children and adolescents include how severe the trauma is, how parents react to the trauma, and how close or far away the child is from the trauma. Additionally, the more traumas a child or adolescent goes through the more likely they are to develop PTSD.

PTSD looks different in children than it does adolescents. For children aged 5-12 years, PTSD may appear in their play by way of repeating part of the trauma. For example, if a child witnesses a school shooting, they may be more inclined to play shooting games.[3] For many children, symptoms of PTSD go away on their own after a few months. For teens, PTSD may appear more like it does in adults. This means adolescents/teens are more likely to experience flashbacks for problems remembering parts of the trauma. Unlike adults, however, they are more likely to show impulsive and aggressive behaviors.[3]

Topic nomination #0677 was received on June 7, 2016. It was nominated by American Academy of Child & Adolescent Psychiatry (AACAP). The questions for this nomination are:

Key Question 1. In children and adolescents, what factors are associated with increased risk of the development of DSM-5 PTSD?

Key Question 2. In children and adolescents, what are the benefits and harms of interventions to prevent the DSM-5 PTSD?

Key Question 3. What is the accuracy and comparative accuracy of diagnostic and screening tools for DSM-5 PTSD:

- 3a. In children and adolescents seven and older?
- 3b. In children six and younger?

Key Question 4. What are the benefits and harms and or comparative benefits and harms of non-pharmacological interventions for PTSD:

- 4a. In children and adolescents seven and older?
- 4b. In children six and younger?
- 4c. Do the benefits and harms differ by subpopulation (e.g., patient characteristics, disorder characteristics, history of previous treatment, type of trauma, comorbid condition, etc.)?

Key Question 5. What are the benefits and harms and or comparative benefits and harms of pharmacological interventions for PTSD:

- 5a. In children and adolescents seven and older?
- 5b. In children 6 and younger?
- 5c. Do the benefits and harms differ by subpopulation (e.g., patient characteristics, disorder characteristics, history of previous treatment, type of trauma (?), comorbid condition, etc.)?

To define the inclusion criteria for the key questions we specify the population, interventions, comparators, outcomes, and timing (PICOT) of interest. See Table 1.

**Table 1.** Key Questions and PICOTs

| **Key Questions** | 1. In children and adolescents, what factors are associated with increased risk of the development of DSM-5 PTSD? | 2. In children and adolescents, what are the benefits and harms of interventions to prevent DSM-5 PTSD? | 3. What is the accuracy and/or comparative accuracy of diagnostic and screening tools for DSM-5 PTSD:<br>a. In children and adolescents seven and older?<br>b. In children six and younger? | 4. What are the benefits and harms/and or comparative benefits and harms of non-pharmacological interventions for PTSD:<br>a. In children and adolescents seven and older?<br>b. In children six and younger?<br>c. Do the benefits and harms differ by subpopulation (e.g., patient characteristics, disorder characteristics, history of previous treatment, type of trauma, comorbid condition, etc.)? | 5. What are the benefits and harms/and or comparative benefits and harms (or one or the other – based on your preference) of pharmacological interventions for PTSD:<br>a. In children and adolescents seven and older?<br>b. In children six and younger?<br>c. Do the benefits and harms differ by subpopulation (e.g., patient characteristics, disorder characteristics, history of previous treatment, type of trauma, comorbid condition, etc.)? |
|---|---|---|---|---|---|
| **Population** | Children and Adolescents (<18) with PTSD | Children and Adolescents (<18) who have experienced a trauma | Children and Adolescents (<18) with PTSD | Children and Adolescents (<18) with PTSD | Children and Adolescents (<18) with PTSD |
| **Interventions** | NA | Non-pharmacological or pharmacological interventions | Screening and diagnostic tools | Non-pharmacological interventions | Pharmacological interventions |
| **Comparators** | Placebo, no treatment, other active treatment, wait list | Placebo, no treatment, other active treatment, wait list | Placebo, no treatment, other active treatment, wait list | Placebo, no treatment, other active treatment, wait list | Placebo, no treatment, other active treatment, wait list |
| **Outcomes** | All | PTSD symptom severity, change from baseline, depression, anxiety, functional impairment, quality of life, etc. | Sensitivity, specificity, validity | PTSD symptom severity, change from baseline, depression, anxiety, functional impairment, quality of life, etc. | PTSD symptom severity, change from baseline, depression, anxiety, functional impairment, quality of life, etc. |
| **Timing** | All | All | All | All | All |

## Methods

To assess topic nomination *#0677 Assessment, Treatment, and Prevention of Posttraumatic Stress Disorder in Children and Adolescents,* for priority for a systematic review or other AHRQ EHC report, we used a modified process based on established criteria. Our assessment is hierarchical in nature, with the findings of our assessment determining the need for further evaluation. Details related to our assessment are provided in Appendix A.

1. Determine the *appropriateness* of the nominated topic for inclusion in the EHC program.
2. Establish the overall *importance* of a potential topic as representing a health or healthcare issue in the United States.
3. Determine the *desirability of new evidence review* by examining whether a new systematic review or other AHRQ product would be duplicative.
4. Assess the *potential impact* a new systematic review or other AHRQ product.
5. Assess whether the *current state of the evidence* allows for a systematic review or other AHRQ product (feasibility).
6. Determine the *potential value* of a new systematic review or other AHRQ product.

### Appropriateness and Importance

We assessed the nomination for appropriateness and importance (see Appendix A).

### Desirability of New Review/Duplication

We searched for high-quality, completed or in-process evidence reviews pertaining to the key questions of the nomination. Table 2 includes the citations for the reviews that were determined to address the key questions. Appendix B includes the list of the sources searched and potentially relevant titles identified by our research librarian.

### Impact of a New Evidence Review

The impact of a new evidence review was assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was hypothetically possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

### Feasibility of a New Evidence Review

We conducted a literature search in PubMed and PsycInfo from June 2011 and June 2016. Because a large number of articles were identified, we reviewed a random sample of 200 titles and abstracts for inclusion and classified identified studies by study design, to assess the size and scope of a potential evidence review. We then calculated the projected total number of included studies based on the proportion of studies included from the random sample. See *Table 2, Feasibility Column, Size/Scope of Review Section* for the citations of included studies. Because this was limited sampling, we took an additional step to identify applicable randomized trials from the larger search results. We applied Cochrane's Highly Sensitive Search Strategy for Identifying Randomized Trials in MEDLINE to all the feasibility search results and reviewed the identified abstracts for potential relevancy.

### Value

We assessed the nomination for value (see Appendix A). We considered whether or not the topic would inform clinical policy in community and/or clinical settings, and if there was a partner organization that would use this evidence review to change practice.

### Compilation of Findings

We constructed a table outlining the selection criteria as they pertain to this nomination (see Appendix A).

# Results

## Appropriateness and Importance

This is an appropriate and important topic. In adolescents, the prevalence of PTSD is 8.0% in girls and 2.3% in boys, or 3.9% overall.[1,2] Rates for younger children are unclear, but the National Center for PTSD estimates that PTSD occurs in approximately 3-15% of young girls, and 1-6% of young boys, varying depending on type of trauma.[1,2] See Appendix A for details.

## Desirability of New Review/Duplication

A comprehensive evidence review examining the assessment, preventions, and treatment of PTSD in children and adolescents would not be duplicative. We identified no in-process or completed evidence reviews for the following questions: KQ 3a (diagnosis and screening in children 7 and older), 3b (diagnosis and screening in children 6 and younger), and KQ 5c (benefits and harms of pharmacological interventions in subgroups). For KQ 1, we identified 6 evidence reviews examining factors associated with increased risk of developing PTSD.[4-9] For KQ 2, we identified one evidence review examining the benefits and harms of interventions to prevent PTSD.[10] For KQ 4a, we identified 9 complete and 3 in-process evidence reviews, including one Cochrane review,[11] examining the benefits and harms of non-pharmacological interventions in children and adolescents age 7 and older.[11-21] For KQ 4b, we identified one in-process evidence review examining the benefits and harms of non-pharmacological interventions in children age 6 and younger.[26] For KQ 4c, we identified three evidence reviews, including one Cochrane review,[11] examining the benefits and harms of non-pharmacological interventions in children and adolescents in subgroups.[11,13,22] For KQs 5a and 5b, we identified one in-process evidence review examining the benefits and harms of pharmacological interventions in children and adolescents.[23] For more detail see Appendix B.

## Impact of a New Evidence Review

A new systematic review on the assessment, prevention, and treatment of PTSD in children and adolescents may have limited impact. Many studies have been published since the 2010 AACAP guidelines, but the information provided in these new studies is consistent with conclusions of the 2010 guidelines.

## Feasibility of a New Evidence Review

A comprehensive evidence review examining the assessment, prevention, and treatment of PTSD in children and adolescents would be feasible. For KQ 1, we identified five published studies examining factors associated with increased risk of developing PTSD.[24-28] For KQ 2, we identified one RCT examining the benefits and harms of interventions to prevent PTSD.[29] For KQ 3a, we identified two published studies examining diagnosis and screening in children 7 and older.[30,31] For KQ 3b, we identified one RCT examining diagnosis and screening in children 6 and younger.[32] For key question 4a, we identified 2 published studies (one RCT) examining the benefits and harms of non-pharmacological interventions in children and adolescents age 7 and older.[33,34] For key question 4b, we identified one RCT examining the benefits and harms of non-pharmacological interventions in children age 6 and younger.[33] For key questions 5a, we identified one RCT examining the benefits and harms of pharmacological interventions in children and adolescents 7 years and older.[35] We identified published studies for the following questions: KQ 4c (benefits and harms of non-pharmacological interventions in subgroups), 5b (benefits and harms of pharmacological interventions in children 6 and younger), and KQ 5c (benefits and harms of pharmacological interventions in subgroups). For more detail see Appendix C.

Our search of ClinicalTrials.gov yielded no in-process or recently completed results relevant to KQs 3a, 3b, 4c, and 5b. We identified 16 trials across the remaining key questions. Please see Table 2 and Appendix C for more details.

**Table 2.** Key questions with the identified corresponding evidence reviews and original research

| Key Question | Duplication (Completed or In-Process Evidence Reviews) | Feasibility (Published and Ongoing Original Research) |
|---|---|---|
| KQ 1: Factors associated with increased risk of developing PTSD | Total number of completed or in-progress systematic reviews - 6<br>• Other - 6[4-9] | Size/scope of review<br>Relevant Studies Identified: 5<br>• Prospective Cohort - 2[24,25]<br>• Retrospective Cohort - 2[26,27]<br>• Cross Sectional - 1[28]<br>Projected Total: 85<br><br>ClinicalTrials.gov<br>Relevant Trials: None identified. |
| KQ 2: Benefits and harms of interventions to prevent PTSD | Total number of completed or in-progress systematic reviews - 1<br>• Other - 1[10] | Size/scope of review<br>Relevant Studies Identified: 1<br>• RCT - 1[29]<br>Projected Total: 17<br><br>ClinicalTrials.gov<br>Relevant Trials: 8<br>• Not yet recruiting – 1[36]<br>• Recruiting – 4[37-40]<br>• Active, not recruiting – 2[41,42]<br>• Complete – 1[43] |
| KQ 3a: Diagnosis and screening<br><br>≥7 years old | Total number of completed or in-progress evidence reviews – None identified. | Size/scope of review<br>Relevant Studies Identified: 2<br>• Validation Study – 2[30,31]<br>Projected Total: 34<br><br>ClinicalTrials.gov<br>Relevant Trials: None identified. |
| KQ 3b: Diagnosis and screening<br><br>≤6 years old | Total number of completed or in-progress evidence reviews – None identified. | Size/scope of review<br>Relevant Studies Identified: 1<br>• RCT - 1[32]<br>Projected Total: 17<br><br>ClinicalTrials.gov<br>Relevant Trials: None identified. |
| KQ 4a<br>Benefits and harms of non-pharmacological interventions<br><br>≥7 years old | Total number of completed or in-progress systematic reviews - 12<br>• Cochrane – 1[11]<br>• Other - 7[12-17]<br>• HTA - 1[18]<br>• In-Progress (Other) - 3[19-21] | Size/scope of review<br>Relevant Studies Identified: 2<br>• RCT - 1[33]<br>• Quasi-Experimental - 1[34]<br>Projected Total: 34<br><br>ClinicalTrials.gov<br>Relevant Trials: 8<br>• Not yet recruiting – 2[40,44]<br>• Recruiting – 4[45-48]<br>• Complete – 2[36,49] |
| KQ 4b<br>Benefits and harms of non-pharmacological interventions<br><br>≤6 years old | Total number of completed or in-progress systematic reviews - 1<br>• In-Process (Other Protocols) – 1[26] | Size/scope of review<br>Relevant Studies Identified: 1<br>• RCT - 1[33]<br>Projected Total: 17<br><br>ClinicalTrials.gov<br>Relevant Trials: 3<br>• Recruiting – 3[21,45,47] |
| KQ 4c<br>Benefits and | Total number of completed or in-progress systematic reviews - 3 | Size/scope of review<br>Relevant Studies Identified: 0 |

| Key Question | Duplication (Completed or In-Process Evidence Reviews) | Feasibility (Published and Ongoing Original Research) |
|---|---|---|
| harms of non-pharmacological interventions<br><br>Subgroup | • Cochrane - 1[11]<br>• Other - 2[13,22] | Projected Total: 0<br><br>ClinicalTrials.gov<br>Relevant Trials: None identified. |
| KQ 5a<br>Benefits and harms of pharmacological interventions<br><br>≥7 years old | Total number of completed or in-progress systematic reviews - 1<br>• In-Process (Other Protocols) - 1[23] | Size/scope of review<br>Relevant Studies Identified: 1<br>• RCT - 1[35]<br>Projected Total: 17<br><br>ClinicalTrials.gov<br>Relevant Trials: 1<br>• Recruiting – 1[50] |
| KQ 5b<br>Benefits and harms of pharmacological interventions<br><br>≤6 years old | Total number of completed or in-progress systematic reviews - 1<br>• In-Process (Other Protocols) - 1[23] | Size/scope of review<br>Relevant Studies Identified: 0<br>Projected Total: 0<br><br>ClinicalTrials.gov<br>Relevant Trials: None identified. |
| KQ 5c<br>Benefits and harms of pharmacological interventions<br><br>Subpopulations | Total number of completed or in-progress evidence reviews – None identified. | Size/scope of review<br>Relevant Studies Identified: 0<br>Projected Total: 0<br><br>ClinicalTrials.gov<br>Relevant Trials: 1<br>• Active, not recruiting – 1[51] |

*Abbreviations:* AHRQ=Agency for Healthcare Research and Quality; CBT=Cognitive Behavioral Therapy; KQ=Key Question; NR=Not Reported; OCD=Obsessive-Compulsive Disorder PTSD=Post-Traumatic Stress Disorder; RCT=Randomized Controlled Trial; SOE=Strength of Evidence; SSRI=Selective-Serotonin Reuptake Inhibitor

### Value

The potential for value is high, given that AACAP will use a new AHRQ systematic review to update their 2010 practice parameters. While could not identify a knowledge gap or inconsistency, a systematic review is required in order for the nominator to update their guidelines, even if this systematic review agrees with their previous conclusions. This organization has previously produced evidence based guidelines, and are transparent about their methodology.

## Summary of Findings

- Appropriateness and Importance: The nomination is both appropriate and important.
- Duplication: A new AHRQ evidence review on this topic would not duplicate an existing product. We identified complete and in-process evidence reviews for KQ 1, 3, 4, and 5a. We identified no systematic reviews pertaining to KQ 3 or KQ 5b.
- Impact: A new systematic review on the proposed topic may have limited impact. Many studies have been published since the 2010 guidelines, but the information provided in these new studies is consistent with conclusion of the 2010 guidelines.
- Feasibility: There is available published literature to support a systematic review. We identified a number of primary studies across most key questions, though our confidence in the estimate of study numbers is low because of the limited sampling as described in our methods. A new systematic review on the proposed topic may have limited impact. Many studies have been published since the 2010 guidelines,

but the information provided in these new studies is consistent with conclusion of the 2010 guidelines.

- Value: The potential for value is high, given that AACAP will use a new AHRQ systematic review to update their 2010 practice parameters. This organization has previously produced evidence based guidelines, and are transparent about their methodology.

## References


1. Merikangas KR, He JP, Burstein M, et al. Lifetime prevalence of mental disorders in U.S. adolescents: results from the National Comorbidity Survey Replication--Adolescent Supplement (NCS-A). *J Am Acad Child Adolesc Psychiatry.* Oct 2010;49(10):980-989.
2. Kessler RC, Petukhova M, Sampson NA, Zaslavsky AM, Wittchen HU. Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. *Int J Methods Psychiatr Res.* Sep 2012;21(3):169-184.
3. Center VAM. PTSD: National Center for PTSD. 2015; http://www.ptsd.va.gov/public/family/ptsd-children-adolescents.asp. Accessed August 24, 2016.
4. Martinez W, Polo AJ, Zelic KJ. Symptom variation on the trauma symptom checklist for children: a within-scale meta-analytic review. *J Trauma Stress.* Dec 2014;27(6):655-663.
5. Shakespeare-Finch J, Lurie-Beck J. A meta-analytic clarification of the relationship between posttraumatic growth and symptoms of posttraumatic distress disorder. *Journal of Anxiety Disorders.* Mar 2014;28(2):223-229.
6. Trickey D, Siddaway AP, Meiser-Stedman R, Serpell L, Field AP. A meta-analysis of risk factors for post-traumatic stress disorder in children and adolescents. *Clin Psychol Rev.* Mar 2012;32(2):122-138.
7. Nooner KB, Linares L, Batinjane J, Kramer RA, Silva R, Cloitre M. Factors related to posttraumatic stress disorder in adolescence. *Trauma, Violence, & Abuse.* Jul 2012;13(3):153-166.
8. Kirsch DL, Price LR, Nichols F, Marksberry JA, Platoni KT. Military service member and veteran self reports of efficacy of cranial electrotherapy stimulation for anxiety, posttraumatic stress disorder, insomnia, and depression. *US Army Med Dep J.* Oct-Dec 2014:46-54.
9. Alisic E, Jongmans MJ, van Wesel F, Kleber RJ. Building child trauma theory from longitudinal studies: a meta-analysis. *Clin Psychol Rev.* Jul 2011;31(5):736-747.
10. Rolfsnes ES, Idsoe T. School-based intervention programs for PTSD symptoms: A review and meta-analysis. *Journal of Traumatic Stress.* Apr 2011;24(2):155-165.
11. Gillies D, Taylor F, Gray C, O'Brien L, D'Abrew N. Psychological therapies for the treatment of post-traumatic stress disorder in children and adolescents. *Cochrane Database Syst Rev.* 2012;12:CD006726.
12. Miller-Graff LE, Galano M, Graham-Bermann SA. Expression of re-experiencing symptoms in the therapeutic context: A mixed-method analysis of young children exposed to intimate partner violence. *Child Care in Practice.* Jan 2016;22(1):64-77.
13. Lenz A, Hollenbaugh K. Meta-analysis of trauma-focused cognitive behavioral therapy for treating PTSD and co-occurring depression among children and adolescents. *Counseling Outcome Research and Evaluation.* Jun 2015;6(1):18-32.
14. de Arellano MA, Lyman DR, Jobe-Shields L, et al. Trauma-focused cognitive-behavioral therapy for children and adolescents: assessing the evidence. *Psychiatr Serv.* May 1 2014;65(5):591-602.
15. Cary CE, McMillen J. The data behind the dissemination: A systematic review of trauma-focused cognitive behavioral therapy for use with children and youth. *Children and Youth Services Review.* Apr 2012;34(4):748-757.
16. Kowalik J, Weller J, Venter J, Drachman D. Cognitive behavioral therapy for the treatment of pediatric posttraumatic stress disorder: a review and meta-analysis. *J Behav Ther Exp Psychiatry.* Sep 2011;42(3):405-413.
17. Field A, Cottrell D. Eye movement desensitization and reprocessing as a therapeutic intervention for traumatized children and adolescents: A systematic review of the evidence for family therapists. *Journal of Family Therapy.* Nov 2011;33(4):374-388.
18. Uttley L, Scope A, Stevenson M, et al. Systematic review and economic modelling of the clinical effectiveness and cost-effectiveness of art therapy among people with non-psychotic mental health disorders. *Health Technol Assess.* Mar 2015;19(18):1-120, v-vi.

19. Baetz C, Branson C, R R. The effectiveness of PTSD treatment for juvenile offenders: a meta-analysis *PROSPERO.* 2016.
20. Clarkson H, Allcott-Watson H, Shafran R, S B. The effectiveness of intensive CBT for anxiety disorders, OCD and PTSD in children and adolescents: a systematic review *PROSPERO.* 2016.
21. Association for Children at Risk. Evaluating Effectiveness of Dyadic Prolonged Exposure on 2-4 Years Old vs. Toddler-parent Focused Treatment. *ClinicalTrials.gov.* 2014-;NCT02226393.
22. Miller-Graff LE, Campion K. Interventions for posttraumatic stress with children exposed to violence: Factors associated with treatment success. *Journal of Clinical Psychology.* Mar 2016;72(3):226-248.
23. N M. Meta-analysis of interventions for pediatric PTSD *PROSPERO.*
24. Roberts AL, Rosario M, Corliss HL, Koenen KC, Austin SB. Elevated risk of posttraumatic stress in sexual minority youths: mediation by childhood abuse and gender nonconformity. *Am J Public Health.* Aug 2012;102(8):1587-1593.
25. Hunt KL, Martens PM, Belcher HM. Risky business: Trauma exposure and rate of posttraumatic stress disorder in African American children and adolescents. *Journal of Traumatic Stress.* Jun 2011;24(3):365-369.
26. Guo W, Xue J-M, Shao D, Long Z-T, Cao F-L. Effect of the interplay between trauma severity and trait neuroticism on posttraumatic stress disorder symptoms among adolescents exposed to a pipeline explosion. *PLoS ONE.* Mar 2015;10(3).
27. Zheng Y, Fan F, Liu X, Mo L. Life events, coping, and posttraumatic stress symptoms among Chinese adolescents exposed to 2008 Wenchuan Earthquake, China. *PLoS One.* 2012;7(1):e29404.
28. Cobham VE, McDermott B. Perceived parenting change and child posttraumatic stress following a natural disaster. *J Child Adolesc Psychopharmacol.* Feb 2014;24(1):18-23.
29. Berkowitz SJ, Stover CS, Marans SR. The Child and Family Traumatic Stress Intervention: Secondary prevention for youth at risk of developing PTSD. *Journal of Child Psychology and Psychiatry.* Jun 2011;52(6):676-685.
30. Boyes ME, Cluver LD, Gardner F. Psychometric properties of the child PTSD checklist in a community sample of South African children and adolescents. *PLoS One.* 2012;7(10):e46905.
31. Frank-Schultz F, Naidoo P, Cloete KJ, Seedat S. The Child Posttraumatic Stress Disorder Checklist in a sample of South African youth: establishing factorial validity. *J Nerv Ment Dis.* Aug 2012;200(8):692-698.
32. Kramer DN, Hertli MB, Landolt MA. Evaluation of an early risk screener for PTSD in preschool children after accidental injury. *Pediatrics.* Oct 2013;132(4):e945-951.
33. Deblinger E, Mannarino AP, Cohen JA, Runyon MK, Steer RA. Trauma-focused cognitive behavioral therapy for children: Impact of the trauma narrative and treatment length. *Depression and Anxiety.* Jan 2011;28(1):67-75.
34. Santiago CD, Lennon JM, Fuller AK, Brewer SK, Kataoka SH. Examining the impact of a family treatment component for CBITS: when and for whom is it helpful? *J Fam Psychol.* Aug 2014;28(4):560-570.
35. Scheeringa MS, Weems CF. Randomized placebo-controlled D-cycloserine with cognitive behavior therapy for pediatric posttraumatic stress. *J Child Adolesc Psychopharmacol.* Mar 2014;24(2):69-77.
36. " Little Warriors. A 1-year Program to Treat Children Who Have Been Victims of Child Sexual Abuse. *ClinicalTrials.gov.* 2014-;NCT02181751.
37. " University of Washington. Trauma Survivors Outcomes and Support Study IV (TSOS IV). *ClinicalTrials.gov.* 2012-;NCT01625416.
38. " Maier CM. Controlled Trial of Early Intervention With Children and Adolescents Exposed to Nonrelational Traumatic Events. *ClinicalTrials.gov.* 2014-;NCT02299583.
39. " New York University School of Medicine. Helping Children With Trauma. *ClinicalTrials.gov.* 2016-;NCT02737488.

40. " University of Iowa . Evaluation of Parent-based Programs to Support Children After Traumatic Injury. *ClinicalTrials.gov.* 2012-;NCT02323204.
41. " Children's Hospital of Philadelphia . A Trial of "Coping Coach," a Web-based Preventive Intervention for Children. *ClinicalTrials.gov.* 2012-;NCT01653288.
42. " University of Washington. A Comparative Effectiveness Trial of Optimal Patient-Centered Care (TSOS 5). *ClinicalTrials.gov.* 2013-;NCT02274688.
43. " Sunnybrook Health Sciences Centre. Early Prevention of Post Traumatic Stress Disorder. *ClinicalTrials.gov.* 2013;NCT02004743.
44. " St. Michael's Hospital, Toronto. Lending a Hand to Our Future: PTSD in Refugee Children and Youth (LHOF). *ClinicalTrials.gov.* 2014-;NCT02334566.
45. " University of South Florida. Stepped Care for Children After Trauma: Optimizing Treatment. *ClinicalTrials.gov.* 2015-;NCT02537678.
46. " Medical University of South Carolina. Technology-Based Tools to Enhance Quality of Care in Mental Health Treatment. *ClinicalTrials.gov.* 2013-;NCT01915160.
47. " University of Maryland. Strengthening Family Coping Resources Open Trials (SFCR). *ClinicalTrials.gov.* 2012-;NCT01754610.
48. " University of Washington. Effectiveness of PTSD Treatment For Suicidal and Multi-Diagnostic Clients. *ClinicalTrials.gov.* 2015-;NCT02615197.
49. " University of Ulm. Effectiveness of Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT) for Children With Post-traumatic Stress Disorder (TreatChildTrauma) (TCT). *ClinicalTrials.gov [Internet].* 2011;NCT01516827
50. Chiba University. Ifenprodil Tartrate Treatment of Adolescents With Post-traumatic Stress Disorder: a Double-blind, Placebo-controlled Trial. *ClinicalTrials.gov.* 2013-;NCT01896388.
51. Jonge Pd. Initial Severity and Antidepressant Efficacy for Anxiety Disorders: an Individual Patient Data Meta-analysis. *ClinicalTrials.gov.* 2015-;NCT02476136.

# Appendices

**Appendix A: Selection Criteria Summary**

**Appendix B: Search for Systematic Reviews (Duplication)**

**Appendix C: Search Strategy & Results (Feasibility)**

## Appendix A. Selection Criteria Summary (

| Selection Criteria | Supporting Data |
|---|---|
| 1. Appropriateness | |
| 1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.? | Yes, this topic represents a health care drug and intervention available in the U.S. |
| 1b. Is the nomination a request for a systematic review? | Yes, this topic is a request for a systematic review. |
| 1c. Is the focus on effectiveness or comparative effectiveness? | The focus of this review is on both effectiveness and comparative effectiveness. |
| 1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic? | Yes, it is biologically plausible. Yes, it is consistent with what is known about the topic. |
| 2. Importance | |
| 2a. Represents a significant disease burden; large proportion of the population | Yes, this topic represents a significant burden. AACAP states that the overall lifetime prevalence of PTSD in the general population of children and youth is estimated at between 3 and 9%. |
| 2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population | Yes, this topic affects heath care decisions for a large, vulnerable population. |
| 2c. Represents important uncertainty for decision makers | Yes, this topic represents important uncertainty for decision makers. |
| 2d. Incorporates issues around both clinical benefits and potential clinical | Yes, this nomination addresses both benefits and potential harms of prevention interventions, pharmacological interventions, and non-pharmacological treatments for PTSD. |
| 2e. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers | Yes this mental health diagnosis represents high cost due to the high rate of health and interpersonal dysfunction. AACAP states that when psychopathologic outcomes are present, comorbidity is the rule, including anxiety, mood, disruptive behavior, psychotic, somatic symptom, and substance abuse disorders. PTSD symptoms and impairment may persist for decades and cause impairment in multiple domains of life, including academic and work accomplishment, interpersonal relationships, and parenting abilities. |
| 3. Desirability of a New Evidence Review/Duplication | |
| 3. Would not be redundant (i.e., the proposed topic is not already covered by available or soon-to-be available high-quality systematic review by AHRQ or others) | We identified no completed or in-process reviews examining diagnostic screening (KQ2) or pharmacologic interventions for children six years and under (KQ4b). We identified existing and in-process evidence reviews examining risk factors (KQ1), nonpharmacological interventions (KQ3), pharmacological interventions for children seven and older (KQ4a), and interventions to prevention PTSD in children and adolescents (KQ5). The most pertinent is a Cochrane review (2012) of psychological therapies for |

| | |
|---|---|
| | the treatment of PTSD in children and adolescents. |
| 4. Impact of a New Evidence Review | |
| 4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)? | The standard of care is clear. |
| 4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)? | The new evidence for assessing and treating PTSD in children and adolescents generally agrees with the 2010 AACAP clinical practice guideline that is archived and needs to be updated. |
| 5. Primary Research | |
| 5. Effectively utilizes existing research and knowledge by considering:<br>- Adequacy (type and volume) of research for conducting a systematic review<br>- Newly available evidence (particularly for updates or new technologies) | *Size/scope of review:* We estimate that the total size of the relevant literature (2011-present) may be approximately 250 studies across key questions (low confidence).<br><br>*ClinicalTrials.gov:* We identified 19 relevant trials on ClinicalTrials.gov.<br><br>*Cochrane RCT filter results:* We identified 11 additional RCTs examining prevention and nonpharmacological interventions. |
| 6. Value | |
| 6a. The proposed topic exists within a clinical, consumer, or policy-making context that is amenable to evidence-based change | Yes, this topic will inform clinical decision-making on screening, diagnosing, treating, and preventing PTSD among children and adolescents across community and clinical settings. |
| 6b. Identified partner who will use the systematic review to influence practice (such as a guideline or recommendation) | Yes, AACAP will use a systematic review to update their 2010 practice parameters on the assessment and treatment of PTSD among children and adolescents. The clinical practice guidelines provided by AACAP are archived and need to be updated via a systematic review. |

*Abbreviations:* AACAP= American Academy of Child & Adolescent Psychiatry; AHRQ=Agency for Healthcare Research and Quality; DSM-5=Diagnostics and Statistics Manual 5; KQ=Key Question; PTSD=Post-Traumatic Stress Disorder

## Appendix B. Search for Systematic Reviews (Duplication)

Listed below are the sources searched and results of our search for existing guidance. A research librarian conducted the search and selected potentially relevant evidence based on the key question in the nomination and the associated PICOTS. An investigator reviewed each of the links to evidence below for inclusion. The links below do not represent the evidence selected for inclusion (see main topic brief).

| **PTSD in Children and Adolescents** | |
|---|---|
| **Source** | **Evidence** |
| **Search for Duplication: June 8, 2016** | |
| **AHRQ and Other Federal Products** | |
| AHRQ: Evidence reports and technology assessments, USPSTF recommendations, and related DEcIDE projects, and Horizon Scan | *Child and Adolescent Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Trauma Other Than Maltreatment or Family Violence*<br>http://www.ncbi.nlm.nih.gov/books/NBK126092/<br><br>*First- and Second-Generation Antipsychotics in Children and Young Adults-Systematic Review Update*<br>https://www.effectivehealthcare.ahrq.gov/ehc/products/615/2244/antipsychotics-children-update-draft-report-160606.pdf |
| VA Products: PBM, and HSR&D (ESP) publications, and VA/DoD EBCPG Program | [nothing for adolescents or children] |
| Cochrane Systematic Reviews and Protocols<br>http://www.cochranelibrary.com/ | *Psychological therapies for the treatment of post-traumatic stress disorder in children and adolescents*<br>http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD006726.pub2/full |
| PubMed Health<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/ | *Post-Traumatic Stress Disorder: The Management of PTSD in Adults and Children in Primary and Secondary Care*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0015848/<br><br>*Cognitive Processing Therapy for Post-Traumatic Stress Disorder: A Systematic Review and Meta-Analysis*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0087723/<br><br>*An evidence synthesis of risk identification, assessment and management for young people using tier 4 inpatient child and adolescent mental health services*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0081623/<br><br>*Screening for Child and Adolescent Depression In Primary Care Settings*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0005789/<br><br>*A systematic review to study the efficacy of cognitive behavioral therapy for sexually abused children and adolescents with posttraumatic stress disorder*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0029192/ |

| | |
|---|---|
| | *Systematic review and economic modelling of the clinical effectiveness and cost-effectiveness of art therapy among people with non-psychotic mental health disorders*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0082202/<br><br>*School-based intervention programs for PTSD symptoms: A review and meta-analysis*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0033045/<br><br>*Cognitive behavioral therapy for the treatment of pediatric posttraumatic stress disorder: a review and meta-analysis*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0031266/<br><br>*Evidence-based psychosocial treatments for children and adolescents exposed to traumatic events*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0026333/<br><br>*The effectiveness of interventions to reduce psychological harm from traumatic events among children and adolescents. A systematic review*<br>http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0026074/ |
| HTA (CRD database): Health Technology Assessments<br>http://www.crd.york.ac.uk/crdweb/ | *EMDR - psychotherapy in posttraumatic stress syndrome in young people - early assessment briefs (Alert)*<br>http://www.crd.york.ac.uk/CRDWeb/ShowRecord.asp?AccessionNumber=32002000075&UserID=0 |
| PROSPERO Database (international prospective register of systematic reviews and protocols)<br>http://www.crd.york.ac.uk/prospero/ | *The effectiveness of PTSD treatment for juvenile offenders: a meta-analysis*<br>http://www.crd.york.ac.uk/prospero/display_record.asp?ID=CRD42016039858<br><br>*The effectiveness of intensive CBT for anxiety disorders, OCD and PTSD in children and adolescents: a systematic review*<br>http://www.crd.york.ac.uk/prospero/display_record.asp?ID=CRD42016038783<br><br>*Meta-analysis of interventions for pediatric PTSD*<br>http://www.crd.york.ac.uk/prospero/display_record.asp?ID=CRD42016032695 |
| CADTH (Canadian Agency for Drugs and Technologies in Health)<br>https://www.cadth.ca/ | *Anti-Psychotics in Pediatric Patients: Clinical Effectiveness and A Review of the Guidelines*<br>https://www.cadth.ca/anti-psychotics-pediatric-patients-clinical-effectiveness-and-review-guidelines |
| DoPHER (Database of promoting health effectiveness reviews)<br>http://eppi.ioe.ac.uk/webdatabases4/Intro.aspx?ID=9 | [no new results] |
| ECRI institute<br>https://www.ecri.org/Pages/default.aspx | [no new results] |

| | |
|---|---|
| PsycINFO (Ovid) | *Symptom variation on the trauma symptom checklist for children: A within-scale meta-analytic review*<br>http://onlinelibrary.wiley.com/enhanced/doi/10.1002/jts.21967/<br><br>*Trauma-focused cognitive-behavioral therapy for children and adolescents: Assessing the evidence*<br>http://ps.psychiatryonline.org/doi/abs/10.1176/appi.ps.201300255<br><br>*Psychological treatment of PTSD in children: An evidence-based review*<br>http://www.tandfonline.com/doi/abs/10.1080/03033910.2011.611612<br><br>*Psychophysiological characteristics of PTSD in children and adolescents: A review of the literature*<br>http://onlinelibrary.wiley.com/doi/10.1002/jts.20620/full<br><br>*I'll Be Working My Way Back: A Qualitative Synthesis on the Trauma Experience of Children*<br>http://psycnet.apa.org/journals/tra/4/5/516/<br><br>*Cognitive-behavioral treatment for posttraumatic stress disorder in children and adolescents*<br>http://www.sciencedirect.com/science/article/pii/S1056499311000071<br><br>*Building child trauma theory from longitudinal studies: A meta-analysis*<br>http://www.sciencedirect.com/science/article/pii/S0272735811000493<br><br>*PTSD in children and adolescents: Toward an empirically based algorithm*<br>http://onlinelibrary.wiley.com/doi/10.1002/da.20736/full<br><br>*Anticipatory stress response in PTSD: Extreme stress in children*<br>http://onlinelibrary.wiley.com/doi/10.1111/j.1744-6171.2010.00266.x/full<br><br>*Predicting posttraumatic stress following pediatric injury: A systematic review*<br>http://jpepsy.oxfordjournals.org/content/36/6/718.short<br><br>*Eye movement desensitization and reprocessing as a therapeutic intervention for traumatized children and adolescents: A systematic review of the evidence for family therapists*<br>http://onlinelibrary.wiley.com/doi/10.1111/j.1467-6427.2011.00548.x/full<br><br>*The role of family phenomena in posttraumatic stress in youth*<br>http://onlinelibrary.wiley.com/doi/10.1111/j.1744-6171.2010.00258.x/full<br><br>*Children's post-traumatic stress and the role of memory following admission to intensive care: A review*<br>http://onlinelibrary.wiley.com/doi/10.1111/j.1742-9552.2012.00040.x/full |

| | |
|---|---|
| | *Neuropsychological effects of posttraumatic stress disorder in children and adolescents.*<br>http://cjs.sagepub.com/content/27/2/166.short<br><br>*Factors related to posttraumatic stress disorder in adolescence*<br>http://tva.sagepub.com/content/early/2012/06/01/1524838012447698.abstract<br><br>*Pharmacological secondary prevention of PTSD in youth: Challenges and opportunities for advancement*<br>http://onlinelibrary.wiley.com/doi/10.1002/jts.21731/full<br><br>*The association between parent PTSD/depression symptoms and child PTSD symptoms: A meta-analysis.*<br>https://jpepsy.oxfordjournals.org/content/early/2012/09/25/jpepsy.jss091.full<br><br>*Children and war: Risk, resilience, and recovery*<br>http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8538902&fileId=S0954579412000156<br><br>*Prevalence of post-traumatic stress disorder among children and adolescents who survive road traffic crashes: A systematic review of the international literature*<br>http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1754.2011.02076.x/full<br><br>*A meta-analysis of risk factors for post-traumatic stress disorder in children and adolescents.*<br>http://www.sciencedirect.com/science/article/pii/S0272735811001875<br><br>*The data behind the dissemination: A systematic review of trauma-focused cognitive behavioral therapy for use with children and youth.*<br>http://www.sciencedirect.com/science/article/pii/S0190740912000138<br><br>*White matter integrity and its relationship to PTSD and childhood trauma-A systematic review and meta-analysis*<br>http://onlinelibrary.wiley.com/doi/10.1002/da.22044/full<br><br>*Equine-assisted therapy and its impact on cortisol levels of children and horses: A pilot study and meta-analysis*<br>http://www.tandfonline.com/doi/abs/10.1080/03004430.2012.693486#.V1h5JOSVCqw<br><br>*Neuroimaging in children, adolescents and young adults with psychological trauma*<br>http://link.springer.com/article/10.1007/s00787-013-0410-1<br><br>*A meta-analytic clarification of the relationship between posttraumatic growth and symptoms of posttraumatic distress disorder.*<br>http://www.sciencedirect.com/science/article/pii/S0887618513001825<br><br>*Psychological and pharmacologic treatment of youth with posttraumatic stress disorder: An evidence-based review* |

| | |
|---|---|
| | http://www.sciencedirect.com/science/article/pii/S1056499313001065<br><br>*A comparison of narrative exposure therapy and prolonged exposure therapy for PTSD*<br>http://www.sciencedirect.com/science/article/pii/S027273581400097X<br><br>*Design, delivery, and evaluation of early interventions for children exposed to acute trauma*<br>http://www.ejpt.net/index.php/ejpt/article/view/22757<br><br>*Meta-analysis of trauma-focused cognitive behavioral therapy for treating PTSD and co-occurring depression among children and adolescents.*<br>http://cor.sagepub.com/content/6/1/18.short<br><br>*The biological effects of childhood trauma*<br>http://www.sciencedirect.com/science/article/pii/S1056499314000030<br><br>*Posttraumatic stress following acute medical trauma in children: A proposed model of bio-psycho-social processes during the peri-trauma period*<br>http://link.springer.com/article/10.1007/s10567-014-0174-2<br><br>*Interventions for posttraumatic stress with children exposed to violence: Factors associated with treatment success*<br>http://onlinelibrary.wiley.com/doi/10.1002/jclp.22238/ |
| Secondary Sources checked on an as needed basis | |
| BlueCross BlueShield Foundation Massachusetts<br>http://bluecrossfoundation.org/ | None identified. |
| Campbell Collaboration<br>http://www.campbellcollaboration.org/ | None identified. |
| CMS Policies https://www.cms.gov/ | None identified. |
| Hayes, inc.<br>http://www.hayesinc.com/hayes/ | None identified. |
| IOM (Institute of Medicine)<br>http://iom.nationalacademies.org/ | None identified. |
| McMaster Health System Evidence<br>https://www.healthsystemsevidence.org/ | None identified. |
| Robert Wood Johnson http://www.rwjf.org/ | None identified. |
| Systematic Reviews (Journal) : protocols and reviews<br>http://systematicreviewsjournal.biomedce | None identified. |

| | |
|---|---|
| ntral.com/ | |
| UBC Centre for Health Services and Policy Research http://chspr.ubc.ca/ | None identified. |
| WHO Health Evidence Network http://www.euro.who.int/en/data-and-evidence/evidence-informed-policy-making/health-evidence-network-hen | None identified. |
| National Heart, Lung, and Blood Institute http://www.nhlbi.nih.gov/ | None identified. |
| National Cancer Institute http://www.cancer.gov/ | None identified. |
| CINAHL (EBSCO) | None identified. |

## Appendix C. Search Strategy & Results (Feasibility)

| Topic: PTSD and Kids<br>Date: June 10, 2016<br>Database Searched: PubMed | |
|---|---|
| **Concept** | **Search String** |
| PTSD | (("Stress Disorders, Post-Traumatic"[Mesh] OR "Combat Disorders"[Mesh])) OR ((ptsd[Title/Abstract]) OR post traumatic stress disorder[Title/Abstract]OR posttraumatic stress[title/abstract]) |
| NOT Editorials, etc. | ((((((("Letter"[Publication Type]) OR "News"[Publication Type]) OR "Patient Education Handout"[Publication Type]) OR "Comment"[Publication Type]) OR "Editorial"[Publication Type])) OR "Newspaper Article"[Publication Type] |
| Limit to last 5 years Children Human English | |
| **N=2548** | |
| Systematic Review<br>**N=101** | PubMed subsection "Systematic [sb]" |
| Randomized Controlled Trials<br>**N=562** | Cochrane Sensitive Search Strategy for RCT's "(((((((((groups[tiab])) OR (trial[tiab])) OR (randomly[tiab])) OR (drug therapy[sh])) OR (placebo[tiab])) OR (randomized[tiab])) OR (controlled clinical trial[pt])) OR (randomized controlled trial[pt])" |
| Other<br>**N=1885** | |

| Topic: PTSD and Kids<br>Date: June 10, 2016<br>Database Searched: PsycINFO (Ovid) 1806 to June Week 2 2016 | |
|---|---|
| **Concept** | **Search String** |
| PTSD | 1 exp Posttraumatic Stress Disorder/<br>2 (PTSD or "post traumatic stress disorder" or "posttraumatic stress disorder").m_titl.<br>3 1 or 2 |
| Children and Adolescents | 4 limit 3 to (100 childhood <birth to age 12 yrs> or 200 adolescence <age 13 to 17 yrs>) |
| Not Editorials, etc. | 5 limit 4 to ("column/opinion" or "comment/reply" or editorial or letter or review-book)<br>6 4 not 5 |
| Limit to last 5 years Human English | 7 limit 6 to (human and english language and last 5 years) |
| **N=1169** | |
| Systematic Review **N=20** | 8 limit 7 to ("0830 systematic review" or 1200 meta analysis) |
| Randomized Controlled Trials<br>**N=45** | 9 7 not 8<br>10 limit 9 to "2000 treatment outcome/clinical trial" |
| Otherm**N=1104** | 11 9 not 10 |

Clinicaltrials.gov Searched on June 10, 2016
60 studies found for: Stress Disorders, Post-Traumatic | Child | received from 06/10/2011 to 06/10/2016
Link to Results:
https://clinicaltrials.gov/ct2/results?term=&recr=&rslt=&type=&cond=Stress+Disorders%2C+Post-Traumatic&intr=&titles=&outc=&spons=&lead=&id=&state1=&cntry1=&state2=&cntry2=&state3=&cntry3=&locn=&gndr=&age=0&rcv_s=06%2F10%2F2011&rcv_e=06%2F10%2F2016&lup_s=&lup_e