**Supplementary Material:**

**MOOSE Checklist**

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| --- | --- | --- |
|  | Reported on page | Comments |
| **Reporting of background should include** | | |
| Problem definition | 4 |  |
| Hypothesis statement | 4 |  |
| Description of study outcomes | 4 |  |
| Type of exposure or intervention used | 4 |  |
| Type of study designs used | 5 |  |
| Study population | 5 |  |
| **Reporting of search strategy should include** | | |
| Qualifications of searchers (eg librarians and investigators) | 4 |  |
| Search strategy, including time period used in the synthesis and key words | 5, supplemental materials |  |
| Effort to include all available studies, including contact with authors | n/a | Authors not contacted |
| Databases and registries searched | 5 |  |
| Search software used, name and version, including special features used (eg explosion) | 5 |  |
| Use of hand searching (eg reference lists of obtained articles) | 5 |  |
| List of citations located and those excluded, including justification | 7 | List is attached to checklist and can be provided for publication upon request |
| Method of addressing articles published in languages other than English | n/a | Search was restricted to US-based studies |
| Method of handling abstracts and unpublished studies | 5 |  |
| Description of any contact with authors | n/a | No data was obtained from authors |
| **Reporting of methods should include** | | |
| Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested | 5 | Conducted during eligibility review |
| Rationale for the selection and coding of data (eg sound clinical principles or convenience) | 5, 6 | Based on CDC, ADA, and Society for Thoracic Surgery guidelines |
| Documentation of how data were classified and coded (eg multiple raters, blinding and interrater reliability) | 6 |  |
| Assessment of confounding (eg comparability of cases and controls in studies where appropriate) | 7 |  |
| Assessment of study quality, including blinding of quality assessors, stratification or regression on possible predictors of study results | 7 | Meta-regression of possible predictors of study results |
| Assessment of heterogeneity | 6, 7 |  |
| Description of statistical methods (eg complete description of fixed or random effects models, justification of whether the chosen models account for predictors of study results, dose-response models, or cumulative meta-analysis) in sufficient detail to be replicated | 6, 7 |  |
| Provision of appropriate tables and graphics | 23-29 |  |
| **Reporting of results should include** | | |
| Graphic summarizing individual study estimates and overall estimate | 27 |  |
| Table giving descriptive information for each study included | 23-26 |  |
| Results of sensitivity testing (eg subgroup analysis) | 8-10 |  |
| Indication of statistical uncertainty of findings | All results | 95% Predictive Interval reported throughout |
| **Reporting of discussion should include** | | |
| Quantitative assessment of bias (eg publication bias) | 8 | Reported in text but figure of funnel plot not shown to save space. This is available upon request |
| Justification for exclusion (eg exclusion of non-English language citations) | 11 |  |
| Assessment of quality of included studies | 11 |  |
| **Reporting of conclusions should include** | | |
| Consideration of alternative explanations for observed results | 12 |  |
| Generalization of the conclusions (eg appropriate for the data presented and within the domain of the literature review) | 12-13 |  |
| Guidelines for future research | 13 |  |
| Disclosure of funding source | 13 |  |

Transcribed from the original paper within the Support Unit for Research Evidence (SURE), Cardiff University, United Kingdom. February 2011.

**Search Strategy**

*Search 1*

Database: PubMed/Medline

Terms: (risk factors) AND surgical site infections; glucose AND surgical site infections

Restrictions: Published between December 1985 through May 2013

* 2,371 citations identified
* 123 potentially eligible based on abstract review

*Search 2*

Database: Pubmed/Medline

Terms: (risk factors) AND surgical site infections

Restrictions: Published between May 2013 and July 2015

* 757 citations identified
* 304 potentially eligible based on abstract review (Exclusions: 277 not relevant; 137 not US or English; 39 pediatric)

*Search 3*

Database: Embase

Terms: diabetes and surgical site infection, all dates

Restrictions: English language, adult/aged/middle aged/very elderly, Embase only

* 394 unique citations identified
* 73 potentially eligible based on abstract review (Exclusions: 80 not relevant; 241 not in US)

*Search 4*

Database: Pubmed/Medline

Terms: (glucose) and surgical site infections

Restrictions: Published between May 2013 and July 2015

* 43 unique citations identified
* 8 potentially eligible based on abstract review (Exclusions: 15 not relevant or not primary data; 20 not US or not English)

*Search 5*

Database: Embase

Terms: glucose and surgical site infection, all dates

Restrictions: English language, adult/aged/middle aged/very elderly, Embase only

* 66 unique citations identified
* 14 potentially relevant based on abstract review (Exclusions: 14 not relevant; 38 not US)

**Exclusions from Full Text Review:**

Did not address study question or not primary literature:

N=791-79

Studies that were not performed in the US:

N=12880-207

Studies with outcome not meeting CDC SSI definition criteria:

N=95208-302

Studies with insufficient data to analyse the association between diabetes and SSI:

N=99302-400

Studies with data that overlaps with included articles:

N=27401-427

**Full Citations of Excluded Articles:**

1. Abdallah DY, Jadaan MM, McCabe JP. Body mass index and risk of surgical site infection following spine surgery: a meta-analysis. *Eur Spine J* 2013;22:2800-9.

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3. Arnaoutakis DJ, Selvarajah S, Mathioudakis N, Black JH, 3rd, Freischlag JA, Abularrage CJ. Metabolic syndrome reduces the survival benefit of the obesity paradox after infrainguinal bypass. *Ann Vasc Surg* 2014;28:596-605.

4. Asomugha EU, McLain RF. Special note: preliminary findings--epidural steroid paste in posterior lumbar surgery: surgical site complications in a case-controlled cohort. *Spine (Phila Pa 1976)* 2014;39:E907-11.

5. Basques BA, Anandasivam NS, Webb ML, Samuel AM, Lukasiewicz AM, Bohl DD, et al. Risk Factors for Blood Transfusion with Primary Posterior Lumbar Fusion. *Spine (Phila Pa 1976)* 2015.

6. Basques BA, Golinvaux NS, Bohl DD, Yacob A, Toy JO, Varthi AG, et al. Use of an operating microscope during spine surgery is associated with minor increases in operating room times and no increased risk of infection. *Spine (Phila Pa 1976)* 2014;39:1910-6.

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13. Bish EK, El-Amine H, Steighner LA, Slonim AD. A socio-technical, probabilistic risk assessment model for surgical site infections in ambulatory surgery centers. *Infect Control Hosp Epidemiol* 2014;35 Suppl 3:S133-41.

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