turning knowledge into practice

Tailoring Systematic Reviews to Meet Critical Priorities in Maternal Health

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Current Practice for Selecting Topics for Systematic Reviews

- AHRQ topics often generated by professional societies; Cochrane reviews by individual reviewers
- Topic nominations can be motivated by
  - Search for evidence to review ongoing changes in clinical practice
  - Publication of unexpected trial or observational data
- Incremental approach
- Requires clear specification of Patient, Intervention, Comparators, Outcomes, Timing, and Setting (PICOTS)

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Rethinking Systematic Review Resources on Maternal Health: why should we care?

- Systematic reviews can have substantial impact on practice
  - physician guidelines
  - quality of care initiatives
- Time- and resource-intensive efforts
- AHRQ reviews are funded by public dollars

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Reframing Maternal Health Priorities for Systematic Reviews

- Morbidity and mortality
- Cross-cutting issues
- Cost
- Other?

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Maternal Mortality Issues

- Pregnancy-related mortality ratio in the U.S. not declined since 1982
- Pregnancy-related mortality ratio in the U.S.: 11.5
  - Range for industrialized countries 8 – 13
- Pregnancy-related mortality likely underestimated when derived from death certificate data
- Racial and ethnic disparities persist
  - Black women have a 4-fold higher risk

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Prevalence of maternal morbidity during childbirth (1993-1997)

- Third- and fourth-degree lacerations: 5.0%
- Other obstetric traumas including cervical lacerations and pelvic trauma: 3.8%
- Preeclampsia and eclampsia: 3.0%
- Gestational diabetes: 2.8%
- Genitourinary infections: 2.7%
- Postpartum hemorrhages: 2.0%
- Amnionitis: 2.0%
- Cesarean delivery: 21.8%

Danel, I.; Berg, C.; Johnson, C. H., and Atrash, H. Magnitude of maternal morbidity during labor and delivery: United States, 1993-1997. Am J Public Health. 2003 Apr; 93(4), p. 632.

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Prevention of Adverse Events versus Reduction of Harms

- Events on morbidity-to-mortality continuum could be due to
  - Pre-existing conditions
  - Childbirth
  - Harms associated with childbirth-related interventions
- Potentially preventable adverse events **associated with childbirth** include
  - fetal malpresentation, perineal trauma, infection associated with premature rupture of membranes, etc.
- Harms associated with **childbirth-related interventions** include
  - hyperstimulation from labor induction, hypotension from anesthesia, anal sphincter injury from episiotomy, etc.

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Systematic Review Priorities in the Intrapartum Period

- Review strategies to reduce morbidity and mortality
- Focus on prevention of childbirth-related adverse events as well as reduction of harms from childbirth-related intervention
- Identify interventions to address persistent disparities in health outcomes

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Methods: inclusion criteria

- Medline search of MeSH term “Delivery, obstetric”
  - only items with abstracts
  - English
  - published in the last 5 years (Jan 2002 to Jan 2007)
  - meta-analysis or systematic review
  - female
  - humans
- 488 abstracts
- Inclusion criteria
  - Identifiable as systematic review
  - Relevant to interventions in the intrapartum period

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Methods: exclusions

- 108 potential includes
- 99 available as full-text articles
- 35 excluded on full-text review
  - No quality appraisal: 12
  - Duplicates: 4
  - Exclusions for content: 19
    - interventions without comparators, outcomes independent of interventions, not associated with interventions in the intrapartum period

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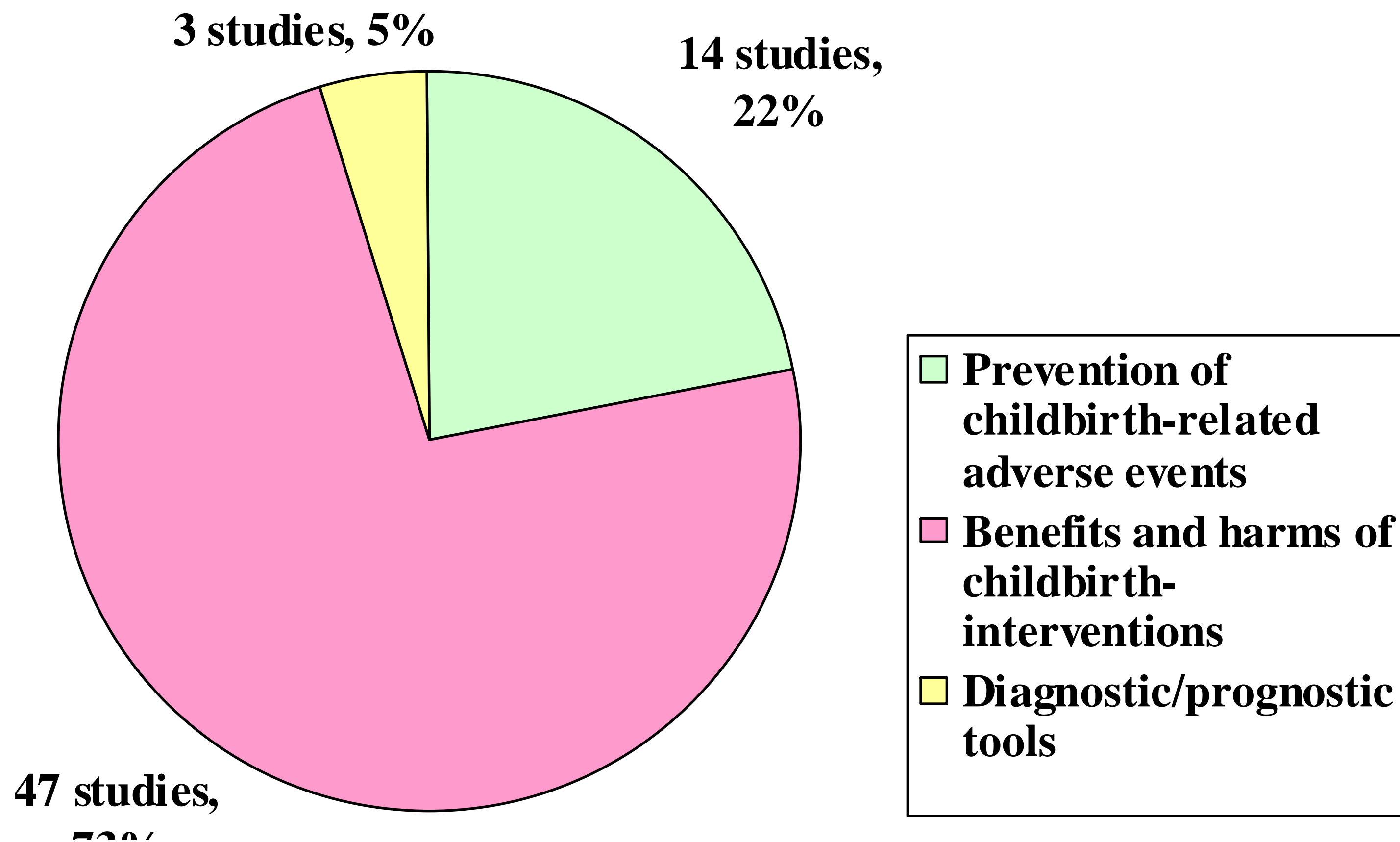
Systematic Review Content



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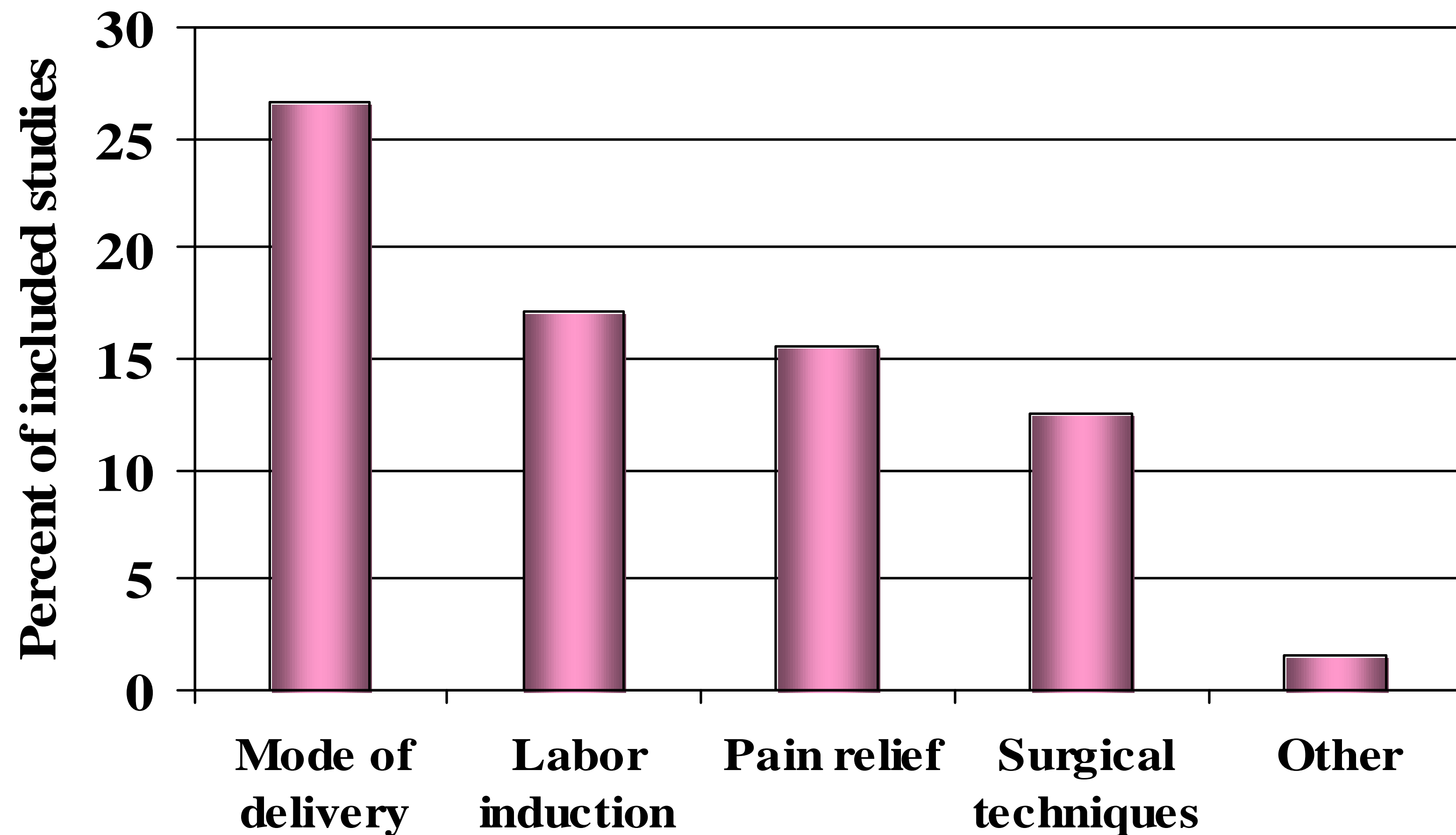
Systematic Reviews on Childbirth-related Interventions



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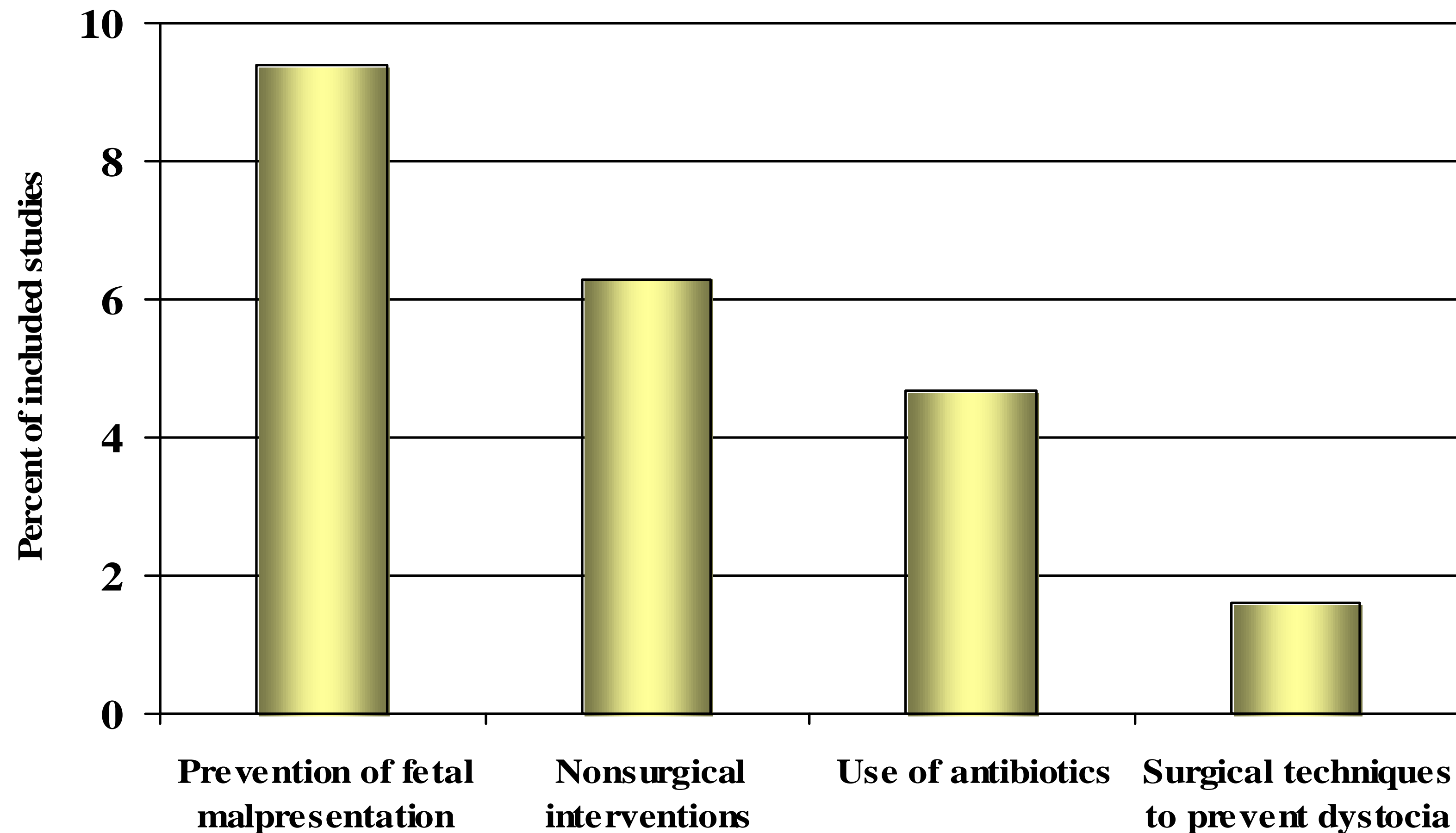
Systematic Reviews on Prevention of Adverse Events



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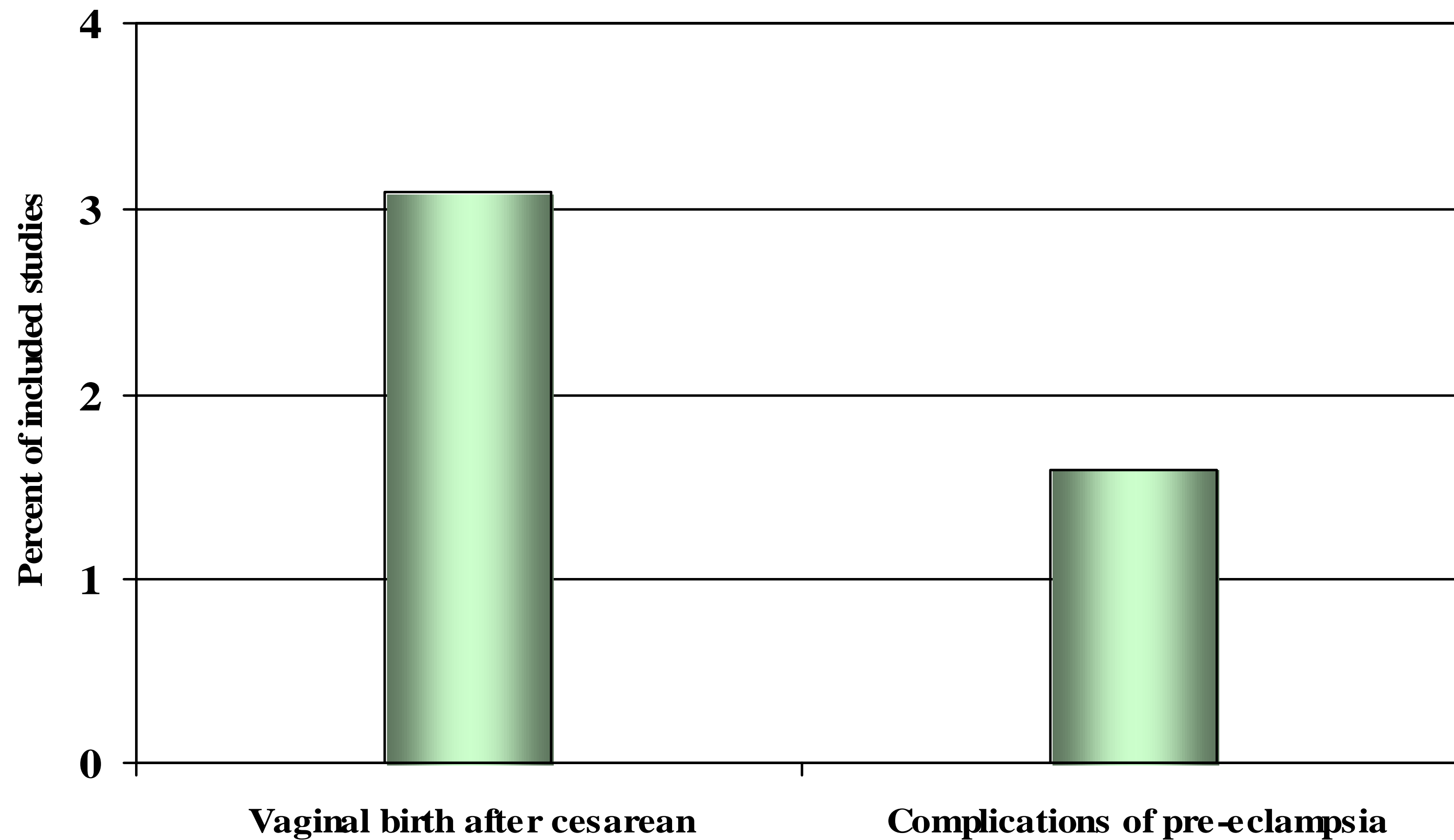
Systematic Reviews on Diagnosis/Prognosis



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Analysis of Disparities

- None address racial disparities in health outcomes
- Sub-analyses generally based on anticipated risk factors
  - maternal age
  - obesity

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Systematic Review Methods

- Adverse events and harms are rare and may not be reported in sufficient numbers in small trials
- Half the included reviews concluded that their included studies were underpowered to address adverse events
- 69 percent of systematic reviews chose to limit their inclusion criteria to randomized trials

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Considerations for the Future

- Include large observational studies to address rare adverse events and harms
- Address issues of quality in observational studies
- Explicitly seek evidence on interventions addressing racial and ethnic disparities in maternal morbidity and mortality

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