Appendix - MEDLINE search strategy

1. Lung Diseases, Obstructive/
2. exp Pulmonary Disease, Chronic Obstructive/
3. (chronic$ adj3 bronchiti$).tw.
4. (obstruct$ adj3 (pulmonary or lung$ or airway$ or airflow$ or bronch$ or respirat$)).tw.
5. COPD.tw.
6. COAD.tw.
7. COBD.tw.
8. AECB.tw.
9. emphysema$.tw.
10. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9
11. exp Myocardial Infarction/
12. MI.tw.
13. acs.tw.
14. exp Acute Coronary Syndrome/
15. (myocardial adj3 infarction$).tw.
16. (heart adj3 attack$).tw.
17. (acute adj3 coronary adj3 syndrome$).tw.
18. (coronary adj3 infarc$).tw.
19. (myocardial adj3 thrombos$).tw.
21. 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20
22. 10 and 21
Appendix - Quality assessment detailed study (or analysis) level results.

Risk of MI associated with COPD

Comparability between the exposed and unexposed groups was a major problem, with none of the reports being completely classed as low risk of bias for this item. The main reason for studies being high risk of bias for this item was that they did not adjust for smoking status as this was not available in several of the administrative healthcare databases which were used in these studies. The case control analyses reported in Rodriguez 2010\(^\text{18}\) and Schneider 2010\(^\text{4}\), however, were assessed as lower risk of bias for comparability between groups. Another common problem was lack of representativeness of the exposure group. In 3/8 studies representativeness was assessed as higher risk of bias. Some of these studies only included those with a recent diagnosis of COPD and followed up for a short period after. Others only classified patients with COPD if they attended secondary care for their COPD and so are likely only to have included patients with more severe COPD.

Risk of MI associated with AECOPD

In general the two studies included under this research question were assessed as lower risk of bias for most items. Donaldson 2010\(^\text{8}\) was unclear risk of bias for selection and representativeness of exposed and un-exposed groups as the method used to identify AECOPD has not been validated. Halpin 2011\(^\text{19}\) was assessed as higher risk of bias for selection of unexposed time as this compared only to 30 days prior to the AECOPD, not the entire stable period. This study was also considered to be at higher risk of bias under the “other bias” item as it appeared to be very underpowered (in total only 14 MIs were included, 1 during the 30 day pre-exacerbation period, and 13 in the 30 day post-exacerbation period) resulting in a very wide confidence interval (IRR 95% CI 1.71-99.1).
Risk of death after MI associated with COPD

Comparability between groups was again a problem for several of the studies included under this research question. Only 4/10 full text studies were assessed as lower risk of bias for comparability between groups. Again, the major problem was that several of the studies did not adjust for smoking status. Some studies were assessed as unclear risk of bias under some of the items of the selection domain as the definition of COPD used was unclear.
### Research Question

#### Risk of MI in COPD
- Curkendall 2006
- Feary 2010
- Huiart 2005
- Mapel 2005
- Rodriguez 2010 cohort
- Rodriguez 2010 case control
- Schneider 2010 cohort
- Schneider 2010 case control
- Sidney 2005
- Sode 2011
- Yin 2014

#### MI and AECOPD
- Donaldson 2010
- Halpin 2011

#### Outcomes after MI
- Andell 2014
- Bursi 2010
- Dziewierz 2010
- Enriquez 2013
### Key

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<td>Ascertainment of exposure/cases</td>
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<td>Outcome of interest not present at start of study</td>
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- ✔ lower risk of bias
- ± unclear risk of bias
- x higher risk of bias