**Online Supplemental Material**

Search Strategies by Database

PubMed

#1 Hypoxemia[tw] OR hypoxaemia[tw] OR "Hypoxia"[Mesh] OR anoxia[tw] OR anoxemia[tw] OR hypoxia[tw] OR hypoxic[tw] OR ((Deficiency[tw] OR deficiencies[tw] OR low) AND (oxygen[tw] OR O2[tw] OR PaO2[tw] OR pO2[tw] OR "Oxygen"[Mesh])) OR ((“carbon dioxide”[tw] OR CO2[tw] OR PaCO2[tw] OR pCO2[tw]) AND (retention[tw] OR retained[tw] OR retaining[tw] OR retain[tw])) OR ((“cardiac arrest”[tw] OR “cardiac arrests”[tw] OR “heart arrest”[tw] OR “heart arrests”[tw] OR “cardiopulmonary arrest”[tw] OR “cardiopulmonary arrests”[tw] OR asystole[tw] OR asystoles[tw] OR "Heart Arrest"[Mesh] OR "Brain Injuries, Traumatic"[Mesh] OR “traumatic brain injury”[tw] OR “traumatic brain injuries”[tw] OR “brain trauma”[tw] OR “brain traumas”[tw] OR TBI[tw] OR TBIs[tw] OR “traumatic encephalopathy”[tw] OR “traumatic encephalopathies”[tw] OR "Stroke"[Mesh] OR stroke[tw] OR strokes[tw] OR “brain ischemia”[tw] OR “intracranial hemorrhage”[tw] OR “intracranial hemorrhages”[tw] OR “cerebral hemorrhage”[tw] OR “cerebral hemorrhages”[tw] OR apoplexy[tw] OR neurological[tw] OR neurologic[tw] OR "Immunocompromised Host"[Mesh] OR Immunocompromised[tw] OR immunosuppressed[tw] OR immunosuppression[tw] OR ((impaired[tw] OR compromised[tw] OR suppressed[tw] OR deficiency[tw] OR deficiencies[tw] OR weak[tw] OR weakened[tw] OR low[tw]) AND (“immune system”[tw] OR “immune systems”[tw] OR "Immune System"[Mesh])) OR "Postoperative Period"[Mesh] OR postoperative[tw] OR “post-operative”[tw]) AND ("Critical Care"[Mesh] OR “critical care”[tw] OR “critically ill”[tw] OR “critical illness”[tw] OR "Critical Illness"[Mesh]))

#2 “Supplemental oxygen”[tw] OR “oxygen therapy”[tw] OR “oxygen therapies”[tw] OR oxygenation[tw] OR “oxygen delivery”[tw] OR “oxygen target”[tw] OR “oxygen targets”[tw] OR “O2 target”[tw] OR “O2 targets”[tw] OR “oxygen level”[tw] OR “oxygen levels”[tw] OR FiO2[tw] OR “inspired oxygen fraction”[tw] OR “fractional inspired oxygen”[tw] OR “oxygen saturation”[tw] OR “O2 saturation”[tw] OR “Oxygen/Therapy”[Mesh] OR “Oxygen/Therapeutic Use”[Mesh] OR “Nasal cannula”[tw] OR “nasal cannulae”[tw] OR "Cannula"[Mesh] OR Oxymask[tw] OR “oxygen mask”[tw] OR “oxygen masks”[tw] OR HFNC[tw] OR HHFNC[tw] OR “simple mask”[tw] OR “simple masks”[tw] OR “RAM cannula”[tw] OR “RAM cannulae”[tw] OR “venturi mask”[tw] OR “venturi masks”[tw] OR “oxygen hood”[tw] OR “oxygen hoods”[tw] OR “tot huts”[tw] OR “tot hut”[tw] OR “care cube”[tw] OR “care cubes”[tw] OR “oxygen tent”[tw] OR “oxygen tents”[tw] OR “non-rebreather mask”[tw] OR “non-rebreather masks”[tw] OR “aerosol mask”[tw] OR “aerosol masks”[tw] OR “mist tent”[tw] OR “mist tents”[tw] OR (oxygen[tw] AND (incubator[tw] OR incubators[tw] OR isolette[tw] OR isolettes[tw])) OR “low flow oxygen delivery”[tw] OR “cool mist”[tw] OR “oxygen delivery device”[tw] OR “oxygen delivery devices”[tw]

#3 Target[tw] OR flow[tw] OR “molecular size”[tw] OR “molecular sizes”[tw] OR “infection control”[tw] OR “infection prevention”[tw] OR “prevent infection”[tw] OR “control infection”[tw] OR heated[tw] OR heat[tw] OR heating[tw] OR humidified[tw] OR humidification[tw] OR humidifier[tw] OR humidifiers[tw] OR “heat moisture exchanger”[tw] OR "Humidifiers"[Mesh] OR ((Controlled[tw] OR non-controlled[tw] OR uncontrolled[tw]) AND (FiO2[tw] OR “fractional inspired oxygen”[tw])) OR ((Monitor[tw] OR monitoring[tw]) AND (continuous[tw] OR intermittent[tw] OR standard[tw] OR timing[tw] OR time[tw] OR frequency[tw])) OR oximetry[tw] OR oximetries[tw] OR “Oximetry”[Mesh] OR “oxygen monitoring”[tw] OR “oxygen monitor”[tw] OR “monitoring oxygen”[tw] OR “monitor oxygen”[tw] OR “transcutaneous oxygen”[tw] OR SpO2[tw] OR “non-invasive monitoring”[tw] OR “non-invasive monitor”[tw] OR “non-invasive monitors”[tw] OR “noninvasive monitoring”[tw] OR “noninvasive monitor”[tw] OR “noninvasive monitors”[tw] OR "saturation target"[tw] OR "saturation targets"[tw] OR "saturation targeting"[tw] OR "saturation targeted"[tw] OR “target saturation”[tw] OR “oxygen saturation”[tw] OR “O2 saturation”[tw]

#4 “sentinel event”[tw] OR “sentinel events”[tw] OR “critical incident”[tw] OR “critical incidents”[tw] OR “critical event”[tw] OR “critical events”[tw] OR “adverse events”[tw] OR “adverse event”[tw] OR death[tw] OR deaths[tw] OR fatality[tw] OR fatalities[tw] OR mortality[tw] OR mortalities[tw] OR "mortality" [Subheading] OR "Mortality"[Mesh] OR survival[tw] OR survivals[tw] OR “Patient comfort”[tw] OR "Patient Comfort"[Mesh] OR “comfort care”[tw] OR “length of stay”[tw] OR “length of hospital stay”[tw] OR LOS[tw] OR "Length of Stay"[Mesh] OR discharge[tw] OR discharged[tw] OR discharges[tw] OR "Patient Discharge"[Mesh] OR “Cognitive outcomes”[tw] OR “cognitive outcome”[tw] OR “cognitive activity”[tw] OR “cognitive activities”[tw] OR “cognitive function”[tw] OR “cognitive functioning”[tw] OR ((device[tw] OR devices[tw] OR cannula[tw] OR cannulae[tw] OR mask[tw] OR masks[tw]) AND (selection[tw] OR selected[tw] OR select[tw] OR selects[tw] OR selecting[tw] OR choose[tw] OR chose[tw] OR choosing[tw] OR chosen[tw] OR choice[tw] OR choices[tw] OR option[tw] OR options[tw] OR decide[tw] OR decides[tw] OR decided[tw] OR deciding[tw] OR decision[tw] OR Flow[tw] OR occlusive[tw] OR occlusion[tw] OR fit[tw] OR fits[tw] OR fitted[tw] OR limit[tw] OR limits[tw])) OR Cost[tw] OR costs[tw] OR economic[tw] OR economics[tw] OR financial[tw] OR financing[tw] OR financed[tw] OR finance[tw] OR "Costs and Cost Analysis"[Mesh] OR price[tw] OR pricing[tw]

#5 #1 AND #2 AND #3 AND #4

#6 #5 NOT ((“Child”[Mesh] OR “Infant”[Mesh] OR “Adolescent”[Mesh]) NOT “Adult”[Mesh])

#7 #6 NOT ("Animals"[Mesh] NOT "Humans"[Mesh])

#8 #7 NOT (Comment[sb] OR Editorial[ptyp] OR Interview[ptyp] OR Letter[ptyp] OR News[ptyp] OR Newspaper Article[ptyp] OR Review[ptyp] )

#9 #8 AND English[lang]

CINAHL via EBSCOhost

S1 TI(Hypoxemia OR hypoxaemia OR anoxia OR anoxemia OR hypoxia OR hypoxic) OR AB(Hypoxemia OR hypoxaemia OR anoxia OR anoxemia OR hypoxia OR hypoxic) OR MH "Anoxia+" OR ((TI(Deficiency OR deficiencies OR low) OR AB(Deficiency OR deficiencies OR low)) AND (TI(oxygen OR O2 OR PaO2 OR pO2) OR AB(oxygen OR O2 OR PaO2 OR pO2) OR MH "Oxygen")) OR ((TI(“carbon dioxide” OR CO2 OR PaCO2 OR pCO2) OR AB(“carbon dioxide” OR CO2 OR PaCO2 OR pCO2)) AND (TI(retention OR retained OR retaining OR retain) OR AB(retention OR retained OR retaining OR retain))) OR ((TI(“cardiac arrest” OR “cardiac arrests” OR “heart arrest” OR “heart arrests” OR “cardiopulmonary arrest” OR “cardiopulmonary arrests” OR asystole OR asystoles OR “traumatic brain injury” OR “traumatic brain injuries” OR “brain trauma” OR “brain traumas” OR TBI OR TBIs OR “traumatic encephalopathy” OR “traumatic encephalopathies” OR stroke OR strokes OR “brain ischemia” OR “intracranial hemorrhage” OR “intracranial hemorrhages” OR “cerebral hemorrhage” OR “cerebral hemorrhages” OR apoplexy OR neurological OR neurologic OR Immunocompromised OR immunosuppressed OR immunosuppression OR postoperative OR “post-operative”) OR AB(“cardiac arrest” OR “cardiac arrests” OR “heart arrest” OR “heart arrests” OR “cardiopulmonary arrest” OR “cardiopulmonary arrests” OR asystole OR asystoles OR “traumatic brain injury” OR “traumatic brain injuries” OR “brain trauma” OR “brain traumas” OR TBI OR TBIs OR “traumatic encephalopathy” OR “traumatic encephalopathies” OR stroke OR strokes OR “brain ischemia” OR “intracranial hemorrhage” OR “intracranial hemorrhages” OR “cerebral hemorrhage” OR “cerebral hemorrhages” OR apoplexy OR neurological OR neurologic OR Immunocompromised OR immunosuppressed OR immunosuppression OR postoperative OR “post-operative”) OR ((TI(impaired OR compromised OR suppressed OR deficiency OR deficiencies OR weak OR weakened OR low) OR AB(impaired OR compromised OR suppressed OR deficiency OR deficiencies OR weak OR weakened OR low)) AND (TI(“immune system” OR “immune systems”) OR AB(“immune system” OR “immune systems”) OR MH "Immune System+")) OR MH "Heart Arrest+" OR MH "Brain Injuries+" OR MH "Stroke+" OR MH "Immunocompromised Host" OR MH "Postoperative Period") AND (MH "Critical Care+" OR “critical care” OR “critically ill” OR “critical illness” OR MH "Critical Illness"))

S2 TI(“Supplemental oxygen” OR “oxygen therapy” OR “oxygen therapies” OR oxygenation OR “oxygen delivery” OR “oxygen target” OR “oxygen targets” OR “O2 target” OR “O2 targets” OR “oxygen level” OR “oxygen levels” OR FiO2 OR “inspired oxygen fraction” OR “fractional inspired oxygen” OR “oxygen saturation” OR “O2 saturation” OR “Nasal cannula” OR “nasal cannulae” OR Oxymask OR “oxygen mask” OR “oxygen masks” OR HFNC OR HHFNC OR “simple mask” OR “simple masks” OR “RAM cannula” OR “RAM cannulae” OR “venturi mask” OR “venturi masks” OR “oxygen hood” OR “oxygen hoods” OR “tot huts” OR “tot hut” OR “care cube” OR “care cubes” OR “oxygen tent” OR “oxygen tents” OR “non-rebreather mask” OR “non-rebreather masks” OR “aerosol mask” OR “aerosol masks” OR “mist tent” OR “mist tents” OR (oxygen AND (incubator OR incubators OR isolette OR isolettes)) OR “low flow oxygen delivery” OR “cool mist” OR “oxygen delivery device” OR “oxygen delivery devices”) OR AB (“Supplemental oxygen” OR “oxygen therapy” OR “oxygen therapies” OR oxygenation OR “oxygen delivery” OR “oxygen target” OR “oxygen targets” OR “O2 target” OR “O2 targets” OR “oxygen level” OR “oxygen levels” OR FiO2 OR “inspired oxygen fraction” OR “fractional inspired oxygen” OR “oxygen saturation” OR “O2 saturation” OR “Nasal cannula” OR “nasal cannulae” OR Oxymask OR “oxygen mask” OR “oxygen masks” OR HFNC OR HHFNC OR “simple mask” OR “simple masks” OR “RAM cannula” OR “RAM cannulae” OR “venturi mask” OR “venturi masks” OR “oxygen hood” OR “oxygen hoods” OR “tot huts” OR “tot hut” OR “care cube” OR “care cubes” OR “oxygen tent” OR “oxygen tents” OR “non-rebreather mask” OR “non-rebreather masks” OR “aerosol mask” OR “aerosol masks” OR “mist tent” OR “mist tents” OR (oxygen AND (incubator OR incubators OR isolette OR isolettes)) OR “low flow oxygen delivery” OR “cool mist” OR “oxygen delivery device” OR “oxygen delivery devices”) OR MH "Oxygen/TU" OR MH "Nasal Cannula"

S3 TI(Target OR flow OR “molecular size” OR “molecular sizes” OR “infection control” OR “infection prevention” OR “prevent infection” OR “control infection” OR heated OR heat OR heating OR humidified OR humidification OR humidifier OR humidifiers OR “heat moisture exchanger” OR ((Controlled OR non-controlled OR uncontrolled) AND (FiO2 OR “fractional inspired oxygen”)) OR ((Monitor OR monitoring) AND (continuous OR intermittent OR standard OR timing OR time OR frequency)) OR oximetry OR oximetries OR “oxygen monitoring” OR “oxygen monitor” OR “monitoring oxygen” OR “monitor oxygen” OR “transcutaneous oxygen” OR SpO2 OR “non-invasive monitoring” OR “non-invasive monitor” OR “non-invasive monitors” OR “noninvasive monitoring” OR “noninvasive monitor” OR “noninvasive monitors” OR "saturation target" OR "saturation targets" OR "saturation targeting" OR "saturation targeted" OR “target saturation” OR “oxygen saturation” OR “O2 saturation”) OR AB(Target OR flow OR “molecular size” OR “molecular sizes” OR “infection control” OR “infection prevention” OR “prevent infection” OR “control infection” OR heated OR heat OR heating OR humidified OR humidification OR humidifier OR humidifiers OR “heat moisture exchanger” OR ((Controlled OR non-controlled OR uncontrolled) AND (FiO2 OR “fractional inspired oxygen”)) OR ((Monitor OR monitoring) AND (continuous OR intermittent OR standard OR timing OR time OR frequency)) OR oximetry OR oximetries OR “oxygen monitoring” OR “oxygen monitor” OR “monitoring oxygen” OR “monitor oxygen” OR “transcutaneous oxygen” OR SpO2 OR “non-invasive monitoring” OR “non-invasive monitor” OR “non-invasive monitors” OR “noninvasive monitoring” OR “noninvasive monitor” OR “noninvasive monitors” OR "saturation target" OR "saturation targets" OR "saturation targeting" OR "saturation targeted" OR “target saturation” OR “oxygen saturation” OR “O2 saturation”) OR MH "Nebulizers and Vaporizers" OR MH "Oximetry+"

S4 TI(“sentinel event” OR “sentinel events” OR “critical incident” OR “critical incidents” OR “critical event” OR “critical events” OR “adverse events” OR “adverse event” OR death OR deaths OR fatality OR fatalities OR mortality OR mortalities OR survival OR survivals OR “Patient comfort” OR “comfort care” OR “length of stay” OR “length of hospital stay” OR LOS OR discharge OR discharged OR discharges OR “Cognitive outcomes” OR “cognitive outcome” OR “cognitive activity” OR “cognitive activities” OR “cognitive function” OR “cognitive functioning” OR ((device OR devices OR cannula OR cannulae OR mask OR masks) AND (selection OR selected OR select OR selects OR selecting OR choose OR chose OR choosing OR chosen OR choice OR choices OR option OR options OR decide OR decides OR decided OR deciding OR decision OR Flow OR occlusive OR occlusion OR fit OR fits OR fitted OR limit OR limits)) OR Cost OR costs OR economic OR economics OR financial OR financing OR financed OR finance OR price OR pricing) OR AB(“sentinel event” OR “sentinel events” OR “critical incident” OR “critical incidents” OR “critical event” OR “critical events” OR “adverse events” OR “adverse event” OR death OR deaths OR fatality OR fatalities OR mortality OR mortalities OR survival OR survivals OR “Patient comfort” OR “comfort care” OR “length of stay” OR “length of hospital stay” OR LOS OR discharge OR discharged OR discharges OR “Cognitive outcomes” OR “cognitive outcome” OR “cognitive activity” OR “cognitive activities” OR “cognitive function” OR “cognitive functioning” OR ((device OR devices OR cannula OR cannulae OR mask OR masks) AND (selection OR selected OR select OR selects OR selecting OR choose OR chose OR choosing OR chosen OR choice OR choices OR option OR options OR decide OR decides OR decided OR deciding OR decision OR Flow OR occlusive OR occlusion OR fit OR fits OR fitted OR limit OR limits)) OR Cost OR costs OR economic OR economics OR financial OR financing OR financed OR finance OR price OR pricing) OR MW “MO” OR MH "Mortality" OR MH "Length of Stay" OR MH "Patient Discharge+" OR MH "Costs and Cost Analysis+"

S5 S1 AND S2 AND S3 AND S4

S6 S5 NOT ((MH "Child+" OR MH "Infant+" OR MH "Adolescence+") NOT MH "Adult+")

S7 S6 NOT (MH "Animals+" NOT MH "Human")

S8 S7 NOT PT (“Commentary” OR “Editorial” OR “Interview” OR “Letter” OR “Review”)

S9 S8 AND LA English

Scopus via Scopus.com/

#1 TITLE-ABS(Hypoxemia OR hypoxaemia OR anoxia OR anoxemia OR hypoxia OR hypoxic OR ((Deficiency OR deficiencies OR low) AND (oxygen OR O2 OR PaO2 OR pO2)) OR ((“carbon dioxide” OR CO2 OR PaCO2 OR pCO2) AND (retention OR retained OR retaining OR retain)) OR ((“cardiac arrest” OR “cardiac arrests” OR “heart arrest” OR “heart arrests” OR “cardiopulmonary arrest” OR “cardiopulmonary arrests” OR asystole OR asystoles OR “traumatic brain injury” OR “traumatic brain injuries” OR “brain trauma” OR “brain traumas” OR TBI OR TBIs OR “traumatic encephalopathy” OR “traumatic encephalopathies” OR stroke OR strokes OR “brain ischemia” OR “intracranial hemorrhage” OR “intracranial hemorrhages” OR “cerebral hemorrhage” OR “cerebral hemorrhages” OR apoplexy OR neurological OR neurologic OR Immunocompromised OR immunosuppressed OR immunosuppression OR ((impaired OR compromised OR suppressed OR deficiency OR deficiencies OR weak OR weakened OR low) AND (“immune system” OR “immune systems”)) OR postoperative OR “post-operative”) AND (“critical care” OR “critically ill” OR “critical illness”)))

#2 TITLE-ABS(“Supplemental oxygen” OR “oxygen therapy” OR “oxygen therapies” OR oxygenation OR “oxygen delivery” OR “oxygen target” OR “oxygen targets” OR “O2 target” OR “O2 targets” OR “oxygen level” OR “oxygen levels” OR FiO2 OR “inspired oxygen fraction” OR “fractional inspired oxygen” OR “oxygen saturation” OR “O2 saturation” OR “Nasal cannula” OR “nasal cannulae” OR Oxymask OR “oxygen mask” OR “oxygen masks” OR HFNC OR HHFNC OR “simple mask” OR “simple masks” OR “RAM cannula” OR “RAM cannulae” OR “venturi mask” OR “venturi masks” OR “oxygen hood” OR “oxygen hoods” OR “tot huts” OR “tot hut” OR “care cube” OR “care cubes” OR “oxygen tent” OR “oxygen tents” OR “non-rebreather mask” OR “non-rebreather masks” OR “aerosol mask” OR “aerosol masks” OR “mist tent” OR “mist tents” OR (oxygen AND (incubator OR incubators OR isolette OR isolettes)) OR “low flow oxygen delivery” OR “cool mist” OR “oxygen delivery device” OR “oxygen delivery devices”)

#3 TITLE-ABS(Target OR flow OR “molecular size” OR “molecular sizes” OR “infection control” OR “infection prevention” OR “prevent infection” OR “control infection” OR heated OR heat OR heating OR humidified OR humidification OR humidifier OR humidifiers OR “heat moisture exchanger” OR ((Controlled OR non-controlled OR uncontrolled) AND (FiO2 OR “fractional inspired oxygen”)) OR ((Monitor OR monitoring) AND (continuous OR intermittent OR standard OR timing OR time OR frequency)) OR oximetry OR oximetries OR “oxygen monitoring” OR “oxygen monitor” OR “monitoring oxygen” OR “monitor oxygen” OR “transcutaneous oxygen” OR SpO2 OR “non-invasive monitoring” OR “non-invasive monitor” OR “non-invasive monitors” OR “noninvasive monitoring” OR “noninvasive monitor” OR “noninvasive monitors” OR "saturation target" OR "saturation targets" OR "saturation targeting" OR "saturation targeted" OR “target saturation” OR “oxygen saturation” OR “O2 saturation”)

#4 TITLE-ABS(“sentinel event” OR “sentinel events” OR “critical incident” OR “critical incidents” OR “critical event” OR “critical events” OR “adverse events” OR “adverse event” OR death OR deaths OR fatality OR fatalities OR mortality OR mortalities OR survival OR survivals OR “Patient comfort” OR “comfort care” OR “length of stay” OR “length of hospital stay” OR LOS OR discharge OR discharged OR discharges OR “Cognitive outcomes” OR “cognitive outcome” OR “cognitive activity” OR “cognitive activities” OR “cognitive function” OR “cognitive functioning” OR ((device OR devices OR cannula OR cannulae OR mask OR masks) AND (selection OR selected OR select OR selects OR selecting OR choose OR chose OR choosing OR chosen OR choice OR choices OR option OR options OR decide OR decides OR decided OR deciding OR decision OR Flow OR occlusive OR occlusion OR fit OR fits OR fitted OR limit OR limits)) OR Cost OR costs OR economic OR economics OR financial OR financing OR financed OR finance OR price OR pricing)

#5 #1 AND #2 AND #3 AND #4

#6 #5 AND NOT (TITLE-ABS-KEY(child OR children OR infant OR infants OR adolescent OR adolescents) AND NOT TITLE-ABS-KEY(adult OR adults))

#7 #6 AND NOT (TITLE-ABS-KEY(animal OR animals) AND NOT TITLE-ABS-KEY(human OR humans OR man OR woman OR men OR women))

#8 #7 AND ( EXCLUDE ( DOCTYPE , "ed" ) OR EXCLUDE ( DOCTYPE , "le" ) OR EXCLUDE ( DOCTYPE , "re" ) )

#9 #8 AND ( LIMIT-TO ( LANGUAGE , "English" )