

SUPPLEMENTARY FILE 1

MEDLINE search:

1. lung diseases, obstructive/ or exp bronchitis/ or exp pulmonary disease, chronic obstructive/
2. (COPD or COAD or emphysema or chronic bronchitis).ab,kf,ti.
3. (chronic obstructive adj (pulmonary or lung or airway\$ or airflow) adj disease).ab,kf,ti.
4. 1 or 2 or 3
5. clinical deterioration/
6. (exacerbation\$ or hospital\$).ab,kf,ti.
7. 5 or 6
8. 4 and 7
9. (AECOPD or ECOPD or AECB).ab,kf,ti.
10. 8 or 9
11. database management systems/ or electronic data processing/ or exp health information management/ or databases as topic/ or databases, factual/ or health information systems/ or consumer health informatics/ or medical informatics/ or health information exchange/ or medical informatics applications/ or medical informatics computing/ or public health informatics/
12. medical records/ or health records, personal/ or patient generated health data/ or medical record linkage/ or medical records, problem-oriented/ or medical records systems, computerized/ or electronic health records/ or registries/
13. Clinical Coding/ or current procedural terminology/ or healthcare common procedure coding system/ or "international classification of diseases"/ or "logical observation identifiers names and codes"/ or rxnorm/ or "systematized nomenclature of medicine"/
14. (EHR\$1 or EMR\$1 or electronic health record\$1 or electronic medical record\$1).ab,kf,ti.
15. ((billing or claim\$ or admin\$ or utilization or patient or inpatient or in-patient or outpatient or out-patient or care or medical or clinical or health\$ or hospital\$ or electronic or digit\$ or computer\$) adj2 (data\$ or record\$1 or system\$1)).ab,kf,ti.
16. (billing code or discharge code or Read code or SNOMED CT or ICD*).ab,kf,ti.
17. 11 or 12 or 13 or 14 or 15 or 16
18. Validation Studies as Topic/ or Validation Studies/
19. "sensitivity and specificity"/ or "predictive value of tests"/ or roc curve/
20. (validation or validity or verification or verify or identification or identify).ab,kf,ti.
21. ((case or cases) adj2 (definition\$ or define\$ or evaluat\$)).ab,kf,ti.

22. (sensitivity or specificity or PPV or PNV or NPV or positive predictive value\$ or predictive positive value\$ or predictive negative value\$ or negative predictive value\$ or likelihood ratio or precision or accuracy or ROC or receiver operating characteristic\$ or kappa or "c-statistic" or (concordance adj statistic) or "c-index").ab,kf,ti.

23. 18 or 19 or 20 or 21 or 22

24. 10 and 17 and 23

Embase search:

1. exp chronic obstructive lung disease/
2. emphysema/
3. exp chronic bronchitis/
4. (COPD or COAD or emphysema or chronic bronchitis).ab,kw,ti.
5. (chronic obstructive adj (pulmonary or lung or airway\$ or airflow) adj disease).ab,kw,ti.
6. 1 or 2 or 3 or 4 or 5
7. exp disease exacerbation/
8. hospitalization/
9. (exacerbation\$ or hospital\$).ab,kw,ti.
10. 7 or 8 or 9
11. 6 and 10
12. (AECOPD or ECOPD or AECB).ab,kw,ti.
13. 11 or 12
14. data base/
15. medical informatics/ or medical information system/
16. exp medical record/ or electronic health record/ or electronic medical record/ or electronic medical record system/ or electronic patient record/ or register/
17. Current Procedural Terminology/ or coding/
18. exp "international classification of diseases"/ or "Systematized Nomenclature of Medicine"/ or "logical observation identifiers names and codes"/
19. (EHR\$1 or EMR\$1 or electronic health record\$1 or electronic medical record\$1).ab,kw,ti.
20. ((billing or claim\$ or admin\$ or utilization or patient or inpatient or in-patient or outpatient or out-patient or care or medical or clinical or health\$ or hospital\$ or electronic or digit\$ or computer\$) adj2 (data\$ or record\$1 or system\$1)).ab,kw,ti.
21. (billing code or discharge code or Read code or SNOMED CT or ICD*).ab,kw,ti.
22. 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21
23. validation study/
24. "sensitivity and specificity"/ or predictive value/ or receiver operating characteristic/
25. (validation or validity or verification or verify or identification or identify).ab,kw,ti.
26. ((case or cases) adj2 (definition\$ or define\$ or evaluat\$)).ab,kw,ti.

27. (sensitivity or specificity or PPV or PNV or NPV or positive predictive value\$ or predictive positive value\$ or predictive negative value\$ or negative predictive value\$ or likelihood ratio or precision or accuracy or ROC or receiver operating characteristic\$ or kappa or "c-statistic" or (concordance adj statistic) or "c-index").ab,kw,ti.

28. 23 or 24 or 25 or 26 or 27

29. 13 and 22 and 28