

Supplementary file 1. Detailed search strategies

Ovid MEDLINE(R) 1946 to Present with Daily Update – executed 10.05.16

| # | Search Statement | Results |
|----|---|---------|
| 1 | exp Asthma/ or Bronchial Spasm/ or exp Bronchoconstriction/ or (asthma* or wheez* or bronchoconstrict* or bronchial constrict* or bronch* constrict* or bronchial spasm or bronchospas* or bronch* spasm*).tw. | 150958 |
| 2 | Bronchial Hyperreactivity/ or Respiratory Hypersensitivity/ | 15662 |
| 3 | 1 or 2 | 157160 |
| 4 | (exacerb* or deteriorat* or aggravate* or acute* or status* or sever* or wors* or attack* or crisis or critical or hospital* or relapse or uncontrolled or poor* controlled).tw. or exp Recurrence/ or exp Disease Progression/ or exp Mortality/ or exp Death/ | 4817367 |
| 5 | exp Emergency Service, Hospital/ or exp Emergency Medical Services/ or exp Hospitalization/ or exp Hospitals/ or exp Intensive Care Units/ or exp Emergencies/ or (emergenc* or acute care or intensive care or intensive treatment unit* or hospital*).tw. | 1291812 |
| 6 | (admission* or admit* or attend* or visit* or present* or utilis* or utiliz* or use* or using).tw. | 8649008 |
| 7 | 5 and 6 | 708396 |
| 8 | exp Primary Health Care/ or exp General Practice/ or exp Family Practice/ or exp Physicians/ or (physician* or doctor* or health care professional or general practice or asthma nurse or specialist nurse or GP).tw. | 574496 |
| 9 | exp "Appointments and Schedules"/ or appointment*.tw. or visit*.tw. | 165155 |
| 10 | (unscheduled or additional or increase*).tw. | 3829910 |
| 11 | 8 and 9 and 10 | 9990 |
| 12 | exp Medicine/ or exp Therapeutics/ or exp Anti-Asthmatic Agents/ or exp Bronchodilator Agents/ or exp Adrenergic beta-Agonists/ or exp Cholinergic Antagonists/ or exp Steroids/ or exp Glucocorticoids/ or (medicin* or treatment or medication or steroid* or corticosteroid* or glucocorticosteroid* or inhaler* or beta agonist* or beta-2-agonist* or SABA or anticholinergic* or ICS).tw. | 7354258 |
| 13 | (rescue or supplement* or (step* adj up) or adjuvant or additional or increase* or augment*).tw. | 849246 |
| 14 | 12 and 13 | 379948 |
| 15 | exp Steroids/ or exp Glucocorticoids/ or (steroid* or corticosteroid* or glucocorticosteroid*).tw. | 923905 |
| 16 | (systemic or oral or intravenous or intramuscular or injectable or parenteral or IV or IM).tw. or exp Injections, Intravenous/ or exp Administration, Intravenous/ or exp Injections, Intramuscular/ or exp Infusions, Parenteral/ or rescue.tw. | 1384151 |
| 17 | 15 and 16 | 120669 |
| 18 | ((((nocturnal or night* or sleep*) adj2 (symptom* or wheeze* or asthma or wakening or woken or disturb*)) or ((daily or daytime) adj2 (activit* adj2 disturb*))).tw. | 15029 |

| | | |
|----|---|---------|
| 19 | exp Oxygen Inhalation Therapy/ or exp Intubation, Intratracheal/ or nebuli*.tw. | 63956 |
| 20 | ((increas* or wors* or aggravate*) and (frequenc* or sever* or symptom* or wheez* or breathless* or dyspn?a)).tw. | 870900 |
| 21 | 4 or 7 or 11 or 14 or 17 or 18 or 19 or 20 | 5466020 |
| 22 | 3 and 21 | 67554 |
| 23 | Risk Factors/ or Risk/ or (risk adj3 factor*).tw. or predict*.tw. or (risk* adj2 exacerb*).tw. | 1719001 |
| 24 | 23 and 22 | 12770 |
| 25 | Animals/ not Humans/ | 4196538 |
| 26 | 24 not 25 | 12662 |
| 27 | Adult/ not Child/ | 3672244 |
| 28 | 26 not 27 | 8379 |
| 29 | (COPD.tw. or Pulmonary Disease, Chronic Obstructive/) not Asthma/ | 31916 |
| 30 | 28 not 29 | 8099 |
| 31 | Comment/ or Letter/ or Editorial/ or Autobiography/ or Biography/ or Bibliography/ or Dictionary/ or Directory/ or Interactive Tutorial/ or Lectures/ | 1578832 |
| 32 | 30 not 31 | 7989 |

71 additional studies were detected in the 'latest update search' Total 8060

EMBASE search strategy

exp asthma/ or wheezing/ or bronchospasm/ or bronchoconstriction/ or bronchus hyperreactivity/ or (asthma* or wheez* or bronchospas* or (bronch* adj3 spasm*) or bronch* constrict* or bronchoconstrict*).tw. or ((bronchial* or respiratory or airway* or lung*) adj3 (hypersensitiv* or hyperreactiv*)).tw.

-----**AND**-----

((emergenc* or exacerb* or deteriorat* or aggravat* or acute* or sever* or wors* or attack* or crisis or critical or relaps* or uncontrolled or poor* controlled or hospital* or rehospital*) adj5 (asthma* or wheez* or bronchospas* or (bronch* adj3 spasm*) or bronch* constrict* or ((bronchial* or respiratory or airway* or lung*) adj3 (hypersensitiv* or hyperreactiv*)) or bronchoconstrict*).tw.

-----**OR**-----

exp asthma/ or wheezing/ or bronchospasm/ or bronchoconstriction/ or bronchus hyperreactivity/

and

disease exacerbation/ or deterioration/ or asthmatic state/ or relapse/ or mortality/ or death/ or hospitalization/ or hospital admission/ or hospital readmission/ or emergency treatment/ or acute disease/ or emergency/

-----**OR**-----

(emergency health service/ or emergency ward/ or emergency care/ or emergency treatment/ or emergency medicine/ or emergency nurse practitioner/ or emergency/ or intensive care/ or intensive care unit/ or hospital/ **and** (admission* or admit* or attend* or visit* or present* or utilis* or utiliz* or usage).tw.

-----**OR**-----

(acute care or acute treatment or (acute adj2 department*) or (acute adj2 unit*) or intensive care or intensive treatment or (intensive adj2 department*) or (intensive adj2 unit*) or hospital*).tw. adj5 (admission* or admit* or attend* or visit* or present* or utilis* or utiliz* or usage).tw.

-----**OR**-----

primary medical care/ or primary health care/ or general practice/ or physician/ or general practitioner/ or (physician* or doctor* or general practice* or primary care or general practitioner* or asthma nurse* or specialist nurse* or GP).tw.

and

(appointment* or visit* or attend*).tw.

and

(unscheduled or additional or urgent).tw.

-----**OR**-----

((treatment or medication or steroid* or corticosteroid* or glucocorticosteroid* or prednisolone or prednisone or beta-2-agonist* or beta agonist* or SABA or anticholinergic* or ICS) adj5 (rescue or (step* adj up) or additional or increase* or augment*).tw.

-----**OR**-----

drug/ or drug therapy/ or antiasthmatic agent/ or bronchodilating agent/ or beta 2 adrenergic receptor stimulating agent/ or exp cholinergic receptor blocking agent/ or steroid/ or corticosteroid/ or glucocorticoid/ or prednisolone/ or prednisone/

and

(rescue or (step* adj up) or additional or increase* or augment*).tw.

-----OR-----

steroid/ or corticosteroid/ or glucocorticoid/ or prednisolone/ or prednisone/ or (steroid* or corticosteroid* or glucocorticoid* or glucocorticosteroid* or prednisolone or prednisone).tw.

and

systemic therapy/ or oral drug administration/ or intravenous drug administration/ or intramuscular drug administration/ or injection/ or (systemic or oral or intravenous or intramuscular or parenteral or IV or IM or rescue).tw.

-----OR-----

((nocturnal or night*) adj2 (symptom* or wheez* or asthma* or waking or woken or disturb*)) or ((daily or daytime) adj2 activit* adj2 disturb*) or (sleep* adj2 (waking or woken or disturb*))).tw. or ((sleep/ or night sleep/) and (waking or woken or disturb*).tw.) or (daily life activity/ and disturb*.tw.)

-----OR-----

oxygen therapy/ or exp respiratory tract intubation/ or nebulization/ or nebuli*.tw.

-----OR-----

((increas* or wors* or aggravat*) **adj3** (frequenc* or sever* or symptom* or wheez* or breathless* or dyspn?ea)).tw.

-----OR-----

increas*.tw. **and** (disease severity/ or health care utilization/)

-----AND-----

risk factors/ or risk/ or risk*.tw. or (predict* adj5 factor*).tw. or (predict* adj5 exacerb*).tw.

Final N =17712

Not - animal/ not human = 17705

Not - adult/ not child/ = 13933

Not - chronic obstructive lung disease/ = 13680

Not (book or book series or chapter or conference abstract or conference paper or conference proceeding or "conference review" or editorial or erratum or letter or note).pt. = 8755

Not (Case study/ or case report/) = 8517

Limit to Embase = 7400

AMED (Allied and Complementary Medicine) 1985 to April 2016 search strategy

exp Asthma/ or Respiratory hypersensitivity/ or (asthma* or wheez* or bronchospas* or (bronch* adj3 spasm*) or bronchoconstrict* or (bronch* adj3 constrict*)).tw. or ((bronchial* or respiratory or airway* or lung*) adj3 (hypersensitiv* or hyperreactiv*)).tw.

-----AND-----

Acute disease/ or Emergencies/ or Hospitalization/ or Patient Admission/ or Recurrence/ or Emergency Treatment/ or Mortality/ or Death/ or (emergenc* or exacerb* or deteriorat* or aggravat* or acute* or sever* or wors* or attack* or crisis or critical or relaps* or hospital* or rehospital* or uncontrolled or (poor* adj2 control*) or (asthma* adj1 status)).tw.

-----OR-----

Emergency Medical Services/ or Intensive Care/ or Critical Care/ or Hospitals/ or (acute care or acute treatment or intensive care or intensive treatment or (intensive adj2 unit*) or (intensive adj2 department*) or hospital*).tw.

and

Patient Admission/ or (admission* or admit* or attend* or visit* or present* or utilis* or utiliz* or usage).tw.

-----OR-----

Primary Health Care/ or Family Practice/ or Physicians/ or (physician* or doctor* or general practice* or general practitioner* or primary care or asthma nurse* or specialist nurse* or GP).tw.

and

(appointment* or visit* or attend*).tw.

and

(unscheduled or additional or urgent).tw.

-----OR-----

Drug therapy/ or Therapy/ or Antiasthmatic Agents/ or Bronchodilator Agents / or Steroids/ or Glucocorticoids/ or Prednisone/ or (treatment or medication or steroid* or corticosteroid* or glucocorticosteroid* or glucocorticoid* or prednisolone or prednisone or beta-2-agonist* or beta agonist* or SABA or anticholinergic* or cholinergic antagonist* or ICS).tw.

and

(rescue or (step* adj up) or additional or increase* or augment*).tw.

-----OR-----

Steroids/ or Glucocorticoids/ or Prednisone/ or (steroid* or corticosteroid* or glucocorticosteroid* or glucocorticoid* or prednisolone or prednisone).tw.

and

Injections/ or (systemic or oral or intravenous or intramuscular or parenteral or IV or IM or rescue).tw.

-----OR-----

((nocturnal or night*) adj3 (symptom* or wheez* or asthma or wakening or woken or disturb*)) or (sleep* adj2 (wakening or woken or disturb*)) or ((daily or daytime) adj3 activit*

adj3 disturb*).tw. or (Sleep/ and (wakening or woken or disturb*).tw.) or (Activities of Daily Living/ and disturb*.tw.)

-----OR-----

Oxygen Inhalation Therapy/ or Intubation / or nebuli*.tw.

-----OR-----

((increas* or wors* or aggravat*) and (frequenc* or sever* or symptom* or wheez* or breathless* or dyspnoea or dyspnea)).tw.

-----OR-----

increas*.tw. and (Health Services/ or Health Care/) and (utilis* or utiliz* or usage).tw.

-----AND-----

Risk Factors/ or Risk/ or risk*.tw. or predict*.tw.

N of hits: 105

Not Animals/ not Humans/ = 105

Not Adult/ not Child/ = 91

(pulmonary disease chronic obstructive/ or bronchitis/ or pulmonary emphysema/ or lung diseases obstructive/) not Asthma/ = 83

Not - (bibliography or bibliography or brief communication or clinical note or commentary or conference or congress or congress proceedings or editorial or equipment note or "equipment review" or interview or lecture or letter or meeting paper or meeting report or monograph or news or notes or proceedings or study guide or symposium or technical note or thesis or thesis summary).pt. = 83

CINAHL Plus search strategy

(MH "Asthma+") OR (MH "Bronchial Spasm") OR (MH "Bronchoconstriction") OR (MH "Respiratory Hypersensitivity") OR "asthma*" OR "wheez*" OR "bronchospas*" OR "bronch* N3 spasm*" OR "bronchoconstrict*" OR "bronch* N3 constrict*" OR ("bronchial*" or "respiratory" or "airway*" or "lung*") N3 ("hypersensitiv*" or "hyperreactiv*")

-----AND-----

(MH "Disease Exacerbation") OR (MH "Status Asthmaticus") OR (MH "Mortality") OR (MH "Death") OR (MH "Hospitalization") OR (MH "Child, Hospitalized") OR (MH "Infant, Hospitalized") OR "hospitali?ation" OR "hospitali?ed" OR "hospital admission*" OR "exacerbat*" OR "deteriorat*" OR "aggravat*" OR (MH "Acute Disease") OR "acute" OR "sever*" OR "wors*" OR "attack*" OR "crisis" OR (MH "Critical Illness") OR "critical" OR "uncontrolled" OR "poor* controlled" OR "relaps*" or "emergenc*"

-----OR-----

((MH "Emergency Medical Services") OR (MH "Emergency Service") OR (MH "Emergency Care") OR (MH "Emergency Nurse Practitioners") OR (MH "Emergency Treatment") OR (MH "Physicians, Emergency") OR (MH "Emergencies") OR (MH "Intensive Care Units") OR (MH "Critical Care") OR (MH "Intensive Care Units, Pediatric") OR (MH "Hospitals") OR (MH "Acute Care")) **and** ((MH "Patient Admission") OR "admission*" OR "admit*" OR "attend*" OR "visit*" OR "present*" OR "utilis*" OR "utiliz*" OR "usage")

-----OR-----

("hospital*" OR "acute care" or "acute treatment" or "acute N1 unit*" or "acute N1 department*" or "intensive treatment" or "intensive care" OR "intensive N1 unit*" OR "intensive N1 department*") **N4** ("admission*" OR "admit*" OR "attend*" OR "visit*" OR "present*" OR "utilis*" OR "utiliz*" OR "usage")

-----OR-----

(MH "Family Practice") OR "general practice*" OR (MH "Primary Health Care") OR (MH "Physicians, Family") OR "primary care" OR "physician*" OR "doctor*" OR "asthma nurse*" OR (MH "Clinical Nurse Specialists") OR "specialist nurse*" OR "GP" OR "general practitioner*"

and

(MH "Appointments and Schedules") OR "appointment*" OR "visit*" OR "attend*"

and

"unscheduled" OR "additional" OR "urgent"

-----OR-----

((MH "Therapeutics") OR (MH "Drug Therapy") OR (MH "Bronchodilator Agents") OR (MH "Adrenergic Beta-Agonists") OR (MH "Cholinergic Antagonists") OR (MH "Steroids") OR (MH "Glucocorticoids") OR (MH "Prednisolone") OR (MH "Prednisone")) **and** ("rescue" OR "step* N up" OR "additional" OR "increase*" OR "augment*")

-----OR-----

("treatment" OR "medication*" OR "bronchodilator*" OR "antiasthma*" OR "anti-asthma*" OR "cholinergic antagonist*" OR "steroid*" OR "corticosteroid*" OR "glucocorticosteroid*")

OR "beta agonist*" OR "beta-2-agonist*" OR "SABA" OR "anticholinergic*" OR "ICS" OR "prednisolone" OR "prednisone") **N4** ("rescue" OR "step* N up" OR "additional" OR "increase*" OR "augment*")

-----OR-----

(MH "Steroids") OR "steroid*" OR "corticosteroid*" OR (MH "Glucocorticoids") OR "glucocorticoid*" OR "glucocorticosteroid*" OR (MH "Prednisolone") OR (MH "Prednisone") or "prednisolone" or "prednisone"

and

"systemic" OR (MH "Injections, Intravenous") OR (MH "Administration, Intravenous") OR (MH "Intravenous Therapy") OR "intravenous" OR (MH "Administration, Oral") OR "oral" OR (MH "Injections, Intramuscular") OR "intramuscular" OR (MH "Injections") OR "injection*" OR "injectable" OR "parenteral" OR "IV" OR "IM" OR "rescue"

-----OR-----

((("nocturnal" or "night*") N2 ("symptom*" or "wheeze*" or "asthma" or "wakening" or "woken" or "disturb*")) OR (("daytime" or "daily") N3 "activit*" N3 "disturb*") OR (MH "Activities of Daily Living" and "disturb*") OR (MH "Sleep" and ("wakening" or "woken" or "disturb*")) OR (MH "Symptoms" and ("nocturnal" or "night*")) OR (sleep* N2 (wakening or woken or disturb*))

-----OR-----

(MH "Oxygen Therapy") OR "oxygen therapy" OR "respiratory * intubation" OR (MH "Intubation, Intratracheal") OR "nebuli*"

-----OR-----

("increas*" or "wors*" or "aggravat*") N4 ("frequenc*" or "sever*" or "symptom*" or "wheeze*" or "breathless*" or "dyspn?ea")

-----OR-----

"increas*" and ((MH "Health Services") OR "health services" OR "health care") and (utilis* or utiliz* or usage)

-----OR-----

"increas*" and ((MH "Disease Exacerbation") OR "disease severity")

-----AND-----

MH "Risk Factors" OR "risk*" OR "predict*"

N of hits n 3,735

Not - (MH "Animals") NOT (MH "Human") n 3,711

Not - (MH "Adult") NOT (MH "Child") n 2,921

Not - (MH "Pulmonary Disease, Chronic Obstructive") NOT (MH "Asthma") n 2,869

Not - PT Commentary OR PT Letter OR PT Editorial OR PT Bibliography OR PT Biography OR PT Book OR PT Book Chapter OR PT Book Review OR PT Proceedings OR PT Case Study OR PT Directories OR PT Doctoral Dissertation OR PT Masters Thesis OR PT Teaching Materials OR PT Practice Guidelines n = 2,661

PsycINFO 1987 to May Week 1 2016 (UoE, OVID)

exp ASTHMA/ OR (asthma* or wheez* or bronchospas* or (bronch* adj3 spasm*) or bronchoconstrict* or (bronch* adj3 constrict*).tw. or ((bronchial* or respiratory or airway* or lung*) adj3 (hypersensitiv* or hyperreactiv*).tw.

-----**AND**-----

(emergenc* or exacerb* or deteriorat* or aggravat* or acute* or sever* or (asthma* adj1 status) or wors* or attack* or crisis or critical or hospital* or rehospital* or relaps* or uncontrolled or poor* controlled or mortality or death).tw. or HOSPITALS/ or Hospital Admission/ or Hospitalization/ or Hospitalized Patients/ or "Death and Dying"/

-----**OR**-----

Emergency Services/ or Intensive Care/ or HOSPITALS/ or (acute care or acute treatment or (acute adj2 department*) or (acute adj2 unit*) or intensive care or intensive treatment or (intensive adj2 unit*) or (intensive adj2 department*) or hospital*).tw.

and

(admission* or admit* or attend* or visit* or present* or utilis* or utiliz* or usage).tw.

-----**OR**-----

Primary Health Care/ or General Practitioners/ or Family Physicians/ or Physicians/ or Family Medicine/ or (general practice* or general practitioner* or primary care or doctor* or physician* or asthma nurse* or specialist nurse* or GP).tw.

and

(appointment* OR visit* OR attend*).tw.

and

(unscheduled or additional or urgent).tw.

-----**OR**-----

Drug Therapy/ or Treatment/ or Steroids/ or Corticosteroids/ or Glucocorticoids/ or Prednisolone/ or (treatment or medication OR bronchodilat* or steroid* or corticosteroid* or glucocorticosteroid* or glucocorticoid* or prednisolone or prednisone or beta agonist* or beta-2-agonist* or anticholinergic* or cholinergic antagonist* or SABA or ICS or antiasthma* or anti-asthma*).tw

and

(rescue or (step* adj up) or additional or increase* or augment*).tw.

-----**OR**-----

Steroids/ or Corticosteroids/ or Glucocorticoids/ or Prednisolone/ or (steroid* or corticosteroid* or glucocorticosteroid* or glucocorticoid* or prednisolone or prednisone).tw.

and

Intravenous injections/ or Intravenous drug usage/ or Intramuscular injections/ or Injections/ or (systemic or intravenous or intramuscular or oral or injection* or injectable or parenteral or IV or IM or rescue).tw.

-----**OR**-----

((nocturnal or night*) adj3 (symptom* or wheez* or asthma or wakening or woken or disturb*)) or ((daily or daytime) adj3 activit* adj3 disturb*).tw. or (Sleep/ and (wakening or woken or disturb*).tw.) or ((nocturnal or night*).tw. and Symptoms/) or ("Activities of Daily Living"/ or Daily Activities/) and disturb*.tw.) or (sleep* adj2 (wakening or woken or disturb*).tw.).

-----OR-----

(oxygen therapy or intubation/ or nebuli*).tw.

-----OR-----

((increas* or wors* or aggravat*) adj5 (frequenc* or sever* or symptom* or wheez* or breathless* or dyspn?ea)).tw.

-----OR-----

(increas*.tw. and Health Care Utilization/) or (increas*.tw. and Health Care Services/ and (utilis* or utiliz* or usage).tw.)

-----AND-----

Risk Factors/ or risk*.tw. or predict*.tw.

N of hits n 1005

Not - Animals/ NOT human*.tw. n 1004

Not - (adult* not child*).tw. n 866

Not - Chronic Obstructive Pulmonary Disease/ not Asthma/ n 857

Not - (bibliography or chapter or "column/opinion" or "comment/reply" or dissertation or editorial or encyclopedia entry or "erratum/correction" or letter or obituary or poetry or publication information or reprint or review-book or review-media).dt. n 636

Not - (book or authored book or edited book or encyclopedia or dissertation abstract).pt. n 607

Cochrane CENTRAL (UoE, Cochrane Database)

| ID | Search | Hits |
|------------|---|---------------|
| #1 | MeSH descriptor: [Asthma] explode all trees | 9783 |
| #2 | asthma | 25937 |
| #3 | wheez* | 1792 |
| #4 | MeSH descriptor: [Bronchial Spasm] this term only | 359 |
| #5 | MeSH descriptor: [Bronchoconstriction] this term only | 543 |
| #6 | MeSH descriptor: [Bronchial Hyperreactivity] this term only | 563 |
| #7 | MeSH descriptor: [Respiratory Hypersensitivity] this term only | 212 |
| #8 | bronchoconstrict* | 2326 |
| #9 | bronchospas* | 1579 |
| #10 | bronch* near/3 spasm* | 537 |
| #11 | bronch* near/3 constrict* | 195 |
| #12 | (bronchial* or respiratory or airway* or lung*) near/3 (hypersensitiv* or hyperreactiv*) | 1324 |
| #13 | #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 | 28042 |
| #14 | MeSH descriptor: [Disease Progression] this term only | 5548 |
| #15 | MeSH descriptor: [Emergencies] this term only | 696 |
| #16 | MeSH descriptor: [Patient Admission] this term only | 626 |
| #17 | MeSH descriptor: [Hospitalization] this term only | 5034 |
| #18 | MeSH descriptor: [Emergency Treatment] this term only | 273 |
| #19 | MeSH descriptor: [Mortality] this term only | 555 |
| #20 | MeSH descriptor: [Death] this term only | 104 |
| #21 | MeSH descriptor: [Status Asthmaticus] this term only | 48 |
| #22 | MeSH descriptor: [Recurrence] this term only | 11060 |
| #23 | MeSH descriptor: [Acute Disease] this term only | 9410 |
| #24 | MeSH descriptor: [Patient Readmission] this term only | 930 |
| #25 | MeSH descriptor: [Symptom Flare Up] this term only | 0 |
| #26 | (emergenc* or exacerb* or deteriorat* or aggravat* or acute* or sever* or wors* or attack* or crisis or critical or relaps* or hospital* or rehospital* or uncontrolled or poor* controlled):ti,ab,kw | 288386 |
| #27 | #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 | 296698 |
| #28 | MeSH descriptor: [Emergency Medical Services] this term only | 986 |
| #29 | MeSH descriptor: [Emergency Service, Hospital] this term only | 1880 |
| #30 | MeSH descriptor: [Hospitals] this term only | 402 |
| #31 | MeSH descriptor: [Intensive Care Units] this term only | 1985 |
| #32 | MeSH descriptor: [Emergency Medicine] this term only | 239 |
| #33 | MeSH descriptor: [Critical Care] this term only | 1728 |
| #34 | MeSH descriptor: [Emergency Nursing] this term only | 67 |
| #35 | MeSH descriptor: [Critical Care Nursing] this term only | 16 |
| #36 | (acute care or acute treatment or acute department* or acute unit* or intensive care or intensive treatment or intensive department* or intensive unit* or hospital*):ti,ab,kw | 127511 |
| #37 | #28 or #29 or #30 or #31 or #32 or #33 or #34 or #35 or #36 | 128361 |
| #38 | MeSH descriptor: [Patient Admission] this term only | 626 |
| #39 | MeSH descriptor: [Patient Readmission] this term only | 930 |

| | | |
|------------|---|---------------|
| #40 | (admission* or admit* or attend* or visit* or present* or utilis* or utiliz* or usage):ti,ab,kw | 160148 |
| #41 | #38 or #39 or #40 | 160650 |
| #42 | #37 and #41 | 40616 |
| #43 | MeSH descriptor: [Primary Health Care] this term only | 3665 |
| #44 | MeSH descriptor: [General Practice] this term only | 302 |
| #45 | MeSH descriptor: [Family Practice] explode all trees | 2170 |
| #46 | MeSH descriptor: [General Practitioners] this term only | 144 |
| #47 | MeSH descriptor: [Physicians, Primary Care] this term only | 102 |
| #48 | MeSH descriptor: [Physicians, Family] this term only | 475 |
| #49 | (physician* or doctor* or general practice* or primary care or asthma nurse* or specialist nurse* or general practitioner* or GP):ti,ab,kw | 55849 |
| #50 | #43 or #44 or #45 or #46 or #47 or #48 or #49 | 56061 |
| #51 | MeSH descriptor: [Appointments and Schedules] this term only | 388 |
| #52 | (appointment* or visit* or attend*):ti,ab,kw | 37327 |
| #53 | #51 or #52 | 37327 |
| #54 | (unscheduled or additional or urgent):ti,ab,kw | 42212 |
| #55 | #50 and #53 and #54 | 1139 |
| #56 | MeSH descriptor: [Therapeutics] this term only | 61 |
| #57 | MeSH descriptor: [Drug Therapy] this term only | 444 |
| #58 | MeSH descriptor: [Anti-Asthmatic Agents] this term only | 1601 |
| #59 | MeSH descriptor: [Bronchodilator Agents] this term only | 3600 |
| #60 | MeSH descriptor: [Adrenergic beta-Agonists] this term only | 1569 |
| #61 | MeSH descriptor: [Cholinergic Antagonists] this term only | 332 |
| #62 | MeSH descriptor: [Steroids] this term only | 707 |
| #63 | MeSH descriptor: [Glucocorticoids] this term only | 3811 |
| #64 | MeSH descriptor: [Adrenergic beta-2 Receptor Agonists] this term only | 257 |
| #65 | (treatment or medication or steroid* or corticosteroid* or glucocorticosteroid* or glucocorticoid* or beta agonist* or beta-2-agonist* or SABA or anticholinergic* or ICS):ti,ab,kw | 441217 |
| #66 | #56 or #57 or #58 or #59 or #60 or #61 or #62 or #63 or #64 or #65 | 442442 |
| #67 | (rescue or (step* near/1 up) or additional or increase* or augment*):ti,ab,kw | 247361 |
| #68 | #66 and #67 | 129966 |
| #69 | MeSH descriptor: [Steroids] this term only | 707 |
| #70 | MeSH descriptor: [Glucocorticoids] this term only | 3811 |
| #71 | MeSH descriptor: [Prednisolone] this term only | 2016 |
| #72 | MeSH descriptor: [Prednisone] this term only | 2971 |
| #73 | (steroid* or corticosteroid* or glucocorticosteroid* or prednisolone or prednisone):ti,ab,kw | 36602 |
| #74 | #69 or #70 or #71 or #72 or #73 | 37838 |
| #75 | MeSH descriptor: [Administration, Oral] this term only | 20662 |
| #76 | MeSH descriptor: [Injections, Intravenous] this term only | 7482 |
| #77 | MeSH descriptor: [Injections, Intramuscular] this term only | 3597 |
| #78 | MeSH descriptor: [Injections] this term only | 2346 |
| #79 | MeSH descriptor: [Administration, Intravenous] this term only | 309 |
| #80 | MeSH descriptor: [Infusions, Intravenous] this term only | 9525 |
| #81 | MeSH descriptor: [Infusions, Parenteral] this term only | 1433 |

| | | |
|-------------|--|---------------|
| #82 | (systemic or oral or intravenous or intramuscular or injectable or parenteral or IV or IM or rescue):ti,ab,kw | 186379 |
| #83 | #75 or #76 or #77 or #78 or #79 or #80 or #81 or #82 | 188117 |
| #84 | #74 and #83 | 13338 |
| #85 | ((nocturnal or night* or sleep*) near/2 (symptom* or wheeze* or asthma or wakening or woken or disturb*)):ti,ab,kw or ((daily or daytime) near/2 activit* near/2 disturb*):ti,ab,kw | 3083 |
| #86 | MeSH descriptor: [Sleep] this term only | 3021 |
| #87 | (wakening or woken or disturb*):ti,ab,kw | 8933 |
| #88 | #86 and #87 | 335 |
| #89 | MeSH descriptor: [Activities of Daily Living] this term only | 4247 |
| #90 | disturb*:ti,ab,kw | 8872 |
| #91 | #89 and #90 | 72 |
| #92 | MeSH descriptor: [Oxygen Inhalation Therapy] this term only | 939 |
| #93 | MeSH descriptor: [Intubation] this term only | 220 |
| #94 | MeSH descriptor: [Intubation, Intratracheal] this term only | 3235 |
| #95 | nebuli*:ti,ab,kw or (respiratory * intubation):ti,ab,kw | 5435 |
| #96 | ((increas* or wors* or aggravat*) and (frequenc* or sever* or symptom* or wheez* or breathless* or dyspn?ea)):ti,ab,kw or (increas* and health care and (utiliz* or utilis*)):ti,ab,kw | 69120 |
| #97 | #27 or #42 or #55 or #68 or #84 or #85 or #88 or #91 or #92 or #93 or #94 or #95 or #96 | 389973 |
| #98 | MeSH descriptor: [Risk Factors] this term only | 22670 |
| #99 | MeSH descriptor: [Risk] this term only | 3575 |
| #100 | (risk* or predict*):ti,ab,kw | 160345 |
| #101 | #98 or #99 or #100 | 160345 |
| #102 | #13 and #97 and #101 | 3348 |
| #103 | MeSH descriptor: [Adult] explode all trees | 1515 |
| #104 | MeSH descriptor: [Child] explode all trees | 173 |
| #105 | MeSH descriptor: [Adolescent] explode all trees | 85135 |
| #106 | #104 or #105 | 85229 |
| #107 | #103 not #106 | 1321 |
| #108 | #102 not #107 | 3347 |
| #109 | MeSH descriptor: [Animals] explode all trees | 7440 |
| #110 | MeSH descriptor: [Humans] explode all trees | 1221 |
| #111 | #109 not #110 | 6219 |
| #112 | #108 not #111 | 3297 |
| #113 | MeSH descriptor: [Pulmonary Disease, Chronic Obstructive] explode all trees | 3093 |
| #114 | MeSH descriptor: [Asthma] explode all trees | 9783 |
| #115 | #113 not #114 | 2945 |
| #116 | #112 not #115 | 3152 |