

**Technical appendix for the Vaccination
Transformation Programme review:
Databases and search strategy**

Databases

The databases searched included:

- OVID Medline
- OVID Embase
- Cochrane library
- EBSCO CINAHL
- Proquest ASSIA
- Proquest Public Health
- Proquest Sociological Abstracts
- Web of Science
- Epistemonikos.

Search strategy

Medline (May 2019) (similar search terms used for other sources)

Search strategy designed to identify literature on: elderly people AND shingles, influenza or pneumococcal vaccination AND interventions to increase uptake.

#	Searches	Results
1	exp Aged/	2935750
2	1 not (adolescent/ or exp child/ or exp infant/)	2340382
3	(elderly or older adult* or older age or geriatric* or older person*1 or older people or older man or older men or older woman or older women or aging or ageing or senior citizen* or seniors or retired or retirement or retiree* or nursing home* or care home* or assisted living or sheltered housing or elder care or pension* or senil* or dementia or geriatric* or gerontol* or medicare).ti,ab,kf.	714108
4	((("65" adj1 age*1) or ("65" adj1 over)).ti,ab,kf.	41666
5	((("70" adj1 age*1) or ("70" adj1 over)).ti,ab,kf.	22558
6	((("75" adj1 age*1) or ("75" adj1 over)).ti,ab,kf.	13917
7	((("80" adj1 age*1) or ("80" adj1 over)).ti,ab,kf.	17002
8	Homes for the Aged/	13269
9	Dementia/ or Alzheimer Disease/	125918
10	Health Services for the Aged/	17111
11	Geriatrics/	29174
12	Housing for the Elderly/	1583
13	Homebound Persons/	587
14	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13	3346328

#	Searches	Results
15	Herpes Zoster Vaccine/	689
16	Herpes Zoster/	9871
17	Vaccination/	77025
18	Vaccination Refusal/	188
19	Immunization/	49424
20	Immunization Programs/	10080
21	17 or 18 or 19 or 20	129209
22	16 and 21	467
23	((shingles or herpes zoster) adj3 (vaccin* or immunis* or immuniz*)).ti,ab,kf.	663
24	(zostavax or shingrix or zoster vaccine).ti,ab,kf.	533
25	15 or 22 or 23 or 24	1396
26	Influenza Vaccines/	21523
27	Influenza, Human/	46352
28	21 and 27	7194
29	((influenza or flu) adj3 (vaccin* or immunis* or immuniz*)).ti,ab,kf.	21989
30	(Fluzone High-Dose or Fludax or aIV3 or aiiV3 or aTIV or QIV).ti,ab,kf.	181
31	26 or 28 or 29 or 30	29192
32	exp Pneumococcal Vaccines/	6992
33	exp Pneumococcal Infections/	19815
34	21 and 33	2367
35	((pneumococcal or pneumonia) adj3 (vaccin* or immunis* or immuniz*)).ti,ab,kf.	9494

#	Searches	Results
36	(pneumo jab or pneumovax23 or 23vPPV).ti,ab,kf.	59
37	32 or 34 or 35 or 36	11610
38	25 or 31 or 37	40184
39	14 and 38	10123
40	"Health Knowledge, Attitudes, Practice"/	102502
41	"Health Services Accessibility"/	68641
42	Persuasive Communication/	3530
43	Health Promotion/	69254
44	Decision Making/	88292
45	"Patient Acceptance of Health Care"/	42085
46	"Patient Education As Topic"/	81881
47	((improv* or increase* or boost or raise) adj3 (acceptance or acceptability or uptake or engagement or awareness or attendance or compliance or equity or coverage or vaccination rate*1 or immunisation rate*1 or immunization rate*1)).ti,ab,kf.	94442
48	((reduc* or remov* or improv* or lower* or ameliorat*) adj3 (barrier* or non-adherence or non-attendance or low attendance or non-acceptance or "no show*" or refusal* or refuse)).ti,ab,kf.	13619
49	((reach or benefit or outreach or improv* or increase* or boost or raise) adj3 (rural or marginalis* or marginaliz* or underserved or inequalit* or "hard to reach" or remote location*)).ti,ab,kf.	5505
50	((location or located or setting*) adj3 (alternative or office based or non-medical or traditional or pharmacy or pharmacies or clinics or physician office* or physicians office*	9784

#	Searches	Results
	or urgent care center* or urgent care centre* or polyclinic* or general practi* or gp or gps)).ti,ab,kf.	
51	Pharmacies/	7525
52	Physicians' Offices/	1711
53	exp ambulatory care facilities/	52819
54	(reminder-recall or (routine* adj3 (recommend* or invite or invitation* or suggest* or offer or remind* or recall*)) or reminder system* or personalised communication* or personalized communication* or standing order program*).ti,ab,kf.	8843
55	reminder systems/	3207
56	((intervention*1 or strategy or strategies or program*1 or programme*1) adj5 (effective or cost-effective)).ti,ab,kf.	98419
57	40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56	668492
58	39 and 57	1887
59	limit 58 to (english language and yr="2013 -Current")	679

Additional database searching (Medline strategies – similar search terms used for other sources)

Searches carried out during May to June 2019 to cover possible gaps in previous searches.

Populations that may experience barriers to accessing vaccination

Search strategy designed to identify additional literature on selected groups who may experience barriers to accessing vaccination (people with dementia, remote and rural communities, people with learning disabilities).

#	Searches	Results
60	25 or 37	12909
61	57 and 60	1305
62	limit 61 to yr="2013 -Current"	546
63	62 not 59	305
64	(child* or infant* or pediatr* or paediatr*).ti,kf,hw,jw.	2739590
65	63 not 64	178
66	exp Dementia/	153733
67	exp Intellectual Disability/	92665
68	exp Cognition Disorders/	86064
69	exp Disabled Persons/	61815
70	Rural Population/	55060
71	Rural Health/	23002
72	Rural Health Services/	12025
73	(learning disab* or intellectual impair* or intellectual disab* or learning difficult* or cognitive abilit* or cognitive impairment* or dementia or alzheimer*).ti,ab,kf.	264710

#	Searches	Results
74	(physical disab* or physically disab* or ((difficult* or problem* or struggl* or reduc*) adj2 (mobility or movement or walk*)) or wheelchair* or mobility aid*).ti,ab,kf.	22227
75	(remote area* or rural area* or "remote and rural").ti,ab,kf.	39716
76	66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75	596926
77	38 and 57 and 76	118
78	limit 77 to (english language and yr="2013 -Current")	41
79	78 not 59	20
80	79 not 64	7
81	(vaccin* or immunis* or immuniz*).ti,kf.	198242
82	17 or 18 or 19 or 20 or 81	247665
83	14 and 76 and 82	904
84	limit 83 to (english language and yr="2013 -Current")	279
85	84 not 59	264
86	85 not 64	234

Carers

Search strategy designed to identify additional literature on interventions aimed at carers.

#	Searches	Results
87	Caregivers/	32870
88	Spouses/	9476
89	(carer or carers or caregiver or caregivers or wife or wives or husband or husbands or spouse or spouses).ti,ab,kf.	97701
90	87 or 88 or 89	110764

#	Searches	Results
91	38 and 57 and 90	65
92	91 not 59	55
93	limit 92 to yr="2013 -Current"	17

Healthcare providers

Search strategy designed to identify additional literature on interventions aimed at healthcare providers.

#	Searches	Results
1	(health care worker* or healthcare worker* or health care professional* or healthcare professional* or health personnel or health care personnel or healthcare personnel or primary care provider* or general practitioner* or gp or gps or nursing staff or practice nurse* or nurse practitioner* or community nurse* or pharmacist* or care home staff or nursing home staff).ti,kf.	62670
2	((shingles or herpes zoster) adj3 (vaccin* or immunis* or immuniz*)).ti,ab,kf.	669
3	(zostavax or shingrix or zoster vaccine).ti,ab,kf.	545
4	((influenza or flu) adj3 (vaccin* or immunis* or immuniz*)).ti,ab,kf.	22161
5	(Fluzone High-Dose or Fludac or aIV3 or aiiV3 or aTIV or QIV).ti,ab,kf.	184
6	((pneumococcal or pneumonia) adj3 (vaccin* or immunis* or immuniz*)).ti,ab,kf.	9572
7	(pneumo jab or pneumovax23 or 23vPPV).ti,ab,kf.	59
8	2 or 3 or 4 or 5 or 6 or 7	31241

#	Searches	Results
9	(intervention* or ((improv* or increase* or boost or rais*) adj2 (acceptance or uptake or engagement or awareness or compliance or knowledge or education or intention*))).ti.	139830
10	1 and 8 and 9	36
11	limit 10 to (english language and yr="2013 -Current")	21
12	(intervention* or strategy or strategies or initiative* or ((improv* or increase* or boost or rais*) adj2 (acceptance or uptake or engagement or awareness or compliance or knowledge or education or intention*))).ti.	277764
13	1 and 8 and 12	60
14	limit 13 to (english language and yr="2013 -Current")	35
15	14 not 11	14

Grey literature search

Searches carried out during June 2019.

Source	Search terms/limits
Google Advanced search	(Vaccine OR immunisation OR immunization) AND (elderly OR older adults) AND (intervention OR increase OR uptake) Limits: site: .org, .org.uk, .ac, .nhs.uk, .gov, .gov.uk, .gov.scot, .gov.au Site last updated 2013-2019
Gerontological Society of America	Scan of list of publications since 2013
World Health Organization (WHO)	Checking for relevant publications under Influenza Search for pneumococcal + elderly Search for herpes or shingles or zoster + elderly

Source	Search terms/limits
European Commission	Elderly + vaccination
Centers for Disease Control and Prevention (CDC)	Vaccines site – search terms: increase, elderly, older
Turning Research Into Practice (TRIP) database	Vaccination, immunisation, increasing uptake, elderly, adult, herpes zoster, pneumococcal, influenza
National Institute for Health and Care Excellence (NICE) Evidence search	Vaccination, immunisation, increasing uptake, elderly, adult, herpes zoster, pneumococcal, influenza
Clinical Trials	Elderly, older, vaccination or immunisation, immunization (title search only)
Conference Abstracts	National Immunisation Network Meeting HSE National Immunisation Conference Ireland National Immunisation Conference for Healthcare Workers Welsh Immunisation Conference