Treatment of ADHD in Children
PICO & Key Questions for Updated Literature Search

**Populations**

Children 6 years of age or older diagnosed with ADHD, or

Children under 6 years of age deemed at-risk for ADHD

**Interventions**

Parent behavior training, teacher consultation, pharmacotherapy (methylphenidate, amphetamine salts, non-stimulant medications, atypical antipsychotics) other pharmacologic treatments, psychosocial and behavioral interventions

**Comparators**

Usual care, no intervention

**Outcomes**

*Critical*: Academic achievement

*Important*: Measures of impulsiveness, and global functioning, grade retention, academic achievement, Growth restriction

*Outcomes considered but not selected for GRADE table*: Measures of inattention, overactivity, non-specific harms

**Key Questions**

KQ1: What is the effectiveness of pharmacologic, behavioral, and psychosocial interventions for children with ADHD?

KQ2: Is there comparative effectiveness evidence for interventions for children with ADHD?

KQ3: What is the effectiveness of interventions for children under 6 years of age deemed at-risk for ADHD?

KQ4: What is the evidence of harms associated with the interventions for ADHD in children?
Coronary Artery Calcium Scoring
PICO & Key Questions for Updated Literature Search

**Populations**
Asymptomatic adults with coronary heart disease (CHD) risk, adults with acute chest pain with normal EKG and negative cardiac enzymes, adults with chronic stable chest pain

**Intervention**
Coronary artery calcium scoring (CACS)

**Comparators**
No further risk stratification, other forms of risk stratification (including serial monitoring (EKG, troponins), exercise EKG, stress echocardiography, stress myocardial perfusion scanning, coronary angiography

**Outcomes**

*Critical*: All-cause mortality, major adverse cardiovascular events

*Important*: Need for revascularization procedure; incidental findings, contrast induced nephropathy

*Outcomes considered but not selected for GRADE table*: Length of stay

**Key Questions**

KQ1: What is the comparative effectiveness of CACS in improving outcomes for asymptomatic patients with CHD risk or patients with chest pain (either acute chest pain with normal EKG and negative cardiac enzymes or chronic stable chest pain)?

KQ2: What is the cost-effectiveness of CACS?

KQ3: What are the harms of CACS?
Carotid Endarterectomy
PICO & Key Questions for Updated Literature Search

**Populations**
Adults with carotid stenosis with or without recent symptoms of cerebral ischemia

**Intervention**
Carotid endarterectomy

**Comparators**
Optimal medical therapy, carotid stenting

**Outcomes**

*Critical:* All-cause mortality, cerebrovascular accidents

*Important:* Transient ischemic attacks, development/progression of vascular dementia, quality of life

*Outcomes considered but not selected for GRADE table:* Need for reintervention *(to be discussed by HERC)*

**Key Questions**

KQ1: What is the comparative effectiveness of carotid endarterectomy for treatment of symptomatic or asymptomatic carotid stenosis?

a. What degree of carotid stenosis predicts clinical utility of carotid endarterectomy?

KQ2: What are the harms of carotid endarterectomy?

KQ3 Under what circumstances should carotid endarterectomy be covered for asymptomatic patients (i.e. when stenosis is found as an incidental finding?)
Coronary CT Angiography

PICO & Key Questions for Updated Literature Search

**Population**

Adults with acute chest pain or chronic stable chest pain

**Intervention**

Coronary CT angiography (CTA)

**Comparators**

Usual care (including no additional testing, exercise EKG, stress echocardiography, stress myocardial perfusion scanning, coronary angiography; serial monitoring with EKG/troponin)

**Outcomes**

*Critical*: All-cause mortality, myocardial infarction, stroke,

*Important*: Diagnostic accuracy, costs/cost-effectiveness,

*Outcomes considered but not selected for GRADE table*: avoidance of invasive testing; radiation exposure; need for revascularization procedure

**Key Questions**

KQ1: What is the comparative effectiveness of coronary CTA for improving outcomes among adults with chest pain?

KQ2: What are the harms of coronary CTA (including incidental findings)?

KQ3: What are the comparative costs and/or cost-effectiveness of coronary CTA?
Staff recommends retiring this coverage guidance and deferring to the United States Preventive Services Task Force (USPSTF). The USPSTF defines use of preventive services for the Essential Health Benefits which provide minimum coverage standards on preventive services for most health plans in the United States. Current coverage guidance aligns with USPSTF recommendations.
Continuous Blood Glucose Monitoring
PICO & Key Questions for Updated Literature Search

**Populations**

Children, adolescents, and adults with type 1 or type 2 diabetes mellitus (DM) on insulin therapy, including pregnant women

**Intervention**

Continuous blood glucose monitoring (CBGM), either retrospective or real time

**Comparators**

Self-monitoring blood glucose (SMBG) and/or routine HbA1c monitoring

**Outcomes**

*Critical:* All-cause mortality, severe morbidity (e.g. microvascular and macrovascular complications)

*Important:* Quality-of-life, change in HbA1c, ketoacidosis, severe hypoglycemia¹

*Outcomes considered but not selected or GRADE table:* Myocardial infarction, cerebrovascular accident, amputations, neuropathy, retinopathy, nephropathy. We chose to generalize these into severe morbidity to simplify consideration.

**Key Questions**

1. What is the evidence of effectiveness of CGM in improving outcomes in people with diabetes?
2. What are the indications for retrospective and for real time CGM?
3. Is there evidence of differential effectiveness of CGM based on:
   a. Type 1 vs Type 2 DM?
   b. Insulin pump vs multiple daily insulin injections (MDII)?
   c. Frequency and duration of CGM?

**Special Considerations**

- CBGM devices are reported to have highly variable rates of adherence; should we exclude studies that aren’t analyzed by intention-to-treat? Decided to indicate which studies are done on intention to treat.

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¹ “An event requiring assistance of another person to actively administer carbohydrate, glucagons, or other resuscitative actions.” (ADA Workgroup on Hypoglycemia, 2005)
Continuous Blood Glucose Monitoring

PICO & Key Questions for Updated Literature Search

- Include specific studies of people with “hypoglycemia unawareness”? This is already captured in the indications.
Diagnosis of Sleep Apnea in Adults
PICO & Key Questions for Updated Literature Search

**Populations**

Adults with clinical signs and symptoms of obstructive sleep apnea (OSA)

**Intervention**

Polysomnography; attended or unattended, sleep lab or at home

**Comparators**

Usual care

**Outcomes**

*Critical:* All-cause mortality, major adverse cardiovascular events

*Important:* Improvement in HTN, quality of life, measures of daytime fatigue

*Outcomes considered but not selected for GRADE table:* Resolution of metabolic syndrome

**Key Questions**

KQ1: What is the effectiveness of polysomnography in improving outcomes for patients with suspected OSA?

KQ2: What is the differential effectiveness of polysomnography based on the type of device used or the setting in which testing is performed?

KQ3: What are the harms of polysomnography?

**Contextual Questions**

CQ1: Are there clinically validated tools (i.e. questionnaires and/or physical parameters) to assess the pretest probability of OSA?

  a. If validated tools exist, at what levels of pretest probability should polysomnography not be recommended?

Coverage guidance monitoring, August 2015 (Guidance originally approved in 2013)
Induction of Labor

PICO & Key Questions for Updated Literature Search

**Populations**

Pregnant adolescents and women at term (≥37 weeks of gestation)

**Interventions**

Medically or obstetrically indicated induction of labor (IOL), elective IOL

**Comparator**

Expectant management

**Outcomes**

*Critical:* Perinatal mortality

*Important:* Mode of birth, maternal length of stay, neonatal length of stay, need for higher-level neonatal care

*Outcomes considered but not selected for GRADE table:* iatrogenic prematurity, hemorrhage, epidural, patient satisfaction

**Key Questions**

KQ1: What are the outcomes of IOL versus expectant management for women with medical or obstetrical indications for induction of labor?

KQ2: What are the evidence-based medical or obstetrical indications for induction of labor?

KQ3: How do outcomes vary by cervical favorability, gestational age and parity?
Breast MRI after Diagnosis of Breast Cancer

PICO & Key Questions for Updated Literature Search

**Population**

Adults with recently diagnosed breast cancer

**Intervention**

Breast MRI

**Comparator**

Usual care, including other imaging modalities

**Outcomes**

*Critical*: All-cause mortality, cancer specific mortality

*Important*: Progression-free survival, false-positive test results, quality of life

*Outcomes considered but not selected for GRADE table*: change in surgical or non-surgical treatment plan

**Key Questions**

KQ1: What is the comparative effectiveness of breast MRI after the diagnosis of breast cancer for improving patient outcomes?

KQ2: What are the harms of breast MRI after the diagnosis of breast cancer?

**Contextual Questions**

CQ1: How often do the results of MRI after breast cancer diagnosis lead to changes in the surgical or non-surgical treatment plan?

CQ2: Does the information provided by MRI after breast cancer diagnosis change measurements of decisional conflict?

Coverage guidance monitoring, August 2015 (Guidance originally approved in 2013)
Neuroimaging for Headache

PICO & Key Questions for Updated Literature Search

**Populations**
Adults and children with non-traumatic, acute or chronic headache

**Interventions**
MRI or CT head/brain, with or without contrast enhancement

**Comparators**
Usual care, no neuroimaging

**Outcomes**

*Critical:* All-cause mortality, morbidity from significant intracranial abnormalities

*Important:* Headache-free days, quality of life, change in treatment plan

Outcomes considered but not selected for GRADE table:

**Key Questions**

KQ1: What is the comparative effectiveness of neuroimaging for headache in improving patient outcomes or detecting significant intracranial abnormalities?

KQ2: What are evidence-supported guideline-based red flag features which are indications for neuroimaging for headache?

KQ3: What are the harms (including incidental findings) of neuroimaging for headache?

Coverage guidance monitoring August, 2015 (Topics originally approved in 2013)
PET CT for Breast Cancer Staging and Surveillance

PICO & Key Questions for Updated Literature Search

**Populations**

Adults with early stage breast cancer (DCIS, stage I, or stage II) or who have been treated for breast cancer with curative intent

**Interventions**

PET CT for initial staging, surveillance, or monitoring response to treatment

**Comparators**

Usual care (including axillary lymph node dissection [with or without sentinel lymph node biopsy], CT and radionuclide scintigraphy), MRI

**Outcomes**

*Critical:* All-cause mortality, cancer-specific mortality

*Important:* Progression-free survival, change in treatment plan, Quality of life

Outcomes considered but not selected for GRADE table:

**Key Questions**

KQ1: What is the comparative effectiveness of PET CT in early stage breast cancer or breast cancer treated with curative intent in improving patient important outcomes?

KQ2: What are the harms (including false positive tests) of PET in early stage breast cancer or breast cancer treated with curative intent?
Recurrent Acute Otitis Media

PICO & Key Questions for Updated Literature Search

Population

Children with recurrent acute otitis media (AOM)

Interventions

Prophylactic or suppressive antibiotics, tympanostomy tubes (grommets), tonsillectomy and/or adenoidectomy (note that these interventions may be used alone, serially or in combination)

Comparators

Usual care, episodic treatment of AOM

Outcomes

Critical: Severe infection (e.g. systemic infection, sepsis, meningitis, locally invasive infection)

Important: Hearing loss, school performance/academic achievement, treatment-specific harms

Outcomes considered but not selected for GRADE table: Missed school days

Key Questions

KQ1: What is the comparative effectiveness of interventions for recurrent acute otitis media?

KQ2: What are the harms of interventions for recurrent acute otitis media?
Self-Monitoring of Blood Glucose
PICO & Key Questions for Updated Literature Search

**Populations**

Children, adolescents, and adults with type 2 diabetes mellitus who are not using multiple daily insulin injections (MDI).

**Intervention**

Self-monitoring of blood glucose (SMBG), with or without structured education and feedback programs.

**Comparators**

No routine monitoring using SMBG, periodic monitoring of HbA1c.

**Outcomes**

*Critical*: All-cause mortality, severe morbidity (e.g. microvascular and macrovascular complications, hyperosmolar hyperglycemic state (HHS))

*Important*: Quality-of-life, change in HbA1c, severe hypoglycemia

*Outcomes considered but not selected for GRADE table*: Ketoacidosis, as this is not relevant to the target population.

**Key Questions**

1. What is the effectiveness of SMBG in improving outcomes in children, adolescents, and adults with type 2 diabetes mellitus who are not using multiple daily insulin injections (MDI)?
2. What is the evidence of harms associated with SMBG in this population?
3. Is there evidence of differential effectiveness of SMBG based on:
   a. Type of treatment (i.e. diet and exercise, oral antidiabetic agents, basal insulin, non-insulin injectables)
   b. Frequency of testing
   c. Degree of glycemic control at baseline
   d. Association with a structured education and feedback program
4. What are appropriate quantities of testing supplies for this population, and what factors should trigger allowances for additional supplies (e.g. infection, driving, etc.)

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1 “An event requiring assistance of another person to actively administer carbohydrate, glucagons, or other resuscitative actions.” (ADA Workgroup on Hypoglycemia, 2005)
Self-Monitoring of Blood Glucose
PICO & Key Questions for Updated Literature Search

Special considerations

1. We will not search the literature on people with Type I diabetes or Type II diabetes with multiple daily insulin injections, as these are well-established and had a strong recommendation in the last coverage guidance.
Vertebroplasty, Kyphoplasty, and Sacroplasty
PICO & Key Questions for Updated Literature Search

**Populations**

Adults with acute or chronic vertebral compression or sacral insufficiency fractures

**Interventions**

Percutaneous vertebral and sacral procedures

**Comparators**

Open spinal surgical procedures, sham/placebo surgery, medical therapy (including non-pharmacologic interventions like physical therapy or acupuncture)

**Outcomes**

*Critical*: All-cause mortality, short- and long-term improvement in function

*Important*: Short- and long-term improvements in pain or quality of life, recurrent fracture, clinically significant embolization

*Outcomes considered but not selected for GRADE table:*

**Key Questions**

KQ1: What is the comparative effectiveness of percutaneous interventions for vertebral compression or sacral insufficiency fractures?

KQ2: What are the harms of percutaneous interventions for vertebral compression or sacral insufficiency fractures?