

# **Vaccine uptake in the general population**

**Search strategies**

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*Search strategies*

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# 1 Scoping search strategies

## Scoping searches

Scoping searches were undertaken on the following websites and databases (listed in alphabetical order) in February 2019 to provide information for scope development and project planning. Browsing or simple search strategies were employed.

Guidelines/website	Systematic review/economic evaluations
Audit Commission (archived site)	Campbell Collaboration
Canadian Medical Association Infobase	Cochrane Database of Systematic Reviews (CDSR)
Canadian Paediatric Society	Database of Abstracts of Reviews of Effects (DARE) – last updated April 2015
Care Quality Commission	Health Technology Assessment (HTA) Database – last updated October 2016
Core Outcome Measures in Effectiveness Trials (COMET)	NHS Economic Evaluation Database (NHS EED) – last updated April 2015
Cross Borders Patient Registries Initiative (PARENT)	NIHR Health Technology Assessment Programme
Cure Together	NIHR Health Services and Delivery Research (HS&DR) Programme
Department of Health & Social Care	PROSPERO
European Centre for Disease Prevention and Control	TRIP Database
General Medical Council	
Guidelines & Audit Implementation Network (GAIN)	
Guidelines International Network (GIN)	
Health and Social Care Information Centre	
Health Foundation	
Healthcare Quality Improvement Partnership	
Healthtalk Online	
International Guideline Library	
Joint Committee on Vaccination and Immunisation	
Map of Medicine	
Medicines and Healthcare Products Regulatory Agency (MHRA)	
National Audit Office	
National Clinical Audit and Patient Outcomes Programme	
National Health and Medical Research Council (Australia)	
National Institute for Health and Care Excellence (NICE) - published & in development guidelines	
National Prescribing Centre	
National Quality Board	
National Voices	
NHS Choices	
NHS Digital	
NHS England	
NHS Quality Improvement Scotland	
NHS Scotland	
NICE Clinical Knowledge Summaries (CKS)	

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Guidelines/website	Systematic review/economic evaluations
<p>NICE Evidence Search  Office for National Statistics  Patient Experience Library  Patient UK  Patients Like Me  PatientVoices  PCORNet  Public Health England  Office for National Statistics  Royal College of General Practitioners  Royal College of Midwives  Royal College of Nursing  Royal College of Obstetricians and Gynaecologists  Royal College of Paediatrics and Child Health  Royal College of Physicians  Scottish Government  Scottish Intercollegiate Guidelines Network (SIGN)  Treato  UK Data Service  UK National Statistics  UK Research and Innovation  US National Guidelines Clearinghouse  Welsh Government  World Health Organisation (WHO)  YouthHealthTalk</p>	

## Main searches

Bibliographic databases searched for the guideline

- APA PsycInfo (Ovid)
- Applied Social Sciences Index and Abstracts – ASSIA (Proquest)
- British Nursing Index – BNI (Proquest)
- Cochrane Database of Systematic Reviews – CDSR (Wiley)
- Cochrane Central Register of Controlled Trials – CENTRAL (Wiley)
- Database of Abstracts of Reviews of Effects – DARE (CDSR)
- EMBASE (Ovid)
- EMCARE (Ovid)
- ERIC (Proquest)
- Health Management Information Consortium - HMIC (OVID)
- MEDLINE (Ovid)
- MEDLINE Epub Ahead of Print (Ovid)
- MEDLINE In-Process (Ovid)
- Sociological Abstracts (Proquest)

## Identification of evidence for review questions

A NICE information specialist conducted the literature searches for the evidence reviews. The searches were originally run between November 2019 and February 2021. The searches were updated in April 2021.

The principal search strategy was developed in MEDLINE (Ovid interface) and adapted, as appropriate, for use in the other sources listed in the protocol, taking into account their size, search functionality and subject coverage.

The MEDLINE strategies below were quality assured (QA) by trained NICE information specialist. All translated search strategies were peer reviewed to ensure their accuracy. Both procedures were adapted from the [2016 PRESS Checklist](#).

The search results were managed in EPPI-Reviewer v5. Duplicates were removed in EPPI-R5 using a two-step process. First, automated deduplication is performed using a high-value algorithm. Second, manual deduplication is used to assess 'low-probability' matches. All decisions made for the review can be accessed via the deduplication history.

English language limits were applied in adherence to standard NICE practice and the review protocol.

The limit to remove animal studies in the searches was the standard NICE practice, which has been adapted from: Dickersin, K., Scherer, R., & Lefebvre, C. (1994). [Systematic Reviews: Identifying relevant studies for systematic reviews](#). *BMJ*, 309(6964), 1286.

## 2 Review question search strategies

### Review Question 1

1.1 What are the most effective interventions for identifying and recording a person's vaccination eligibility and status?

1.2 What are the barriers to, and facilitators for, identifying and recording a person's vaccination eligibility and status (including but not limited to acceptability, why interventions work and why there is variability)?

**Table 1: search strategy**

Medline Strategy, searched 22 <sup>nd</sup> November 2019	
Database: Ovid MEDLINE(R) <1946 to November 21 , 2019>	
Search Strategy:	
1	Diphtheria/
2	diphtheria*.tw.
3	Tetanus/
4	(tetanus or tetani).tw.
5	Whooping Cough/
6	(pertuss* or "whooping cough").tw.
7	Haemophilus influenzae type b/
8	("Haemophilus influenza* type b" or "Hemophilus influenza* type b" or hib).tw.
9	Hepatitis B/
10	"hepatitis b".tw.
11	exp Poliomyelitis/
12	(Polio* or (infantile adj1 paralysis)).
13	exp Pneumococcal Infections/
14	(Pneumococcal adj4 (disease* or infection*)).tw.
15	(streptococcus pneumoniae adj4 Infection*).tw.
16	exp Meningococcal Infections/
17	(Meningococcal adj4 (disease* or infection*)).tw
18	Rotavirus Infections/ or Rotavirus/
19	rotavirus.tw.
20	Measles/
21	(measles or rubeola).tw.
22	Mumps/
23	(mumps or (epidemic adj2 (parotitides or parotitis))).tw.
24	Rubella/ or Rubella virus/
25	(rubella or ((german or "three day") adj2 measles*)).tw.
26	human papillomavirus 16/ or human papillomavirus 18/ or exp papillomavirus Infections/ or exp human papillomavirus 11/
27	(hvp 16 or "hvp-16" or "human papillomavirus 16" or "human papillomavirus type 16" or hvp 18 or "hvp-18" or "human papillomavirus 18" or "human papillomavirus type 18" or hvp 11 or "hvp-11" or "human papillomavirus 11" or "human papillomavirus type 11" or hvp 11 or "hvp-11" or "human papillomavirus 11" or "human papillomavirus type 11").tw.
28	Condylomata Acuminata/
29	(condyloma* adj1 acuminat*).tw.
30	((genital or venereal) adj2 wart*).tw.
31	exp Herpes Zoster/
32	(shingles or herpes zoster or zona).tw.
33	or/1-32
34	exp Vaccination/
35	Vaccines/ or exp bacterial vaccines/ or cancer vaccines/ or exp toxoids/ or exp vaccines combined/ or exp viral vaccines/
36	exp Immunization programs/
37	vaccin*.tw.
38	exp Immunization/
39	(immunis* or immuniz*).tw.
40	(immunologic* adj4 (sensitiz* or sensitiz* or stimulation*)).tw.



**Medline Strategy, searched 22<sup>nd</sup> November 2019**

**Database: Ovid MEDLINE(R) <1946 to November 21 , 2019>**

**Search Strategy:**

41 (immunostimul\* or variolation\*).tw.  
42 or/34-41  
43 33 and 42  
44 exp Medical Records/  
45 ((record\* or document\* or confirm\* or evidence\* or proof or register\*) adj2 (method\* or process\* or scheme\* or intervention\* or protocol\* or procedure\* or practice\* or system\*) adj2 (vaccin\* or immuni\*)).tw.  
46 ("personal child health record\*" or "pchr\*" or "red book\*" or "e-red book\*" or "e red book\*" or "electronic red book\*").tw.  
47 Data Accuracy/  
48 ((data or information) adj4 (accura\* or inaccura\* or qualit\* or correct\* or incorrect\*)).tw.  
49 Information Dissemination/  
50 ((data or information) adj4 (distrib\* or shar\* or disseminat\* or exchang\* or integrat\*)).tw.  
51 "Information Storage and Retrieval"/  
52 Classification/  
53 ((data or information) adj4 (link\* or stor\* or classifi\* or misclassif\* or code\* or coding\*)).tw.  
54 or/44-53  
55 Education/ or exp InService training/ or exp Education,professional/ or learning/  
56 (train\* or educ\* or learn\* or skill\* or coach\* or mentor\*).tw.  
57 55 or 56  
58 (record\* or code\* or coding or accurat\* or inaccura\* or classifi\* or misclassif\* or correct\* or incorrect\*).tw.  
59 57 and 58  
60 Health Information Systems/  
61 ("child health information service" or "chis").tw.  
62 eligibility determination/  
63 ((eligibil\* or ineligibil\* or status or document\* or identif\* or verif\* or history) adj4 (vaccin\* or immunis\* or immuniz\*)).tw.  
64 or/60-63  
65 Algorithms/  
66 (online\* or on-line\* or internet\* or www or web or website\* or webpage\* or portal or search engine\*).tw.  
67 algorithm\*.tw.  
68 or/65-67  
69 (eligibil\* or ineligibil\* or identif\* or status).tw.  
70 68 and 69  
71 Mobile Applications/  
72 ((mobile or electronic\* or digital\* or device\* or software\*) adj3 application\*).tw.  
73 71 or 72  
74 54 or 59 or 64 or 70 or 73  
75 43 and 74  
76 animals/ not humans/  
77 75 not 76  
78 limit 77 to english language/  
79 limit 78 to ed=19900101-20191122  
80 afghanistan/ or exp africa/ or albania/ or andorra/ or antarctic regions/ or argentina/ or exp asia, central/ or exp asia, northern/ or exp asia, southeastern/ or exp atlantic islands/ or bahrain/ or bangladesh/ or Bhutan/ or bolivia/ or borneo/ or "bosnia and Herzegovina"/ or brazil/ or bulgaria/ or exp central america/ or exp china/ or colombia/ or "Commonwealth of Independent States"/ or croatia/ or "Democratic People's Republic of Korea"/ or

**Medline Strategy, searched 22<sup>nd</sup> November 2019**

**Database: Ovid MEDLINE(R) <1946 to November 21 , 2019>**

**Search Strategy:**

ecuador/ or gibraltar/ or guyana/ or exp india/ or indonesia/ or iran/ or iraq/ or jordan/ or kosovo/ or kuwait/ or lebanon/ or liechtenstein/ or macau/ or "macedonia (republic)"/ or exp melanesia/ or moldova/ or monaco/ or mongolia/ or montenegro/ or nepal/ or Netherlands Antilles/ or New Guinea/ or oman/ or pakistan/ or paraguay/ or peru/ or philippines/ or qatar/ or "republic of Belarus"/ or romania/ or exp russia/ or saudi arabia/ or serbia/ or sri lanka/ or suriname/ or syria/ or taiwan/ or exp transcaucasia/ or ukraine/ or uruguay/ or united arab emirates/ or exp ussr/ or venezuela/ or yemen/

81 australasia/ or exp australia/ or austria/ or exp Baltic States/ or belgium/ or exp canada/ or chile/ or czech republic/ or europe/ or European Union/ or exp france/ or exp germany/ or greece/ or hungary/ or ireland/ or Israel/ or exp italy/ or exp japan/ or korea/ or luxembourg/ or mexico/ or netherlands/ or new zealand/ or north america/ or poland/ or portugal/ or exp "republic of korea"/ or exp "Scandinavian and Nordic Countries"/ or slovakia/ or slovenia/ or spain/ or switzerland/ or turkey/ or exp united kingdom/ or exp united states/ or "Organisation for Economic Co-Operation and Development"/ or Developed Countries/

82 80 not (80 and 81)

83 79 not 82

84 Observational Studies as Topic/

85 Observational Study/

86 Epidemiologic Studies/

87 exp Cohort Studies/

88 Controlled Before-After Studies/

89 Interrupted Time Series Analysis/

90 Comparative Study.pt.

91 (cohort adj (study or studies)).tw.

92 cohort analy\$.tw.

93 (follow-up adj (study or studies)).tw.

94 (observational adj (study or studies)).tw.

95 longitudinal.tw.

96 prospective.tw.

97 retrospective.tw.

98 or/84-97

99 Qualitative Research/

100 Nursing Methodology Research/

101 Interview.pt.

102 exp Interviews as Topic/

103 Questionnaires/

104 Narration/

105 Health Care Surveys/

106 (qualitative\$ or interview\$ or focus group\$ or questionnaire\$ or narrative\$ or narration\$ or survey\$).tw.

107 (ethno\$ or emic or etic or phenomenolog\$ or grounded theory or constant compar\$ or (thematic\$ adj4 analys\$) or theoretical sampl\$ or purposive sampl\$).tw.

108 (hermeneutic\$ or heidegger\$ or husser\$ or colaizzi\$ or van kaam\$ or van manen\$ or giorgi\$ or glaser\$ or strauss\$ or ricoeur\$ or spiegelberg\$ or merleau\$).tw.

109 (metasynthes\$ or meta-synthes\$ or metasummar\$ or meta-summar\$ or metastud\$ or meta-stud\$ or metathem\$ or meta-them\$).tw.

110 "critical interpretive synthes\*".tw.

111 (realist adj (review\* or synthes\*)).tw.

112 (noblit and hare).tw.

113 (meta adj (method or triangulation)).tw.

114 (CERQUAL or CONQUAL).tw.

115 ((thematic or framework) adj synthes\*).tw.

**Medline Strategy, searched 22<sup>nd</sup> November 2019**  
**Database: Ovid MEDLINE(R) <1946 to November 21 , 2019>**  
**Search Strategy:**

116 or/99-115  
117 randomized controlled trial.pt.  
118 randomi?ed.mp.  
119 placebo.mp.  
120 or/117-119  
121 (MEDLINE or pubmed).tw.  
122 systematic review.tw.  
123 systematic review.pt.  
124 meta-analysis.pt.  
125 intervention\$.ti.  
126 or/121-125  
127 98 or 116 or 120 or 126  
128 83 and 127

## Review Question 2

What are the barriers to, and facilitators for, increasing the uptake of routine vaccines? (Qualitative review)

What are the most effective interventions for increasing the uptake of routine vaccines? (Quantitative reviews)

**Table 2: search strategy Qualitative review**

**Medline Strategy, searched 31<sup>st</sup> December 2019**  
**Database: Ovid MEDLINE(R) <1946 to December 30, 2019>**  
**Search Strategy:**

1 Diphtheria/  
2 diphtheria\*.tw.  
3 Tetanus/  
4 (tetanus or tetani).tw.  
5 Whooping Cough/  
6 (pertuss\* or "whooping cough").tw.  
7 Haemophilus influenzae type b/  
8 ("Haemophilus influenza\* type b" or "Hemophilus influenza\* type b" or hib).tw.  
9 Hepatitis B/  
10 "hepatitis b".tw.  
11 exp Poliomyelitis/  
12 (Polio\* or (infantile adj1 paralysis)).tw.  
13 exp Pneumococcal Infections/  
14 (Pneumococcal adj4 (disease\* or infection\*)).tw.  
15 (streptococcus pneumoniae adj4 Infection\*).tw.  
16 exp Meningococcal Infections/  
17 (Meningococcal adj4 (disease\* or infection\*)).tw.  
18 Rotavirus Infections/ or Rotavirus/  
19 rotavirus.tw.  
20 Measles/  
21 (measles or rubeola or mmr).tw.  
22 Mumps/

**Medline Strategy, searched 31<sup>st</sup> December 2019**

**Database: Ovid MEDLINE(R) <1946 to December 30, 2019>**

**Search Strategy:**

- 23 (mumps or (epidemic adj2 (parotitides or parotitis))).tw.
- 24 Rubella/ or Rubella virus/
- 25 (rubella or ((german or "three day") adj2 measles\*).tw.
- 26 human papillomavirus 16/ or human papillomavirus 18/ or exp papillomavirus Infections/ or exp human papillomavirus 11/
- 27 (hpv or papillomavirus).tw.
- 28 Condylomata Acuminata/
- 29 (condyloma\* adj1 acuminat\*).tw.
- 30 ((genital or venereal) adj2 wart\*).tw.
- 31 exp Herpes Zoster/
- 32 (shingles or herpes zoster or zona).tw.
- 33 or/1-32
- 34 exp Vaccination/
- 35 Vaccines/ or exp bacterial vaccines/ or cancer vaccines/ or exp toxoids/ or exp vaccines combined/ or exp viral vaccines/
- 36 exp Immunization programs/
- 37 vaccin\*.tw.
- 38 exp Immunization/
- 39 (immunis\* or immuniz\*).tw.
- 40 (immunologic\* adj4 (sensitiz\* or sensitis\* or stimulation\*)).tw.
- 41 (immunostimul\* or variolation\*).tw.
- 42 or/34-41
- 43 33 and 42
- 44 exp Diphtheria toxoid/ or exp tetanus toxoid/ or Haemophilus Vaccines/ or meningococcal Vaccines/ or exp Pertussis Vaccine/ or exp Streptococcal vaccines/ or exp Vaccines Combined/ or exp Measles vaccine/ or exp Mumps Vaccine/ or exp papillomavirus vaccines/ or exp Poliovirus Vaccines/ or Rotavirus Vaccines/ or exp Rubella Vaccine/ or Hepatitis B vaccines/ or Herpes Zoster Vaccine/
- 45 43 or 44
- 46 (barrier\* or facilitat\* or hinder\* or block\* or obstacle\* or restrict\* or restrain\* or obstruct\* or inhibit\* or impede\* or delay\* or constrain\* or hindrance or enhance\* or encourag\* or support\* or promot\* or optimiz\* or optimis\* or adher\* or motivat\* or incentive\* or persuad\* or persuasion or intend\* or intention or counsel\* or hesitan\*).tw.
- 47 (uptake or ((increas\* or improv\* or rais\* or higher) adj4 (rate\* or immuni\* or vaccin\* or complian\*))).tw.
- 48 Attitude/
- 49 Attitude to health/
- 50 Health Knowledge, Attitudes, Practice/
- 51 exp "Treatment Adherence and Compliance"/
- 52 (accept\* or compli\* or particip\* or adher\* or nonadher\* or non-adher\* or cooperat\* or co-operat\* or dropout\* or drop-out\* or empower\* or engage\* or involve\*).tw.
- 53 exp patients/px
- 54 (experience\* or belief\* or stress\* or emotion\* or anx\* or fear\* or concern\* or uncertain\* or unsure or thought\* or feeling\* or felt\* or view\* or opinion\* or perception\* or perspective\* or attitud\* or satisfact\* or know\* or understand\* or aware\* or sad\*).tw.
- 55 stress, psychological/
- 56 adaptation, psychological/
- 57 emotions/
- 58 anxiety/
- 59 fear/
- 60 sadness/
- 61 exp Health Services Accessibility/
- 62 (access\* or availab\* or usab\* or convenien\*).tw.

**Medline Strategy, searched 31<sup>st</sup> December 2019**

**Database: Ovid MEDLINE(R) <1946 to December 30, 2019>**

**Search Strategy:**

63 Healthcare disparities/  
64 (equit\* or inequit\* or equal\* or inequali\* or fair\* or disparit\* or variab\* or variation or varied).tw.  
65 exp Socioeconomic factors/  
66 (socioeconomic adj1 (factor\* or status)).tw.  
67 (poverty or poor\* or rich\* or low income or low-income or middle income or middle-income or high income or high-income).tw.  
68 ((social or middle or low\* or working or upper) adj1 class\*).tw.  
69 Health Plan Implementation/ or Implementation Science/  
70 (implement\* or feasibil\* or practical\* or practicabil\* or suitab\* or viab\* or achievab\*).tw.  
71 Culture/ or Cultural Characteristics/ or Cultural Diversity/ or Superstitions/ or Taboo/  
72 ((cultur\* or custom\*) adj4 (belief\* or believe\*)).tw.  
73 Religion/ or Buddhism/ or Christianity/ or Hinduism/ or Islam/ or Judaism/  
74 (religio\* or buddhis\* or christian\* or hindu\* or islam\* or muslim\* or judaism or jew\*).tw.  
75 or/48-74  
76 46 or 47 or 75  
77 45 and 76  
78 animals/ not humans/  
79 77 not 78  
80 limit 79 to ed=19900101-20191231  
81 limit 80 to english language/  
82 afghanistan/ or exp africa/ or albania/ or andorra/ or antarctic regions/ or argentina/ or exp asia, central/ or exp asia, northern/ or exp asia, southeastern/ or exp atlantic islands/ or bahrain/ or bangladesh/ or Bhutan/ or bolivia/ or borneo/ or "bosnia and Herzegovina"/ or brazil/ or bulgaria/ or exp central america/ or exp china/ or colombia/ or "Commonwealth of Independent States"/ or croatia/ or "Democratic People's Republic of Korea"/ or ecuador/ or gibraltar/ or guyana/ or exp india/ or indonesia/ or iran/ or iraq/ or jordan/ or kosovo/ or kuwait/ or lebanon/ or liechtenstein/ or macau/ or "macedonia (republic)"/ or exp melanesia/ or moldova/ or monaco/ or mongolia/ or montenegro/ or nepal/ or Netherlands Antilles/ or New Guinea/ or oman/ or pakistan/ or paraguay/ or peru/ or philippines/ or qatar/ or "republic of Belarus"/ or romania/ or exp russia/ or saudi arabia/ or serbia/ or sri lanka/ or suriname/ or syria/ or taiwan/ or exp transcaucasia/ or ukraine/ or uruguay/ or united arab emirates/ or exp ussr/ or venezuela/ or yemen/  
83 australasia/ or exp australia/ or austria/ or exp Baltic States/ or belgium/ or exp canada/ or chile/ or czech republic/ or europe/ or European Union/ or exp france/ or exp germany/ or greece/ or hungary/ or ireland/ or Israel/ or exp italy/ or exp japan/ or korea/ or luxembourg/ or mexico/ or netherlands/ or new zealand/ or north america/ or poland/ or portugal/ or exp "republic of korea"/ or exp "Scandinavian and Nordic Countries"/ or slovakia/ or slovenia/ or spain/ or switzerland/ or turkey/ or exp united kingdom/ or exp united states/ or "Organisation for Economic Co-Operation and Development"/ or Developed Countries/  
84 82 not (82 and 83)  
85 81 not 84  
86 Qualitative Research/  
87 Nursing Methodology Research/  
88 Interview.pt.  
89 exp Interviews as Topic/  
90 Questionnaires/  
91 Narration/  
92 Health Care Surveys/

Medline Strategy, searched 31 <sup>st</sup> December 2019	
Database: Ovid MEDLINE(R) <1946 to December 30, 2019>	
Search Strategy:	
93	(qualitative\$ or interview\$ or focus group\$ or questionnaire\$ or narrative\$ or narration\$ or survey\$).tw.
94	(ethno\$ or emic or etic or phenomenolog\$ or grounded theory or constant compar\$ or (thematic\$ adj4 analys\$) or theoretical sampl\$ or purposive sampl\$).tw.
95	(hermeneutic\$ or heidegger\$ or husser\$ or colaizzi\$ or van kaam\$ or van manen\$ or giorgi\$ or glaser\$ or strauss\$ or ricoeur\$ or spiegelberg\$ or merleau\$).tw.
96	(metasynthes\$ or meta-synthes\$ or metasummar\$ or meta-summar\$ or metastud\$ or meta-stud\$ or metathem\$ or meta-them\$).tw.
97	"critical interpretive synthes*".tw.
98	(realist adj (review* or synthes*)).tw.
99	(noblit and hare).tw.
100	(meta adj (method or triangulation)).tw.
101	(CERQUAL or CONQUAL).tw.
102	((thematic or framework) adj synthes*).tw.
103	or/86-102
104	85 and 103

### Quantitative reviews

An initial search to find systematic reviews identifying interventions to improve uptake of routine vaccinations was run.

**Table 3: search strategy Quantitative reviews; Systematic reviews**

Medline Strategy, searched 23 <sup>rd</sup> March 2020	
Database: Ovid MEDLINE(R) <1946 to March 20 2020>	
Search Strategy:	
1	exp Vaccination/
2	exp vaccines/
3	exp Immunization programs/
4	vaccin*.tw.
5	exp Immunization/
6	(immunis* or immuniz*).tw.
7	(immunologic* adj4 (sensitiz* or sensitiz* or stimulation*)).tw.
8	(immunostimul* or variolation*).tw.
9	or/1-8
10	(uptake or ((increas* or improv* or rais* or higher) adj8 (rate* or immuni* or vaccin* or complian*))).tw.
11	9 and 10
12	(MEDLINE or pubmed).tw.
13	systematic review.tw.
14	systematic review.pt.
15	meta-analysis.pt.
16	intervention\$.ti.
17	or/12-16
18	11 and 17
19	animals/ not humans/
20	18 not 19
21	limit 20 to english language

**Medline Strategy, searched 23<sup>rd</sup> March 2020**  
**Database: Ovid MEDLINE(R) <1946 to March 20 2020>**  
**Search Strategy:**

22 limit 21 to ed=19900101-20200323

Focussed searches were run to identify evidence on themed groups of interventions between June 2020 and February 2021 to supplement systematic reviews retrieved by the overarching systematic review search. Searches were limited to studies in the English language published after 1990.

**Table 4: Population terms used for all searches**

Medline Strategy	
1	Diphtheria/
2	diphtheria*.tw.
3	Tetanus/
4	(tetanus or tetani).tw.
5	Whooping Cough/
6	(pertuss* or "whooping cough").tw.
7	Haemophilus influenzae type b/
8	("Haemophilus influenza* type b" or "Hemophilus influenza* type b" or hib).tw.
9	Hepatitis B/
10	"hepatitis b".tw.
11	exp Poliomyelitis/
12	(Polio* or (infantile adj1 paralysis)).tw.
13	exp Pneumococcal Infections/
14	(Pneumococcal adj4 (disease* or infection*)).tw.
15	(streptococcus pneumoniae adj4 Infection*).tw.
16	exp Meningococcal Infections/
17	(Meningococcal adj4 (disease* or infection*)).tw.
18	Rotavirus Infections/ or Rotavirus/
19	rotavirus.tw.
20	Measles/
21	(measles or rubeola or mmr).tw.
22	Mumps/
23	(mumps or (epidemic adj2 (parotitides or parotitis))).tw.
24	Rubella/ or Rubella virus/
25	(rubella or ((german or "three day") adj2 measle*)).tw.
26	human papillomavirus 16/ or human papillomavirus 18/ or exp papillomavirus Infections/ or exp human papillomavirus 11/
27	(hpv or papillomavirus).tw.
28	Condylomata Acuminata/
29	(condyloma* adj1 acuminat*).tw.
30	((genital or venereal) adj2 wart*).tw.
31	exp Herpes Zoster/
32	(shingles or herpes zoster or zona).tw.
33	or/1-32
34	exp Vaccination/
35	Vaccines/ or exp bacterial vaccines/ or cancer vaccines/ or exp toxoids/ or exp viral vaccines/
36	exp Immunization programs/
37	vaccin*.tw.



Medline Strategy	
38	exp Immunization/
39	(immunis* or immuniz*).tw.
40	(immunologic* adj4 (sensitiz* or sensitis* or stimulation*)).tw.
41	(immunostimul* or variolation*).tw.
42	or/34-41
43	33 and 42
44	exp Diphtheria toxoid/ or exp tetanus toxoid/ or Haemophilus Vaccines/ or meningococcal Vaccines/ or exp Pertussis Vaccine/ or exp Streptococcal vaccines/ or exp Vaccines Combined/ or exp Measles vaccine/ or exp Mumps Vaccine/ or exp papillomavirus vaccines/ or exp Poliovirus Vaccines/ or Rotavirus Vaccines/ or exp Rubella Vaccine/ or Hepatitis B vaccines/ or Herpes Zoster Vaccine/ (65237)
45	43 or 44

**Table 5 Reminder intervention terms**

Medline Strategy	
1.	Reminder Systems/
2.	(recall or remind* or prompt* or nudge).tw.
3.	(electronic* adj4 invit*).tw.
4.	Mobile Applications/
5.	exp Internet/
6.	exp Cell Phone/
7.	exp Computers, Handheld/
8.	(app or apps).ti,ab.
9.	(online or web or internet or digital*).ti.
10.	((online or web or internet or digital*) adj3 (based or application* or intervention* or program* or therap*)).ab.
11.	(phone* or telephone* or smartphone* or cellphone* or smartwatch*).ti.
12.	((phone* or telephone* or smartphone* or cellphone* or smartwatch*) adj3 (based or application* or intervention* or program* or therap*)).ab. (8053)
13.	(mobile health or mhealth or m-health or ehealth or e-health or emental or e-mental).ti.
14.	((mobile health or mhealth or m-health or ehealth or e-health or emental or e-mental) adj3 (based or application* or intervention* or program* or therap*)).ab.
15.	(mobile* adj3 (based or application* or intervention* or device* or technolog*)).ti,ab.
16.	text messaging/
17.	(text messag* or sms or short messag* service).tw.
18.	electronic mail/
19.	(email* or e-mail* or e mail* or electronic mail).tw.
20.	Correspondence as Topic/
21.	(letter* or correspondence or mail).tw.
22.	(iphone* or mobile phone*).tw.
23.	pamphlets/
24.	(pamphlet* or leaflet* or brochure*).tw.
25.	Posters as Topic/
26.	poster*.tw.
27.	(postcard* or post-card*).tw.
28.	or/1-27

**Filters used (see section 3)**

Geographic: OECD countries



Study Design: RCT, Systematic Reviews, Observational

**Table 6; Access Intervention terms**

Medline Strategy	
1.	exp Health Services Accessibility/
2.	(access* or available or availability or convenien* or opportuni*).tw.
3.	((out or extended) adj2 hour*).tw.
4.	(drop adj2 in).tw.
5.	Community health centers/
6.	((community or public or civic or communal or municipal) adj4 (setting* or venue* or locat* or building* or facilit* or clinic* or hall* or centre* or center* or space*)).tw.
7.	Pharmacies/
8.	((community or retail) adj4 pharmac*).tw.
9.	Prenatal Care/ or Perinatal care/ or Maternal Child Health centers/
10.	((prenatal or antenatal or pregnan*) adj4 (care or service* or clinic*)).tw.
11.	((drug or alcohol or specialist or dedicated or "substance abuse") adj4 (service* or clinic* or care)).tw.
12.	exp Community Mental Health Services/ or Substance Abuse Treatment Centers/
13.	Libraries/
14.	(library or libraries).tw.
15.	((child or children* or leisure or resource or day) adj4 (centre* or center*)).tw.
16.	schools/ or schools, nursery/
17.	(school* or nursery or nurseries or kindergarten* or "pre school*" or "play group*").tw.
18.	(walk adj1 in adj4 (centre* or center* or clinic* or service*)).tw.
19.	((extend* or weekend or early or evening or commuter) adj4 (clinic* or service* or appointment* or session*)).tw.
20.	("24 hour" or "twenty four hour*" or "all day" or "seven day" or "7 day").tw.
21.	exp Home Care Services/
22.	adult day care centers/ or exp child day care centers/ or Senior Centers/
23.	((home or domiciliary or day) adj4 (care or visit*)).tw.
24.	Self-Help Groups/
25.	((support or self-help) adj4 (group* or meeting*)).tw.
26.	Homes for the Aged/
27.	exp Nursing Homes/
28.	((residential or nursing or care) adj4 home*).tw.
29.	exp Education, Special/
30.	(special adj4 (education or school*)).tw.
31.	Inpatients/
32.	inpatient*.tw.
33.	Prisons/ or Prisoners/
34.	(prison* or jail).tw.
35.	(young adj4 (Offender* or detention)).tw.
36.	(youth adj4 (detention or custody)).tw.
37.	(juvenile adj4 (offender* or hall or detention)).tw.
38.	(HMYOI* or YOI* or STC* or "secure training centre*").tw.
39.	((secure or correction* or detention) adj4 (accommodation or care or home or centre* or center* or facilit*)).tw.
40.	exp "Emigrants and Immigrants"/
41.	((immigration or immigrant*) adj4 (removal or detention or detain* or accomodat* or hous* or home* or rent*)).tw.
42.	87 Mobile Health Units/
43.	88 ((mobile or outreach) adj4 (clinic* or unit* or service*)).tw.
44.	89 ("making every contact count" or MECC).tw.
45.	90 or/1-45

### Filters used (see section 3)

Geographic: OECD countries

Study Design: RCT, Systematic Reviews, Observational

**Table 7: Education Intervention Terms**

Medline Strategy
1. exp Communication/
2. ((Vaccin* or immuni*) adj4 (Communic* or messag* or listen* or negotiat* or persua* or dialogu* or conversation* or question* or discuss*)).tw.
3. ((universal or population or national* or public health or nationwide* or statewide* or countrywide* or citywide* or national* or nation wide* or state wide* or country wide* or city wide* or government*) adj4 (promotion* or campaign* or intervention* or toolkit* or strateg*)).tw.
4. (rais* adj2 awareness adj4 (promotion* or campaign* or intervention* or toolkit* or strateg*)).tw.
5. exp Consumer Health Information/
6. Social Media/
7. electronic mail/
8. Mobile Applications/
9. exp Internet/
10. exp Cell Phone/
11. exp Computers, Handheld/
12. Medical Informatics Applications/
13. Therapy, Computer-Assisted/
14. (app or apps).ti,ab.
15. (online or web or internet or digital*).ti.
16. ((online or web or internet or digital*) adj3 (based or application* or intervention* or program* or therap*)).ab.
17. (phone* or telephone* or smartphone* or cellphone* or smartwatch* or tablet*).ti.
18. ((phone* or telephone* or smartphone* or cellphone* or smartwatch or tablet*) adj3 (based or application* or intervention* or program* or therap*)).ab.
19. (mobile health or mhealth or m-health or ehealth or e-health or emental or e-mental).ti.
20. ((mobile health or mhealth or m-health or ehealth or e-health or emental or e-mental) adj3 (based or application* or intervention* or program* or therap*)).ab.
21. (mobile* adj3 (based or application* or intervention* or device* or technolog*)).ti,ab.
22. (twitter or tweet* or blog* or pinterest or instagram or facebook or snapchat).tw.
23. ((text or multimedia) adj messag*).tw.
24. (sms or whatsapp* or email* or "e-mail*" or "electronic mail*" or "e mail*").tw.
25. exp Mass Media/
26. (media or radio* or television* or tv* or broadcast* or podcast* or newspaper* or magazine* or display* or presentation*).tw.
27. Correspondence as Topic/
28. (correspond* or letter* or mail).tw.
29. Pamphlets/
30. (leaflet* or pamphlet* or booklet* or flyer* or brochure* or handout* or newsletter* or factsheet* or postcard* or banner* or bulletin*).tw.
31. ((print* or written*) adj4 (media or material*)).tw.
32. Health Promotion/
33. ((health or media) adj4 (campaign* or promot*)).tw.
34. Health Knowledge, Attitudes, Practice/
35. Advertising/
36. advert*.tw.
37. Posters as Topic/

### Medline Strategy

38. poster\*.tw.
39. Government Publications as Topic/
40. exp Education/
41. ((vaccin\* or immuni\*) adj4 (educ\* or teach\* or instruct\* or learn\* or "e-learn\*" or " e learn\*" or coach\* or train\* or aware\* or inform\*)).tw.
42. ((train\* or development\*) adj4 (inservice or staff or professional)).tw.
43. exp Interpersonal Relations/
44. Hospital Patient Relations/
45. Community Institutional Relations/
46. Community Networks/
47. ((communit\* or social) adj4 network\*).tw.
48. peer influence/
49. ((peer\* or family or families or friend\* or professional\* or GP\* or doctor\* or physician\* or nurse\* or "health visitor\*" or midwife or midwives or "social worker\*" or leader\* or community or communities or teacher\* or faith) adj4 (influence\* or pressure\* or recommend\* or advice or advise\* or led or support\* or educ\* or advocat\*)).tw.
50. Mentors/
51. (mentor\* or "role model\*").tw.
52. hotlines/
53. (champion\* or hotline\*).tw.
54. House calls/
55. ((house or home) adj4 (call\* or visit\*)).tw.
56. Self-Help Groups/
57. (group\* adj2 (support\* or self-help\*)).tw.
58. exp Treatment Refusal/
59. Choice Behavior/
60. (decision\* adj4 (making or support or aid\*)).tw.
61. exp Informed Consent/
62. (informed adj4 (consent or choice\* or decision\*)).tw.
63. ((vaccin\* or immuni\*) adj4 (hesitan\* or refus\* or trust\* or distrust\* or accept\* or confiden\* or reject\* or doubt\* or decline\*)).tw.

### Filters used (see section 3)

Geographic: OECD countries

Study Design: RCT

**Table 8: Infrastructure Intervention Terms**

### Medline Strategy

1. "Appointments and Schedules"/
2. (appointment\* or schedul\* or book\* or rebook\* or follow-up or follow up).tw.
3. "Organization and Administration"/
4. Health Planning/
5. "Delivery of Health Care"/og or "Delivery of Health Care"/st
6. Organizational Objectives/
7. Community Health Services/og or Community Health Services/st
8. ((service\* or system\* or team\* or practice\* or provider\*) adj4 (administ\* or organis\* or organiz\* or coordin\* or co ordin\* or co-ordin\* or logistic\* or plan\* or structur\*)).tw.
9. Statistics as Topic/
10. Data Collection/ or Datasets as Topic/ or Data Analysis/ or Data interpretation, Statistical/ or Data Management/ or Electronic Data Processing/
11. exp Clinical Audit/
12. Feedback/

### Medline Strategy

13. (data\* or audit\* or statistic\* or feedback or intelligence or dashboard\* or analytics or analysis).tw.
14. Quality Indicators, Health Care/
15. Quality Improvement/og or Quality Improvement/st
16. Quality Assurance, Healthcare/og or Quality Assurance, Healthcare/st
17. (qof\* or (quality adj4 (indicator\* or outcome\* or framework\*))).tw.
18. "Facility Design and Construction"/
19. Built Environment/
20. Architecture/
21. ((building\* or facilit\* or premises or office\* or room\* or surger\* or environment\* or clinic or clinics or setting\*) adj4 (design\* or construct\* or layout\* or configur\*)).tw.
22. "Treatment Adherence and Compliance"/ or Patient Compliance/
23. Motivation/
24. (incentive\* or disincentive\* or motivat\*).tw.
25. Punishment/
26. (punish\* or fine\* or penal\* or sanction\* or deter\* or discourage\*).tw.
27. Reward/
28. (reward\* or encourage\* or attract\* or reimburse\* or pay or payment).tw.
29. Reimbursement, Incentive/ or Physician Incentive Plans/
30. Mandatory Programs/
31. (mandat\* or compulsory or obligat\*).tw.
32. infrastructure\*.tw.

### Filters used (see section 3)

Geographic: OECD countries

Study Design: RCT

**Table 9: Acceptability Intervention Terms**

### Medline Strategy

1. acceptab\*.kw.
2. exp "Patient Acceptance of Health Care"/
3. exp Patient Satisfaction/
4. Choice Behavior/
5. (accept\* or prefer\* or option\* or choice\* or choose\* or chose\* or satisf\* or tolera\*).tw.
6. or/1-5
7. exp Drug Administration Routes/
8. ((subcutaneous\* or cutaneous\* or intravenous\* or inhal\* or nasal\* or intranasal\* or intramuscular\* or topical\* or oral\* or infus\* or intradermal\*) adj4 (administ\* or route\* or appli\* or dispens\* or deliver\* or method\*)).tw.
9. (inject\* or shot\* or jab\* or patch\* or liquid\* or drop\* or spray\* or needle\* or syringe\*).tw.
10. (dose\* or dosage or formulation\*).tw.
11. or/7-10
12. exp Physicians/
13. (doctor\* or gp\* or "general practitioner\*" or physician\*).tw.
14. exp Nurses/
15. (nurse\* or midwife or midwives).tw.
16. Nursing Assistants/
17. ((nurse or nursing) adj2 (aide\* or assistant\*)).tw.
18. ((healthcare or "health care") adj2 assistant\*).tw.
19. hca\*.tw.
20. Pharmacists/ or Pharmacy Technicians/

**Medline Strategy**

21. (pharmacist\* or (pharmacy adj2 technician\*)).tw.
22. or/12-21
23. 11 or 22
24. (uptake or ((increas\* or improv\* or rais\* or higher) adj8 (rate\* or immuni\* or vaccin\* or complian\*))).tw.
25. 23 and 24
26. 6 or 25

**Filters used (see section 3)**

Geographic: OECD countries

Study Design: RCT, Systematic Reviews, Observational

### 3 Study Design and Geographic Filters

**Table 10: Study design filters**

The study filters and limiting search strategies used as part of the literature searches are presented below.
<p><b>RCT</b></p> <p>1 randomized controlled trial.pt.                  2 randomi?ed.mp.                  3 placebo.mp.                  4 or/1-3</p> <p>Source:  <a href="#">McMaster Therapy – Medline</a> - “best balance of sensitivity and specificity” version.</p> <p>Haynes RB et al. (2005) <a href="#">Optimal search strategies for retrieving scientifically strong studies of treatment from Medline: analytical survey</a>. <i>BMJ</i>, 330, 1179-1183.</p>
<p><b>Systematic Review</b></p> <p>1 MEDLINE or pubmed).tw.                  2 systematic review.tw.                  3 systematic review.pt.                  4 meta-analysis.pt.                  5 intervention\$.ti.                  6 or/1-5</p> <p>Source:                  Lee, E. et al. (2012) <a href="#">An optimal search filter for retrieving systematic reviews and meta-analyses</a>. <i>BMC Medical Research Methodology</i>, 12(1), 51.</p> <p>In MEDLINE, the standard NICE modifications were used: pubmed.tw added; systematic review.pt added from MeSH update 2019.</p>
<p><b>Observational</b></p> <ol style="list-style-type: none"> <li>1. Observational Studies as Topic/</li> <li>2. Observational Study/</li> <li>3. Epidemiologic Studies/</li> <li>4. exp Cohort Studies/</li> <li>5. Controlled Before-After Studies/</li> <li>6. Interrupted Time Series Analysis/</li> <li>7. Comparative Study.pt.</li> <li>8. (cohort adj (study or studies)).tw.</li> <li>9. cohort analy\$.tw.</li> <li>10. (follow up adj (study or studies)).tw.</li> <li>11. (observational adj (study or studies)).tw.</li> <li>12. longitudinal.tw.</li> <li>13. prospective.tw.</li> <li>14. retrospective.tw.</li> <li>15. or/1-14</li> </ol> <p>Adapted from a NICE in house filter to exclude historically controlled studies, cross-sectional studies, case control studies and case-series.</p>
<p><b>OECD geographic filter</b></p> <p>1. afghanistan/ or exp africa/ or albania/ or andorra/ or antarctic regions/ or argentina/ or exp asia, central/ or exp asia, northern/ or exp asia, southeastern/ or exp atlantic islands/</p>

**The study filters and limiting search strategies used as part of the literature searches are presented below.**

or bahrain/ or bangladesh/ or Bhutan/ or bolivia/ or borneo/ or "bosnia and herzegovina"/ or brazil/ or bulgaria/ or exp central america/ or exp china/ or "commonwealth of independent states"/ or croatia/ or "democratic people's republic of korea"/ or ecuador/ or gibraltar/ or guyana/ or exp india/ or indonesia/ or iran/ or iraq/ or jordan/ or kosovo/ or kuwait/ or lebanon/ or liechtenstein/ or macau/ or "macedonia (republic)"/ or exp melanesia/ or moldova/ or monaco/ or mongolia/ or montenegro/ or nepal/ or netherlands antilles/ or new guinea/ or oman/ or pakistan/ or paraguay/ or peru/ or philippines/ or qatar/ or "republic of belarus"/ or romania/ or exp russia/ or saudi arabia/ or serbia/ or sri lanka/ or suriname/ or syria/ or taiwan/ or exp transcaucasia/ or ukraine/ or uruguay/ or united arab emirates/ or exp ussr/ or venezuela/ or yemen/

2. "organisation for economic co-operation and development"/

3. australasia/ or exp australia/ or austria/ or exp baltic states/ or belgium/ or exp canada/ or chile/ or czech republic/ or colombia/ or europe/ or exp france/ or exp germany/ or greece/ or hungary/ or ireland/ or israel/ or exp italy/ or exp japan/ or korea/ or luxembourg/ or mexico/ or netherlands/ or new zealand/ or north america/ or poland/ or portugal/ or exp "republic of korea"/ or exp "scandinavian and nordic countries"/ or slovakia/ or slovenia/ or spain/ or switzerland/ or turkey/ or exp united kingdom/ or exp united states/

4. european union/

5. developed countries/

6. or/2-5

7. 1 not 6

Source: Ayiku L, Levay P, Hudson T (2021) **The NICE OECD countries' geographic search filters: Part 1—methodology for developing the draft MEDLINE and Embase (Ovid) filters.** *Journal of the Medical Library Association.* Volume 109, Number 2: 258-266

## 4 Health Economics Search Strategies

### Economic evaluations and quality of life data

#### Sources searched to identify economic evaluations

- Econlit (Ovid)
- Embase (Ovid)
- HTA database (CRD)
- International HTA Database (INAHTA)
- MEDLINE (Ovid)
- MEDLINE In-Process (Ovid)
- NHS EED (Wiley)

A single search to identify economic evidence was run on 12th February 2020 and re run on 13th April 2021.

**Table 11: Economic evidence search**

Medline Strategy, searched 12 <sup>th</sup> February 2020	
Database: Ovid MEDLINE(R) <1946 to February 11 <sup>th</sup> 2020	
Search Strategy:	
1	Diphtheria/
2	diphtheria*.tw.
3	Tetanus/
4	(tetanus or tetani).tw.
5	Whooping Cough/
6	(pertuss* or "whooping cough").tw.
7	Haemophilus influenzae type b/
8	("Haemophilus influenza* type b" or "Hemophilus influenza* type b" or hib).tw.
9	Hepatitis B/
10	"hepatitis b".tw.
11	exp Poliomyelitis/
12	(Polio* or (infantile adj1 paralysis)).tw.
13	exp Pneumococcal Infections/
14	(Pneumococcal adj4 (disease* or infection*)).tw.
15	(streptococcus pneumoniae adj4 Infection*).tw.
16	exp Meningococcal Infections/
17	(Meningococcal adj4 (disease* or infection*)).tw.
18	Rotavirus Infections/ or Rotavirus/
19	rotavirus.tw.
20	Measles/
21	(measles or rubeola or mmr).tw.
22	Mumps/
23	(mumps or (epidemic adj2 (parotitides or parotitis))).tw.
24	Rubella/ or Rubella virus/
25	(rubella or ((german or "three day") adj2 measle*)).tw.
26	human papillomavirus 16/ or human papillomavirus 18/ or exp papillomavirus Infections/ or exp human papillomavirus 11/
27	(hvp or papillomavirus).tw.
28	Condylomata Acuminata/
29	(condyloma* adj1 acuminat*).tw.



**Medline Strategy, searched 12<sup>th</sup> February 2020**

**Database: Ovid MEDLINE(R) <1946 to February 11<sup>th</sup> 2020**

**Search Strategy:**

30 ((genital or veneral) adj2 wart\*).tw.  
31 exp Herpes Zoster/  
32 (shingles or herpes zoster or zona).tw.  
33 or/1-32  
34 exp Vaccination/  
35 Vaccines/ or exp bacterial vaccines/ or cancer vaccines/ or exp toxoids/ or exp vaccines  
combined/ or exp viral vaccines/  
36 exp Immunization programs/  
37 vaccin\*.tw.  
38 exp Immunization/  
39 (immunis\* or immuniz\*).tw.  
40 (immunologic\* adj4 (sensitiz\* or sensitiz\* or stimulation\*)).tw.  
41 (immunostimul\* or variolation\*).tw.  
42 or/34-41  
43 33 and 42  
44 animals/ not humans/  
45 43 not 44  
46 limit 45 to english language/  
47 limit 46 to dt=19900101-20200212  
48 afghanistan/ or exp africa/ or albania/ or andorra/ or antarctic regions/ or argentina/ or exp  
asia, central/ or exp asia, northern/ or exp asia, southeastern/ or exp atlantic islands/ or bahrain/  
or bangladesh/ or Bhutan/ or bolivia/ or borneo/ or "bosnia and Herzegovina"/ or brazil/ or  
bulgaria/ or exp central america/ or exp china/ or colombia/ or "Commonwealth of Independent  
States"/ or croatia/ or "Democratic People's Republic of Korea"/ or ecuador/ or gibraltar/ or  
guyana/ or exp india/ or indonesia/ or iran/ or iraq/ or jordan/ or kosovo/ or kuwait/ or lebanon/  
or liechtenstein/ or macau/ or "macedonia (republic)"/ or exp melanesia/ or moldova/ or monaco/  
or mongolia/ or montenegro/ or nepal/ or Netherlands Antilles/ or New Guinea/ or oman/ or  
pakistan/ or paraguay/ or peru/ or philippines/ or qatar/ or "republic of Belarus"/ or romania/ or  
exp russia/ or saudi arabia/ or serbia/ or sri lanka/ or suriname/ or syria/ or taiwan/ or exp  
transcaucasia/ or ukraine/ or uruguay/ or united arab emirates/ or exp ussr/ or venezuela/ or  
yemen/  
49 australasia/ or exp australia/ or austria/ or exp Baltic States/ or belgium/ or exp canada/ or  
chile/ or czech republic/ or europe/ or European Union/ or exp france/ or exp germany/ or greece/  
or hungary/ or ireland/ or Israel/ or exp italy/ or exp japan/ or korea/ or luxembourg/ or mexico/  
or netherlands/ or new zealand/ or north america/ or poland/ or portugal/ or exp "republic of  
korea"/ or exp "Scandinavian and Nordic Countries"/ or slovakia/ or slovenia/ or spain/ or  
switzerland/ or turkey/ or exp united kingdom/ or exp united states/ or "Organisation for  
Economic Co-Operation and Development"/ or Developed Countries/  
50 48 not (48 and 49)  
51 47 not 50  
52 Cost-Benefit Analysis/  
53 Quality-Adjusted Life Years/  
54 Markov Chains/  
55 exp Models, Economic/  
56 cost\*.ti.  
57 (cost\* adj2 utilit\*).tw.  
58 (cost\* adj2 (effective\* or assess\* or evaluat\* or analys\* or model\* or benefit\* or threshold\*  
or quality or expens\* or saving\* or reduc\*)).tw.

**Medline Strategy, searched 12<sup>th</sup> February 2020**

**Database: Ovid MEDLINE(R) <1946 to February 11<sup>th</sup> 2020**

**Search Strategy:**

- 59 (economic\* adj2 (evaluat\* or assess\* or analys\* or model\* or outcome\* or benefit\* or threshold\* or expens\* or saving\* or reduc\*)).tw.
- 60 (qualit\* adj2 adjust\* adj2 life\*).tw.
- 61 QALY\*.tw.
- 62 (incremental\* adj2 cost\*).tw.
- 63 ICER.tw.
- 64 utilities.tw.
- 65 markov\*.tw.
- 66 (dollar\* or USD or cents or pound or pounds or GBP or sterling\* or pence or euro or euros or yen or JPY).tw.
- 67 ((utility or effective\*) adj2 analys\*).tw.
- 68 (willing\* adj2 pay\*).tw.
- 69 (EQ5D\* or EQ-5D\*).tw.
- 70 ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)).tw.
- 71 (european\* adj2 quality adj3 ("5" or five)).tw.
- 72 or/52-71
- 73 51 and 72