

Topic Brief: Eating Disorder Care Delivery

Date: 8/29/2019 Nomination Number: 0858

Purpose: This document summarizes the information addressing a nomination submitted on 6/2/2019 through the Effective Health Care Website. This information was used to inform the Evidence-based Practice Center (EPC) Program decisions about whether to produce an evidence report on the topic, and if so, what type of evidence report would be most suitable.

Issue: Treatment for eating disorders is increasingly offered by for-profit residential treatment centers with limited accessibility and affordability¹. Further, evidence-based practices are limited in these settings due to a lack of research and data collection^{2, 3}. Additionally, an AHRQ review on the effectiveness of treatments for eating disorders has not been conducted since 2016⁴.

Program Decision:

The EPC Program will not develop a new systematic because, while we identified some primary studies, they did not adequately address many components of the nomination.

Key Findings

While we identified several systematic reviews and primary studies, this evidence covered only parts of the nomination and there was very little to no evidence for several components of the nomination.

Background

The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition categorizes eating disorders types as anorexia nervosa, bulimia nervosa, binge eating disorder, or other or unspecified feeding or eating disorders⁵. The incidence of eating disorders, as measured from 2001 to 2004, was 2.7% in adolescents and 1.2% in adults⁶. Eating disorder deaths have been cited as second only to opioid-related deaths in mental health disorder-related deaths⁷, with a mortality rate of approximately 10% in anorexia nervosa⁸.

Despite the harm associated with eating disorders, a limited proportion of the affected population seeks treatment $(33\% - 43\%)^6$. Barriers to treatment include cost⁹ and many insurance carriers do not cover eating disorder treatment¹⁰. For those who do seek treatment, the options are increasingly for-profit centers¹, for which there is limited research on the effectiveness of treatment in these settings, and in which there may be limited data collection^{2, 3}.

Nomination Summary

The original nomination focused on affordability, accessibility and effectiveness of care provided in for-profit versus not-for-profit eating disorder treatment models. Through discussion with the nominator, the scope was expanded to include an update of much of a 2006 AHRQ Evidence Report that evaluated efficacy and harms of treatment and factors and demographic features associated with treatment outcomes for anorexia nervosa, bulimia nervosa, and binge eating disorder⁴.

Scope

- 1) What is the evidence for efficacy of treatments for each of the following eating disorders: anorexia nervosa, bulimia nervosa, binge eating disorder, and avoidant/restrictive food intake disorder?
- 2) What is the evidence of harms associated with treatments for each of the following eating disorders: anorexia nervosa, bulimia nervosa, binge eating disorder, and avoidant/restrictive food intake disorder?
- 3) Does the efficacy of treatment for anorexia nervosa, bulimia nervosa, binge eating disorder, and avoidant/restrictive food intake disorder differ by patient characteristics?
- 4) For patients with eating disorders, do clinical outcomes vary with model of care delivery or setting?
- 5) For people with eating disorders, do outcomes vary based on insurance status?

Questions	1, 2) Efficacy and	3) Factors associated	4) Care model/setting	5) Insurance status
	names of treatment	outcomes		
Population	People with anorexia nervosa, bulimia nervosa, binge eating disorder, or avoidant/restrictive food intake disorder 10 years of age or older Subgroup by 1. Age (Adults, adolescents) 2. Severe and enduring types	People with severe and enduring anorexia nervosa, bulimia nervosa, binge eating disorder, or avoidant/restrictive food intake disorder 10 years of age or older Subgroup by 1. Age (Adults, adolescents) 2. Severe and enduring types Patient characteristics including: Sex, gender, age, race, ethnicity, cultural group, and other factors (e.g., comorbid conditions, BMI, motivation level)	People with severe and enduring anorexia nervosa, bulimia nervosa, binge eating disorder, or avoidant/restrictive food intake disorder 10 years of age or older Subgroup by 1. Age (Adults, adolescents) 2. Severe and enduring types	People with severe and enduring anorexia nervosa, bulimia nervosa, binge eating disorder, or avoidant/restrictive food intake disorder 10 years of age or older Subgroup by 1. Age (Adults, adolescents) 2. Severe and enduring types
Interventions	Pharmaceutical Behavioral Refeeding/weight restoration Combination and other	Pharmaceutical Behavioral Refeeding/weight restoration Combination and other	Inpatient care (but only outpatient for bulimia) Residential Care Outpatient care Partial hospitalization/day hospital care	Private insurance Medicare Medicaid No health insurance
Comparators	Any other intervention or no intervention	N/A	Intervention compared to any other model of care delivery	Other type of insurance

Table 1. Questions and PICOS (population, intervention, comparator, outcome, and setting)

Outcomes	Weight/BMI, bone density, % body fat, hormonal measures Binge eating/purging Oral and dental disease, esophagitis, laryngitis Psychological features of the eating disorder such as shape and weight concerns, restraint, disinhibition, hunger Quality of life measures Medical morbidity Mortality	Weight/BMI, bone density, % body fat, hormonal measures Binge eating/purging Psychological features of the eating disorder such as shape and weight concerns, restraint, disinhibition, hunger, quality of life Medical morbidity Mortality Measure of treatment recovery	Weight/BMI, bone density, % body fat, hormonal measures Binge eating/purging Psychological features of the eating disorder such as shape and weight concerns, restraint, disinhibition, hunger, quality of life Medical morbidity Mortality	Receipt of any treatment, Receipt of intensive treatment, Weight/BMI, bone density, % body fat, hormonal measures Binge eating/purging Psychological features of the eating disorder such as shape and weight concerns, restraint, disinhibition, hunger, quality of life Medical morbidity Mortality Cost (out of pocket), cost of treatment, cost-effectiveness and cost of weight restoration based on rates of gain
Setting	Any	Any	University or other non-profit treatment setting; Private, for-profit treatment setting	University or other non- profit treatment setting; Private, for-profit treatment setting

Assessment Methods

See Appendix A.

Summary of Literature Findings

We found 20 SRs related to this nomination but none of the reviews fully addressed any of the questions. Specifically, each question asked for evidence on five eating disorder types, in two age groups (adolescents and adults), and in both non-severe and enduring types and severe and enduring types. The multiple SRs did not address all of these subgroups for any of the questions. Instead, they covered a portion of each of these subcategories for Questions 1-4, and none for Question 5. Because the SRs did not fully cover any of the questions, we searched for primary studies and found a total of nine studies. These nine studies addressed portions of Questions 1-3, but did not cover the entirety of the subgroups for any of these questions. We did not identify any primary studies for Questions 4-5 (treatment setting and insurance status).

Question	Systematic reviews (8/2016-8/2019)	Primary studies (8/2014-8/2019)
Question 1:	Total: 15	Total: 4
Efficacy of		
treatment	Anorexia nervosa:2 SRs ¹¹ (one of these	Anorexia nervosa: 3 RCT ²⁶⁻²⁸ , 1 observational ²⁹
	Cochrane) ¹² , 1 protocol (adolescents) ¹³	
		Binge eating disorder: 0
	Bulimia nervosa: 1 protocol ¹⁴	
	Binge eating disorder: 3 SRs ¹⁵⁻¹⁷	
	Multiple eating disorders:	
	5 SRs^{18-22} , 3 protocols ^{23, 24} (1 severe and	
	enduring) ²⁵	

Question	Systematic reviews (8/2016-8/2019)	Primary studies (8/2014-8/2019)
Question 2: Harms of	Total: 6	Total: 2
treatment	Anorexia nervosa: 1 SR ¹² ; 1 protocol ¹³	Anorexia nervosa: 2 RCTs ^{27, 28}
	Binge eating disorder: 3 SRs ¹⁵⁻¹⁷	Binge eating disorder: 0
	Multiple eating disorders: 1 SR ¹⁹	
Question 3:	Total: 4	Total: 5
and other factors	Anorexia nervosa: 1 SR ³⁰	Binge eating disorder: 2 observational ^{34, 35}
treatment outcomes	Multiple eating disorders: 2 SRs ^{31, 32} , 1 protocol ³³	Multiple eating disorders: 3 observational ³⁶⁻³⁸
Question 4: Care	Total: 1	Total: 0
model/setting	Multiple eating disorders: 139 (Cochrane)	
Question 5:	Total: 0	Total: 0
insulative status		

See Appendix B for detailed assessments of all EPC selection criteria.

Summary of Selection Criteria Assessment

A new systematic review would assist with guideline development. We identified several systematic reviews that were partially duplicative for Questions 1, 2, 4, and 5. The Questions included subgroups of anorexia nervosa, binge eating disorders, bulimia nervosa, and avoidant/restrictive food intake disorder, as well the age subgroups of adolescents and adults. The identified systematic reviews did not adequately address all of these categories, nor did the body of identified primary studies. The systematic review findings are detailed above.

References

1. Attia E, Blackwood, K.L., Guarda, A.S., Marcus, M.D., Rothman, D.J. Marketing Residential Treatment Progrms for Eating Disorders: A Call for Transparency. Pscychiatric Services. 2016;67(6):664-6. doi: <u>https://dx.doi.org/10.1176/appi.ps.201500338</u>. <u>https://www.ncbi.nlm.nih.gov/pubmed/?term=marketing+residential+treatment+programs+for+e ating+disorders</u>

2. Oswald JM, Boswell JF, Smith M, et al. Practice-research integration in the residential treatment of patients with severe eating and comorbid disorders. Psychotherapy (Chicago, Ill). 2019 Mar;56(1):134-48. doi: <u>https://dx.doi.org/10.1037/pst0000180</u>. PMID: 30431294

3. Kazdin AE, Fitzsimmons-Craft EE, Wilfley DE. Addressing critical gaps in the treatment of eating disorders. The International journal of eating disorders. 2017 Mar;50(3):170-89. doi: https://dx.doi.org/10.1002/eat.22670. PMID: 28102908

4. Berkman ND, Bulik, C.M., Brownley, K.A., Lohr, K.N., Sedway, J.A., Rooks, A., Gartlehner, G. Management of Eating Disorders Agency for Healthcare Research and Quality. 2016. https://www.ncbi.nlm.nih.gov/pubmed/17628126

5. Association AP. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. Arlington, VA; 2013.

6. Health NIoM. Eating Disorders. <u>https://www.nimh.nih.gov/health/statistics/eating-disorders.shtml</u>. Accessed on 8/30/2019.

Chesney E, Goodwin GM, Fazel S. Risks of all-cause and suicide mortality in mental disorders: a meta-review. World psychiatry : official journal of the World Psychiatric Association (WPA). 2014 Jun;13(2):153-60. doi: <u>https://dx.doi.org/10.1002/wps.20128</u>. PMID: 24890068

8. Arcelus J, Mitchell AJ, Wales J, et al. Mortality rates in patients with anorexia nervosa and other eating disorders. A meta-analysis of 36 studies. Archives of general psychiatry. 2011 Jul;68(7):724-31. doi: https://dx.doi.org/10.1001/archgenpsychiatry.2011.74. PMID: 21727255

9. Ali K, Farrer L, Fassnacht DB, et al. Perceived barriers and facilitators towards help-seeking for eating disorders: A systematic review. The International journal of eating disorders. 2017 Jan;50(1):9-21. doi: <u>https://dx.doi.org/10.1002/eat.22598</u>. PMID: 27526643

10. Patel P. American Medical Association Calls for Insurance Coverage for Eating Disorders. Nathional Eating Disorders Association; 2016.

https://www.nationaleatingdisorders.org/blog/american-medical-association-calls-insurancecoverage-eating-disorders.

 Ziser K, Molbert SC, Stuber F, et al. Effectiveness of body image directed interventions in patients with anorexia nervosa: A systematic review. The International journal of eating disorders. 2018 Oct;51(10):1121-7. doi: <u>https://dx.doi.org/10.1002/eat.22946</u>. PMID: 30189104
 Fisher CA, Skocic S, Rutherford KA, et al. Family therapy approaches for anorexia nervosa. The Cochrane database of systematic reviews. 2019 May 1;5:Cd004780. doi: https://dx.doi.org/10.1002/14651858.CD004780.pub4. PMID: 31041816

13. Beykloo MY, Naser, A., Nicholls, D., Simic, M., Brauer, R., Wong, I. The Efficacy and Safety of Psychotropic Drug Treatment in Adolescents wih Anorexia Nervosa: A Systematic Review. PROSPERO, National Institute for Health Research; PROSPERO 2018 CRD42018076901.

https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42018076901.

14. Svaldi J, Schmitz F, Baur J, et al. Efficacy of psychotherapies and pharmacotherapies for Bulimia nervosa. Psychological medicine. 2019 Apr;49(6):898-910. doi: https://dx.doi.org/10.1017/s0033291718003525. PMID: 30514412

15. Peat CM, Berkman ND, Lohr KN, et al. Comparative Effectiveness of Treatments for Binge-Eating Disorder: Systematic Review and Network Meta-Analysis. European eating disorders review : the journal of the Eating Disorders Association. 2017 Sep;25(5):317-28. doi: https://dx.doi.org/10.1002/erv.2517. PMID: 28467032

16. Ghaderi A, Odeberg J, Gustafsson S, et al. Psychological, pharmacological, and combined treatments for binge eating disorder: a systematic review and meta-analysis. PeerJ. 2018;6:e5113. doi: https://dx.doi.org/10.7717/peerj.5113. PMID: 29942715

17. Brownley KA, Berkman ND, Peat CM, et al. Binge-Eating Disorder in Adults: A Systematic Review and Meta-analysis. Annals of internal medicine. 2016 Sep 20;165(6):409-20. doi: https://dx.doi.org/10.7326/m15-2455. PMID: 27367316

18. Linardon J, Fairburn CG, Fitzsimmons-Craft EE, et al. The empirical status of the third-wave behaviour therapies for the treatment of eating disorders: A systematic review. Clinical psychology review. 2017 Dec;58:125-40. doi: <u>https://dx.doi.org/10.1016/j.cpr.2017.10.005</u>. PMID: 29089145

19. Fogarty S, Smith CA, Hay P. The role of complementary and alternative medicine in the treatment of eating disorders: A systematic review. Eating behaviors. 2016 Apr;21:179-88. doi: https://dx.doi.org/10.1016/j.eatbeh.2016.03.002. PMID: 26970732

20. Traviss-Turner GD, West RM, Hill AJ. Guided Self-help for Eating Disorders: A Systematic Review and Metaregression. European eating disorders review : the journal of the Eating Disorders Association. 2017 May;25(3):148-64. doi: <u>https://dx.doi.org/10.1002/erv.2507</u>. PMID: 28276171

21. Anastasiadou D, Folkvord F, Lupianez-Villanueva F. A systematic review of mHealth interventions for the support of eating disorders. European eating disorders review : the journal of the Eating Disorders Association. 2018 Sep;26(5):394-416. doi:

https://dx.doi.org/10.1002/erv.2609. PMID: 29927004

22. Yim SH, Schmidt U. Experiences of computer-based and conventional self-help interventions for eating disorders: A systematic review and meta-synthesis of qualitative research. The International journal of eating disorders. 2019 Jul 25. doi: https://dx.doi.org/10.1002/eat.23142. PMID: 31343088

23. Medina JC, Feizas, G., Arellano, N.A., Suarez, V. A Systematic Review of the Efficacy of Psychological Interventions for Eating Disorders in Outpatient Settings. PROSPERO 2019 CRD42019122618: PROSPERO, National Institute for Health Research; 2019.

http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42019122618.

24. Edirippulige S, Bambling, M., Hansen, J., Zhou, X. Examining the Evidence for Text-Based Online Interventions in Eating Disorders: A Systematic Review. PROSPERO 2019 CRD42019130604.

https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42019130604

25. Kotilahti E, Ruusunen, A., Isomaa, R., Karhunen, L. The Treatment of Severe and Enduring Eating Disorders: A Systematic Review. PROSPERO, National Institute for Health Research; PROSPERO 2018 CRD42018115802.

https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42018115802.

26. Schmidt U, Ryan EG, Bartholdy S, et al. Two-year follow-up of the MOSAIC trial: A multicenter randomized controlled trial comparing two psychological treatments in adult outpatients with broadly defined anorexia nervosa. The International journal of eating disorders. 2016 Aug;49(8):793-800. doi: <u>https://dx.doi.org/10.1002/eat.22523</u>. PMID: 27061709
27. Russell J, Maguire S, Hunt GE, et al. Intranasal oxytocin in the treatment of anorexia nervosa: Randomized controlled trial during re-feeding. Psychoneuroendocrinology. 2018 Jan;87:83-92. doi: <u>https://dx.doi.org/10.1016/j.psyneuen.2017.10.014</u>. PMID: 29049935
28. Fazeli PK, Lawson EA, Faje AT, et al. Treatment With a Ghrelin Agonist in Outpatient Women With Anorexia Nervosa: A Randomized Clinical Trial. The Journal of clinical psychiatry. 2018 Jan/Feb;79(1). doi: <u>https://dx.doi.org/10.4088/JCP.17m11585</u>. PMID: 29325236

29. Frank GK, Shott ME, Hagman JO, et al. The partial dopamine D2 receptor agonist aripiprazole is associated with weight gain in adolescent anorexia nervosa. The International journal of eating disorders. 2017 Apr;50(4):447-50. doi: <u>https://dx.doi.org/10.1002/eat.22704</u>. PMID: 28334444

Gregertsen EC, Mandy W, Kanakam N, et al. Pre-treatment patient characteristics as predictors of drop-out and treatment outcome in individual and family therapy for adolescents and adults with anorexia nervosa: A systematic review and meta-analysis. Psychiatry research. 2019 Jan;271:484-501. doi: <u>https://dx.doi.org/10.1016/j.psychres.2018.11.068</u>. PMID: 30551081
 Linardon J, de la Piedad Garcia X, Brennan L. Predictors, Moderators, and Mediators of Treatment Outcome Following Manualised Cognitive-Behavioural Therapy for Eating Disorders: A Systematic Review. European eating disorders review : the journal of the Eating Disorders Association. 2017 Jan;25(1):3-12. doi: <u>https://dx.doi.org/10.1002/erv.2492</u>. PMID: 27862611
 de Vos JA, LaMarre A, Radstaak M, et al. Identifying fundamental criteria for eating disorders. 2017;5:34. doi: <u>https://dx.doi.org/10.1186/s40337-017-0164-0</u>. PMID: 29118983
 Hamadi L, Holliday, J. Moderators and Mediators of Treatment Effects in Adolescent Eating Disorders: A Systematic Review of Randomised Control Trials. PROSPERO, National Institute

for Health Research; PROSPERO 2018

CRD42018112516.

https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42018112516.

34. Lydecker JA, Gueorguieva R, Masheb R, et al. Examining race as a predictor and moderator of treatment outcomes for binge-eating disorder: Analysis of aggregated randomized controlled trials. Journal of consulting and clinical psychology. 2019 Jun;87(6):530-40. doi: https://dx.doi.org/10.1037/ccp0000404. PMID: 31008634

35. Davis C, Levitan RD, Kaplan AS, et al. Sex differences in subjective and objective responses to a stimulant medication (methylphenidate): Comparisons between overweight/obese adults with and without binge-eating disorder. The International journal of eating disorders. 2016 May;49(5):473-81. doi: <u>https://dx.doi.org/10.1002/eat.22493</u>. PMID: 26691428

36. Steiger H, Sansfacon J, Thaler L, et al. Autonomy support and autonomous motivation in the outpatient treatment of adults with an eating disorder. The International journal of eating disorders. 2017 Sep;50(9):1058-66. doi: <u>https://dx.doi.org/10.1002/eat.22734</u>. PMID: 28842966
37. Tecuta L, Tomba E. Subjective incompetence as a predictor of treatment outcomes in eating disorder outpatients. Psychiatry research. 2018 Aug;266:193-8. doi:

https://dx.doi.org/10.1016/j.psychres.2018.05.052. PMID: 29870956

38. Kuipers GS, Hollander SD, van der Ark LA, et al. Recovery from eating disorder 1 year after start of treatment is related to better mentalization and strong reduction of sensitivity to others. Eating and weight disorders : EWD. 2017 Sep;22(3):535-47. doi:

https://dx.doi.org/10.1007/s40519-017-0405-x. PMID: 28643289

39. Hay PJ, Touyz S, Claudino AM, et al. Inpatient versus outpatient care, partial hospitalisation and waiting list for people with eating disorders. The Cochrane database of systematic reviews. 2019 Jan 21;1:Cd010827. doi: <u>https://dx.doi.org/10.1002/14651858.CD010827.pub2</u>. PMID: 30663033

40. Hilbert A, Hoek HW, Schmidt R. Evidence-based clinical guidelines for eating disorders: international comparison. Current opinion in psychiatry. 2017 Nov;30(6):423-37. doi: https://dx.doi.org/10.1097/yco.00000000000360. PMID: 28777107

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Appendix A: Methods

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

Desirability of New Review/Absence of Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years 8/15/2016-8/15/2019 on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
 - <u>AHRQ Evidence Reports https://www.ahrq.gov/research/findings/evidence-based-reports/index.html</u>
 - o EHC Program https://effectivehealthcare.ahrq.gov/
 - <u>US Preventive Services Task Force</u> <u>https://www.uspreventiveservicestaskforce.org/</u>
 AHRQ Technology Assessment Program
 - AHRQ Technology Assessment Program https://www.ahrq.gov/research/findings/ta/index.html
- US Department of Veterans Affairs Products publications
 - o Evidence Synthesis Program <u>https://www.hsrd.research.va.gov/publications/esp/</u>
 - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program https://www.healthquality.va.gov/
- Cochrane Systematic Reviews https://www.cochranelibrary.com/
- PROSPERO Database (international prospective register of systematic reviews and protocols) <u>http://www.crd.york.ac.uk/prospero/</u>
- PubMed <u>https://www.ncbi.nlm.nih.gov/pubmed/</u>

Impact of a New Evidence Review

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

Feasibility of New Evidence Review

We conducted a limited literature search in PubMed for the last five years August 21 2014-August 21 2019. We reviewed all studies identified titles and abstracts for inclusion for Questions 1, 2 and 6. Due to the large number of titles and abstracts for Questions 3 and 4, and 5, we evaluated a random sample of 200 for inclusion.

Feasibility Question 1		
MEDLINE(PubMed) searched on August 21, 2019		
Concept		
Treatment for Eating Disorders	"Feeding and Eating	
	Disorders/therapy"[Majr]	

Search strategy

NOT	
Patient or Program Characteristics	((((((((("etiology" [Subheading]) OR "Risk
OR	Factors"[Mesh]) OR "Comorbidity"[Mesh])
Patient Harms	OR "Gender Identity"[Mesh]) OR "Age
OR	Groups"[Mesh]) OR "Population
Care Delivery Model	Characteristics"[Mesh]) OR "Population
	Groups"[Mesh]) OR "Sey"[Mesh]) OR
Insurance Status	$((((race[Tit]e/\Delta bstract] OR)$
Insurance Status	ethnicity[Title/Abstract] OR
	cultural[Title/Abstract])) OR
	(gender[Title/Abstract])) OK
	(gender[Title/Abstract] OK mala[Title/Abstract] OR
	famala[Title/Abstract] OR
	$\begin{bmatrix} 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 $
	Sex[Title/Adstract])) OK (age[Title/Adstract]
	OR adult[Ittle/Abstract] OR
	adolescent[Iftle/Abstract]))
	(((("Health Personnel [Mesh]) OR
	"Psychotherapy"[Mesh]) OR "Behavioral
	Medicine"[Mesh]) OR "Behavior
	Therapy"[Mesh]) OR "Telemedicine"[Mesh]
	OR
	(((("Patient Harm"[Mesh]) OR ("adverse
	effects" [Subheading] OR "Long Term
	Adverse Effects"[Mesh])) OR "Drug-Related
	Side Effects and Adverse Reactions"[Mesh])
	OR ("injuries" [Subheading] OR "Wounds
	and Injuries"[Mesh])) OR "drug effects"
	[Subheading]
	OR
	(("Delivery of Health Care"[Mesh]) OR
	"Inpatients"[Mesh]) OR (
	"Outpatients" [Mesh] OR "Outpatient Clinics,
	Hospital"[Mesh] OR "Ambulatory
	Care"[Mesh] OR "Ambulatory Care
	Facilities"[Mesh])
	OR
Limits:	Filters activated: published in the last 5 years,
	Humans, English.
SR N=15	systematic[sb]
RCT N=14	(((((((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])
Observational N=1	((((("Cohort Studies"[Mesh]) OR "Controlled
	Clinical Trial"[Publication Type]) OR "Case-
	Control Studies"[Mesh])) OR (("Evaluation
	Studies"[Publication Type]) OR
	"Comparative Study"[Publication Type])) OR

	(("Comparative Study"[Publication Type]) OR "Follow-Up Studies"[Mesh])
Other N=50	

Feasibility Question 2		
MEDLINE(PubMed) searched on August 21, 2	2019	
Concept		
Eating Disorders	(("Feeding and Eating Disorders"[Mesh])) OR (((((anorexia nervosa[Title/Abstract]) OR bulimia nervosa[Title/Abstract]) OR binge eating disorder[Title/Abstract]) OR avoidant food intake disorder[Title/Abstract]) OR restrictive food intake disorder[Title/Abstract])	
AND		
Patient Harms	(((("Patient Harm"[Mesh]) OR ("adverse effects" [Subheading] OR "Long Term Adverse Effects"[Mesh])) OR "Drug-Related Side Effects and Adverse Reactions"[Mesh]) OR ("injuries" [Subheading] OR "Wounds and Injuries"[Mesh])) OR "drug effects" [Subheading]	
Limits:	Filters activated: published in the last 5 years, Humans, English.	
SR N=9	systematic[sb]	
RCT N=140	((((((((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])	
Observational N=40	((((("Cohort Studies"[Mesh]) OR "Controlled Clinical Trial"[Publication Type]) OR "Case- Control Studies"[Mesh])) OR (("Evaluation Studies"[Publication Type]) OR "Comparative Study"[Publication Type])) OR (("Comparative Study"[Publication Type]) OR "Follow-Up Studies"[Mesh])	
Other N=151		

Feasibility Questions 3		
MEDLINE(PubMed) searched on August 21, 2019		
Concept		
Treatment for Eating Disorders	"Feeding and Eating	
	Disorders/therapy"[Majr]	
AND		
Patient or Program Characteristics	((((((("etiology" [Subheading]) OR "Risk Factors"[Mesh]) OR "Comorbidity"[Mesh])	

	OR "Gender Identity"[Mesh]) OR "Age
	Groups"[Mesh]) OR "Population
	Characteristics"[Mesh]) OR "Population
	Groups"[Mesh])) OR "Sex"[Mesh])) OR
	((((race[Title/Abstract] OR
	ethnicity[Title/Abstract] OR
	cultural[Title/Abstract])) OR
	(gender[Title/Abstract] OR
	male[Title/Abstract] OR
	female[Title/Abstract] OR
	<pre>sex[Title/Abstract])) OR (age[Title/Abstract]</pre>
	OR adult[Title/Abstract] OR
	adolescent[Title/Abstract]))
	OR
	(((("Health Personnel"[Mesh]) OR
	"Psychotherapy"[Mesh]) OR "Behavioral
	Medicine"[Mesh]) OR "Behavior
	Therapy"[Mesh]) OR "Telemedicine"[Mesh]
Limits:	Filters activated: published in the last 5 years,
	Humans, English.
SR N=49	systematic[sb]
RCT N=465	(((((((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])
Observational N=109	((((("Cohort Studies"[Mesh]) OR "Controlled
	Clinical Trial"[Publication Type]) OR "Case-
	Control Studies"[Mesh])) OR (("Evaluation
	Studies"[Publication Type]) OR
	"Comparative Study"[Publication Type])) OR
	(("Comparative Study"[Publication Type])
	OR "Follow-Up Studies"[Mesh])
Other N=518	

Feasibility Question 4		
MEDLINE(PubMed) searched on August 21, 2019		
Concept		
Eating Disorders	(("Feeding and Eating Disorders"[Mesh])) OR (((((anorexia nervosa[Title/Abstract]) OR bulimia nervosa[Title/Abstract]) OR binge eating disorder[Title/Abstract]) OR avoidant food intake disorder[Title/Abstract]) OR restrictive food intake disorder[Title/Abstract])	
AND		
Care Delivery Model	(("Delivery of Health Care"[Mesh]) OR "Inpatients"[Mesh]) OR (

	"Outpatients" [Mesh] OR "Outpatient Clinics,
	Hospital"[Mesh] OR "Ambulatory
	Care"[Mesh] OR "Ambulatory Care
	Facilities"[Mesh])
Limits:	Filters activated: published in the last 5 years,
	Humans, English.
SR N=14	systematic[sb]
RCT N=170	(((((((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])
Observational N=78	((((("Cohort Studies"[Mesh]) OR "Controlled
	Clinical Trial"[Publication Type]) OR "Case-
	Control Studies"[Mesh])) OR (("Evaluation
	Studies"[Publication Type]) OR
	"Comparative Study"[Publication Type])) OR
	(("Comparative Study"[Publication Type])
	OR "Follow-Up Studies"[Mesh])
Other N=316	

Feasibility Question 5	
MEDLINE(PubMed) searched on August 21, 2019	
Concept	
Eating Disorders	(("Feeding and Eating Disorders"[Mesh])) OR (((((anorexia nervosa[Title/Abstract]) OR bulimia nervosa[Title/Abstract]) OR binge eating disorder[Title/Abstract]) OR avoidant food intake disorder[Title/Abstract]) OR restrictive food intake disorder[Title/Abstract])
AND	
Insurance Status	("Insurance Coverage"[Mesh]) OR ((insured[Title/Abstract] OR insurance[Title/Abstract] OR uninsured[Title/Abstract]))
Limits:	Filters activated: published in the last 5 years, English.
SR N=0	systematic[sb]
RCT N=4	(((((((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 N=14	

Appendix B. Selection Criteria Assessment

Selection Criteria	Assessment
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
1b. Is the nomination a request for an evidence report?	Yes
1c. Is the focus on effectiveness or comparative effectiveness?	Yes
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
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	Eating disorder deaths have been cited as second only to opioid-related deaths in mental health disorder-related deaths ⁷ , with a mortality rate of approximately 10% in anorexia nervosa ⁸ . The incidence of eating disorders, as measured from 2001 to 2004, was 2.7% in adolescents and 1.2% in adults ⁶ .
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. Eating disorder deaths have been cited as second only to opioid-related deaths in mental health disorder-related deaths ⁷ , with a mortality rate of approximately 10% in anorexia nervosa ⁸ . The incidence of eating disorders, as measured from 2001 to 2004, was 2.7% in adolescents and 1.2% in adults ⁶ .
2c. Incorporates issues around both clinical benefits and potential clinical harms	Yes
2d. 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. Treatment options for eating disorders are increasingly for-profit treatment centers ¹ which are costly ⁹ and many insurance carriers do not cover eating disorder treatment ¹⁰ .
3. Desirability of a New Evidence Review/Absence of Duplication	
3. A recent high-quality systematic review or other evidence review is not available on this topic	 Yes. We found systematic reviews that addressed portions of Question 1 (treatment outcome), Question 2 (treatment harms), Question 3 (factors associated with effectiveness), and treatment setting (Question 4). No reviews addressed Question 5 (insurance status). Most reviews addressed anorexia nervosa and binge-eating disorder. The SRs did not fully address any of the questions. The components of the questions that were and were not addressed are described below. Anorexia nervosa: We identified 3 SRs on treatment efficacy and harms (Questions 1 and 2). We did not consider these

	 address the range of relevant interventions, particularly nonpharmacologic interventions; and they did not look at subgroups of interest: One SR on body-image directed interventions in all age groups¹¹. One SR on efficacy and harms of family therapy in all age groups¹². One in-process SR on efficacy and harms of psychotropics in adolescents¹³
	 We identified one SR for Question 3. It did not fully answer the question because it did not address all subcategories (e.g., adolescents, severe and enduring): One SR on non-demographic patient characteristics associated with treatment outcomes in adults³⁰. For Question 4, we identified one systematic review that evaluated relative effectiveness of treatment setting on clinical outcomes in anorexia and bulimia with no age restriction³⁹, but did not fully address the question for anorexia because it did not analyze treatment separately for adolescents and adults. For Question 5, we did not identify any systematic reviews.
•	 Bulimia nervosa: We identified one systematic review for the efficacy of treatment and no reviews on harms (Questions 1-2). While this review covered the scope of potential treatments, it did not present results on the subgroups of interest: One systematic review that included efficacy of a variety of treatments and all ages¹⁴, which addressed the portion of the question for bulimia nervosa. We did not identify any systematic reviews for the remainder of the questions on bulimia Get an of the remainder of the questions on bulimia One systematic review that include the portion of the question for bulimia One systematic review that include the portion of the question for bulimia One systematic point for bulimia One point of the remainder of the questions on bulimia One point of the point of the point of the questions on bulimia One point of the remainder of the questions on bulimia One point of the point of the questions on bulimia One point of the remainder of the questions on bulimia One point of the point of the questions on bulimia One point of the questions on bulimia One point of the questions on bulimia One point of the questions on bulimia
•	Binge eating:

	0	We identified three systematic
		reviews that each addressed the
		efficacy and harms of treatments
		(Questions 1 and 2). These were not
		duplicative because they did not
		address the subgroups of interest
		Two systematic reviews in an
		ages psychological and
		pharmacological treatments ^{15,}
		16
		and pharmaceutical
		interventions in adults ¹⁷ .
	0	We did not identify any systematic
	-	reviews for demographic factors
		(Question 2) acconisted with
		(Question 3) associated with
		treatment outcomes
	0	We did not identify reviews for the
		remainder of the questions on binge-
		eating disorder
	A ! . I .	nt/monthing for a listal so all a sub-
•	Avoida	nt/restrictive food intake disorder:
	0	We did not identify any systematic
		reviews that evaluated only patients
		with avoidant/restrictive food intake
		disorder
_	Multipl	a acting dia ardara
•	wuitipi	e eating disorders.
	0	We identified eight systematic
		reviews of treatment efficacy
		(Questions 1 and 2). One of these
		also evaluated harms. These SRs did
		not fully address the guestion
		not fully address the question
		because they each addressed
		different specific interventions and did
		not address the subcategories of age
		and severity type.
		and sevency type.
		reviews for third wave
		psychological intervention (in
		adults) ¹⁸ , structured computer
		and book-based self-help (in
		any age) ²² guided self-belo
		(in any age) ²⁰ m lealth (in
		(in any age) ² °, in⊓eaith (in
		any age) ²¹ , and one that
		evaluated both efficacy and
		harms of complementary and
		alternative medicine (in any
		aye)
		 I wo protocols for an in-
		process systematic review on
		psychological interventions in
		outpatient settings ²³ and text-
		based interventions ²⁴
		Daseu IIItel Velillulis".
		 One protocol for an in-
		process systematic review of
		treatments for severe and
		enduring eating disorder

	 types in adults²⁵ answered the question for the subgroup of severe and enduring in adults, but not in adolescents. We identified three systematic reviews on the impact of patient factors on outcomes. However, the question was not fully covered because we did not identify any evidence for targeted demographic factors (i.e., sex, gender, age, race, ethnicity, or cultural group) associated with treatment outcomes and because the existing systematic reviews were limited to specific treatments (e.g., cognitive behavioral therapy), and did not address all eating disorder types, or age groups. One systematic review of studies that included any mediator, moderator, or predictor of treatment outcome following cognitive-behavioral therapy in patients with any eating disorder³¹, and one on factors associated with recovery in patients with any eating disorder³³. One protocol for an in-process systematic review of moderators and mediators of treatment effects in adolescents with bulimia or anorexia³³. We identified one systematic review of moderators and mediators of treatment settings on clinical outcomes in patients with anorexia nervosa or bulimia nervosa: inpatient, patial hospitalization, or outpatient) (Question 4)³⁹, but this did not fully address the question because the intervention for bulimia was inpatient and the nominators were not
	 address the question because the intervention for bulimia was inpatient and the nominators were not interested in inpatient treatment for bulimia since it is not the standard treatment in the U.S. We did not identify any studies for Question 5.
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)? 4b. Is there practice variation (guideline inconsistent with current practice, indicating a 	Yes. Evidence-based practices in intensive inpatient treatment centers have not been adequately investigated, resulting in inconsistency in practices ^{2, 3} . Further, a 2017 study identified nine treatment guidelines for eating disorders that had both similarities and differences ⁴⁰ , indicating inconsistencies in guidelines. Yes. Evidence-based practices in intensive inpatient treatment centers have not been adequately
potential implementation gap and not best addressed by a new evidence review)?	Further, a 2017 study identified nine treatment guidelines for eating disorders that had both similarities and differences ⁴⁰ , indicating inconsistencies in guidelines.
5. Primary Research	
 5. Effectively utilizes existing research and knowledge by considering: Adequacy (type and volume) of research for conducting a systematic review Newly available evidence (particularly for updates or new technologies) 	We identified nine primary studies. These nine studies identified for Questions 1-3 did not cover the full range of eating disorders, age groups, and severity types specified in the questions. For Questions 4 and 5, we did not identify any studies. Overall, the studies did not cover the full scope of any of the questions.
	Findings:
	Anorexia nervosa:
	 One study in adults with anorexia that compared efficacy of two psychological treatments²⁶.
	 Two primary studies in adolescents with anorexia that evaluated the efficacy of a partial dopamine D2 receptor agonist²⁹ and the efficacy and harms of treatment with intranasal oxytocin²⁷, respectively. One primary study in women of all ages on the efficacy of a ghrelin agonist²⁸
	Bulimia nervosa: none
	Binge eating:
	 Two primary studies that evaluated sex differences in treatment effectiveness methylphenidate³⁵, and race as a moderator of treatment effectiveness³⁴, respectively.
	Avoidant/restrictive food intake disorder: none
	Multiple eating disorders:
	• Three observational studies on motivational status in patients with any eating disorder enrolled in an outpatient treatment center ³⁶ , feelings of incompetence in patients with anorexia nervosa, bulimia nervosa, binge-eating disorder, or other specified feeding or eating disorder treated at a private outpatient aligned.
	clinic ²⁷ , and pre-treatment attachment and

	mentalization in patients with anorexia
	nervosa or bulimia nervosa ³⁸ , respectively
Abbreviations ALIDO Aconsultar Legitheore Deserve and Quality	

Abbreviations: AHRQ=Agency for Healthcare Research and Quality;