

Annual Return by YFVCs in England, Wales and Northern Ireland: 2024

Executive Summary

This Annual Return (AR) reports the use of yellow fever (YF) vaccine and YF vaccination services in Yellow Fever Vaccination Centres (YFVCs) from 1 January 2024 to 31 December 2024.

Demographics

- At the end of 2024, there were a total of 1,875 designated YFVCs in England, Wales, and Northern Ireland (EWNI). This compares with 1,755 designated YFVCs at the end of 2023.
- All 1,875 designated YFVCs were asked to complete an AR, and the response rate was 87.8%.
- Most YF services were provided by pharmacies (57.4%), followed by GP practices (29.6%).
- 1,473 (89.4%) responding YFVCs (from hereon, 'YFVCs') reported that all health professionals (HPs) had received NaTHNaC YF training. 32 YFVCs reported that no HPs had received NaTHNaC YF training; all were followed up by NaTHNaC and 11 YFVCs were temporarily suspended, as the training requirement under the Conditions of Designation for YFVCs was not met.

Yellow fever vaccine doses

- 89,967 YF vaccine doses were administered in EWNI. This accounts for less than 0.1% of all overseas visits made by UK residents in 2024, and less than 0.3% of overseas visits made by UK residents excluding travel to Europe and North America.
- The 18-59-year-old age group accounted for the largest proportion of vaccinated individuals (73.7%). Those aged 60 years or older accounted for 10.1% of vaccinated individuals.
- 1,057 reinforcing doses were given, accounting for less than 1.2% of all doses given.
- 668 (40.6%) YFVCs issued Medical Letters of Exemption (MLoE). In total 4,427 MLoE were issued to travellers; with 40% of these being issued to travellers over the age of 60 years where age was a precaution to YF vaccine.
- 9,578 YF vaccines were given to individuals with a precaution to YF vaccine.

Clinical incidents

- 11 YFVCs reported that YF vaccine was given where a contraindication to vaccination was present. Further investigation of these reports by NaTHNaC confirmed 10 as being AR survey completion errors and one as clinically appropriate.
- One suspected yellow fever vaccine associated viscerotropic disease (YEL-AVD) and no yellow fever vaccine associated neurologic disease (YEL-AND) were reported in 2024.

Conditions of Designation and Code of Practice

- 1,626 (98.7%) YFVCs had carried out a best practice review of YF services; 20 (1.2%) were 'unsure' and one did not carry out a best practice review.
- 1,621 (98.4%) YFVCs used a traveller checklist during the travel health consultation to assist YF risk assessment. Of these, 1,341 (82.7%) YFVCs used the NaTHNaC/Public Health Scotland standardised checklist.
- 1,567 (95.1%) YFVCs supplied the YF vaccine Patient Information Leaflet (PIL) routinely to travellers receiving YF vaccination.

Introduction

This report concerns the 2024 Annual Return (AR) of yellow fever (YF) vaccine use and practice of Yellow Fever Vaccination Centres (YFVCs) in England, Wales, and Northern Ireland (EWNl).

Methods

A questionnaire (Appendix A) was created using SurveyMonkey online survey software (SurveyMonkey, San Mateo, California, US). YFVCs who had a current designated status between 1 January 2024 and 31 December 2024 were sent a weblink to the survey via multiple channels, including emails to YFVC staff, news items on NaTHNaC's website, and social media posts (Facebook, X).

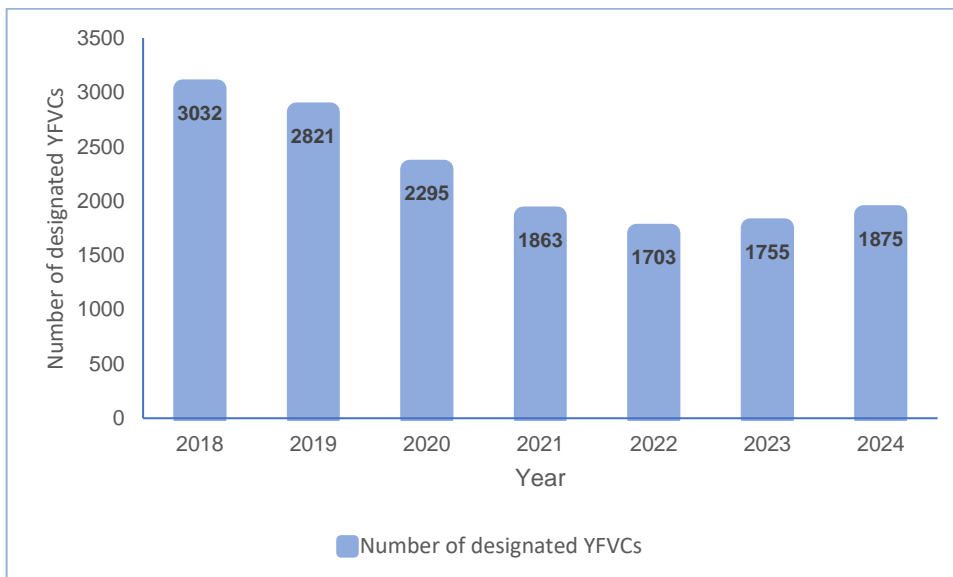
The online questionnaire was open for responses between 21 March and 20 June 2025. Email reminders were sent to non-responding YFVCs at regular intervals.

Data were extracted from SurveyMonkey, cleaned and transformed using various Python packages, mapped using GIS tools, and analysed in Microsoft Excel.

Results

A total of 1,875 YFVCs in EWNl remained designated at the end of 2024. This compares with 1,755 YFVCs at the end of 2023. The number of YFVCs had been declining slowly over time with the biggest proportional decrease in 2020 and 2021, during the time of most significant COVID-19 restrictions (Figure 1). There was an increase in YFVCs from 2022 to 2024 of 10.1%.

Figure 1: Designated Yellow Fever Vaccination Centres 2018 – 2024

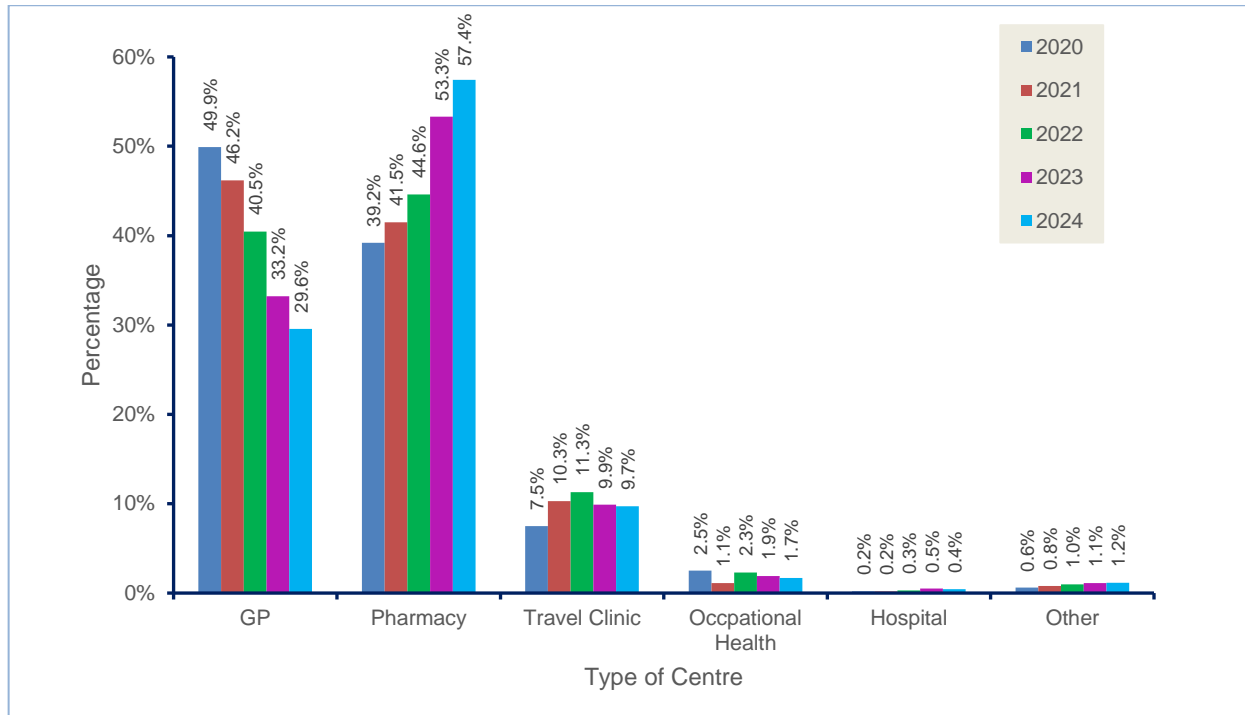


All 1,875 designated YFVCs were invited to complete an AR, with 1,647 responses (response rate of 87.8%). The response rates in the previous five years (2023-2019) were 94.2%, 95.8%, 71%, 88% and 87% respectively.

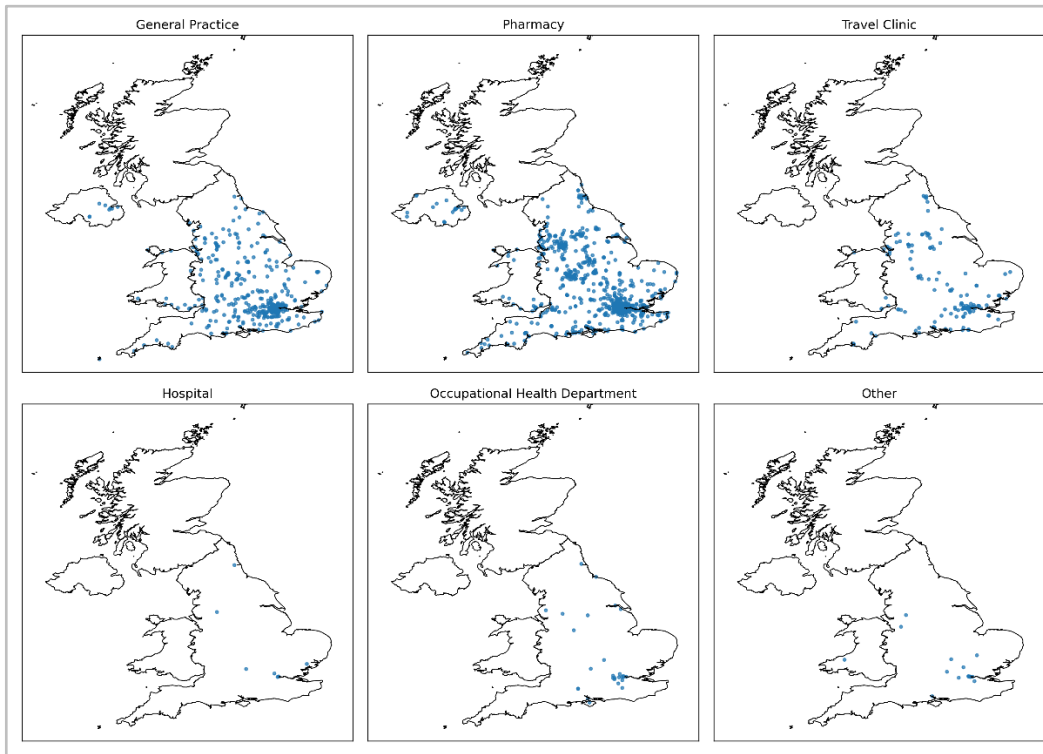
i. YFVC characteristics

YFVCs were most commonly pharmacies (57.4%), followed by General Practice (GP) (29.6%), private travel clinics (9.7%), occupational health departments (1.7%) and hospitals (0.4%). There has been a gradual decline in the proportion of GP YFVCs while the proportion of pharmacy YFVCs has increased (see Figure 2). 8.8% of YFVCs had been registered for less than a year.

Figure 2: Yellow Fever Vaccination Centre organisation type 2020 – 2024



Pharmacy YFVCs are widely distributed across the UK, with the highest concentration in the southern and central regions of England, making them the most accessible and commonly available type of YFVC organisation (Figure 3). General practices have the second highest coverage. Other organisations, such as hospitals, travel clinics, and occupational health departments, have a more limited distribution and are concentrated in specific regions.

Figure 3: Yellow Fever Vaccination Centre location by organisation type 2024

Most YFVCs had one health professional (HP) administering YF vaccines (range 0 to 31) (Table 1).

Table 1: Number of health professionals administering YF vaccines at YFVC.

Number of health professionals	Number of centres	Percentage (%)
0	51	3.1%
1	896	54.6%
2	404	24.6%
3	148	9%
4	81	4.9%
5	23	1.4%
≥6	39	2.4%
Total	1,642*	100%

*5 completion errors

1,473 (89.4%) YFVCs reported that all HPs administering YF vaccine had received NaTHNaC YF training and 142 (8.6%) YFVCs reported that some HPs had received YF training. 32 (1.9%) YFVCs reported that no HPs administering YF vaccine had received NaTHNaC training; all 32 YFVCs were followed up by NaTHNaC and 21 reports were found to be survey completion errors. As a result of follow up, 11 YFVCs were suspended from providing YF vaccination services, as the training requirement under the Conditions of Designation for YFVCs had not been met.

ii. YF vaccine doses administered

89,967 YF vaccine doses were administered by YFVCs in EWNl (Figure 4). This accounts for less than 0.1% of all overseas visits made by UK residents in 2024, and less than 0.3% of overseas visits made by UK residents travelling outside of Europe and North America¹. 112 (6.8%) YFVCs did not administer any YF vaccines; compared with 136 (8.2%) YFVCs in 2023 (Table 2).

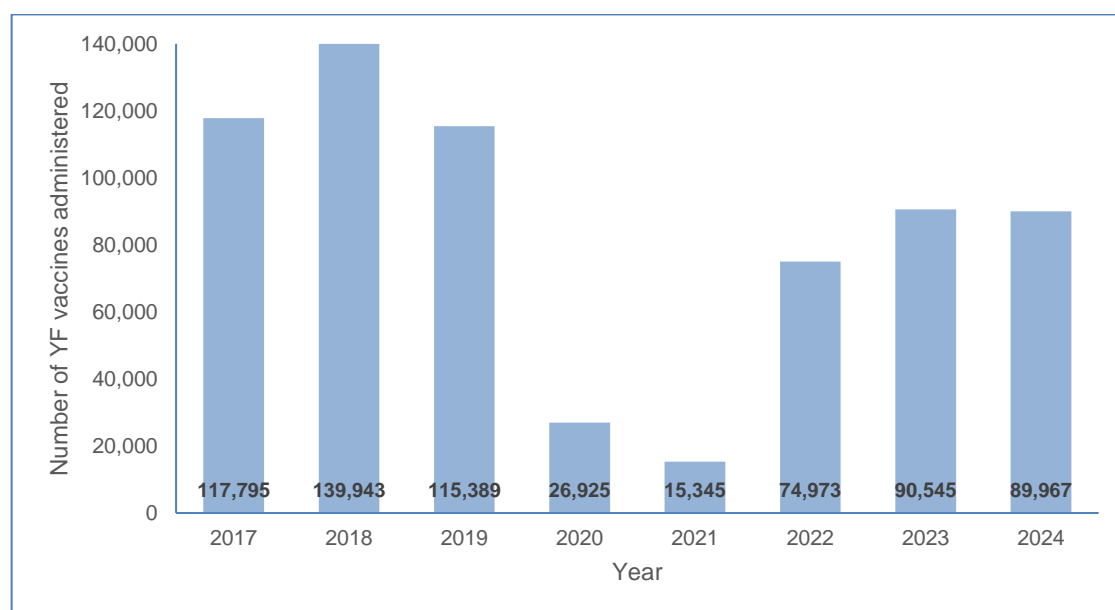
Table 2: Number of doses administered.

Number of doses	Number of YFVCs 2024	Percentage	Number of YFVCs 2023	Percentage
0	112	6.8%	136	8.2%
1-10	365	22.2%	359	21.7%
11-20	241	14.6%	302	18.3%
21-30	186	11.3%	178	10.8%
31-40	120	7.3%	110	6.7%
41+	623	37.8%	568	34.3%
Total	1,647	100%	1653	100%

The number of YF vaccine doses administered in 2024 was similar to 2023, when 90,545 doses of YF vaccine were reported as being administered. This is despite a 9.7% increase in visits abroad by UK residents between 2023 and 2024¹. Note, however, that the AR response rate was lower in 2024.

The number of YF vaccine doses administered in 2024 represents a 22% decrease compared with 2019, when 115,389 doses of the YF vaccine were reported as administered (Figure 4). This is despite 1.6% more visits abroad to all destinations by UK residents in 2024 compared with 2019¹.

Figure 4: Number of YF vaccines administered 2017-2024

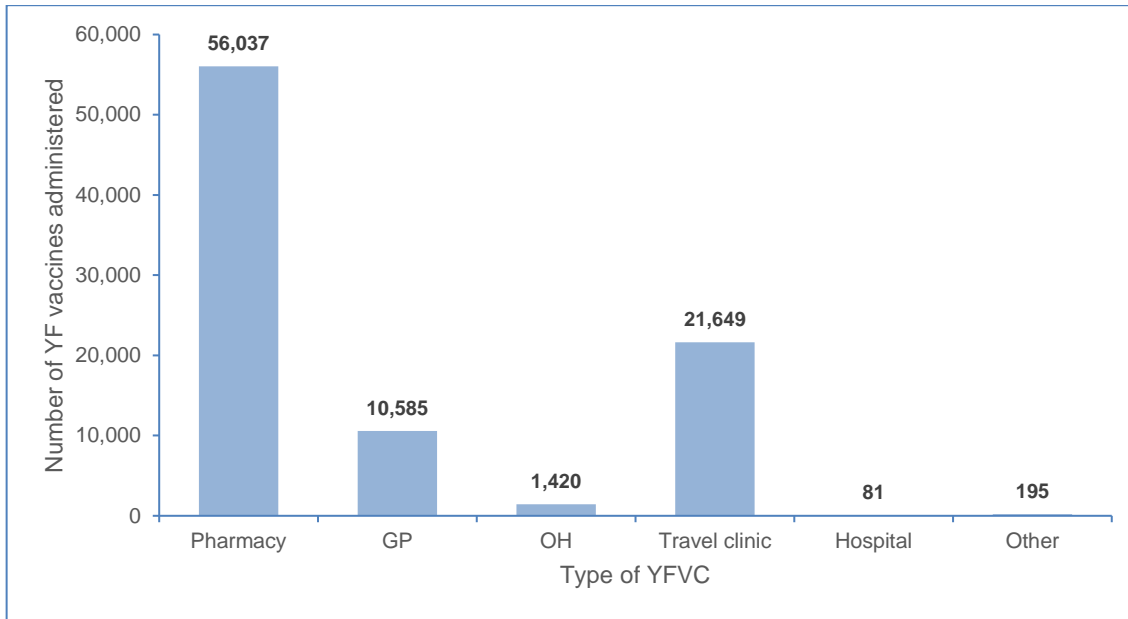


Of the 89,967 YF vaccines administered during 2024, most (62.3%) were given in pharmacies, followed by travel clinics (24.1%) and then General Practice (11.8%) (Figure 5).

¹ Office for National Statistics (ONS). Travel trends: 2024.

ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/articles/traveltrends/2024

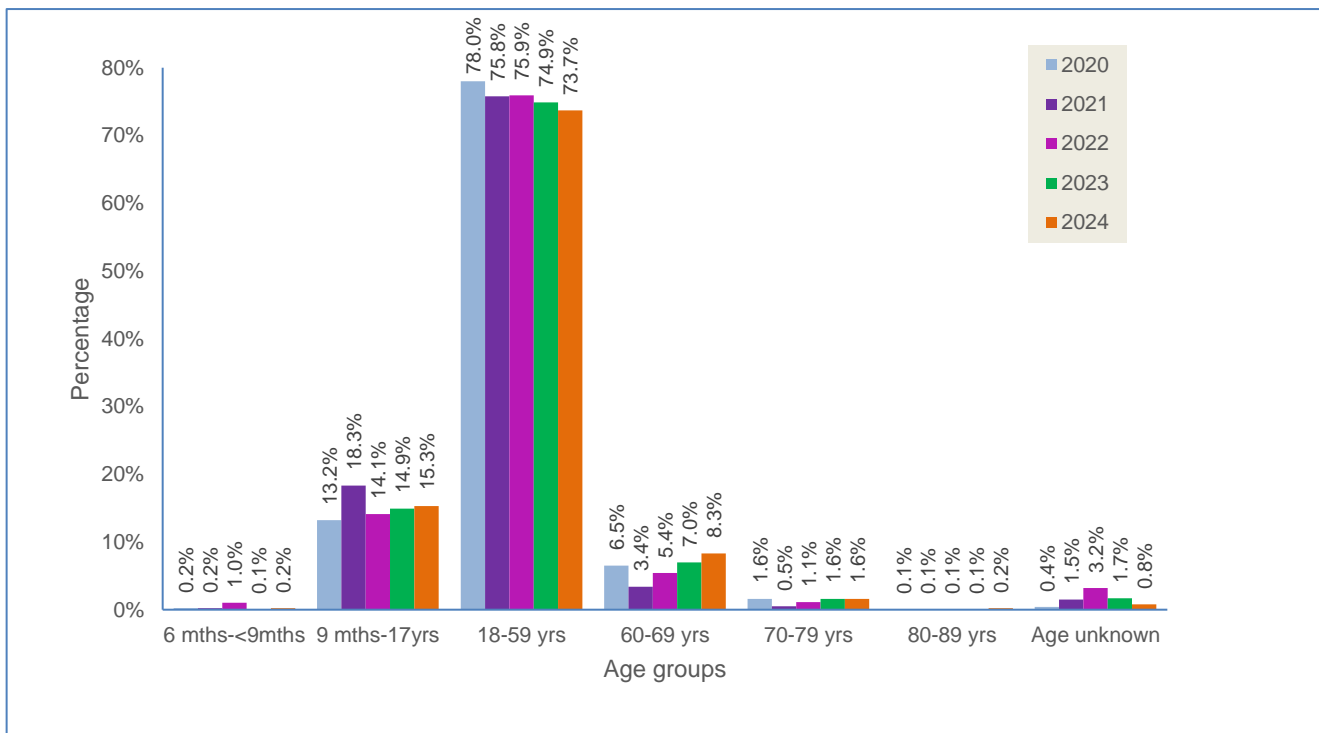
Figure 5: Number of YF vaccines administered according to type of YFVC



iii. Vaccine recipients

In YFVCs, 73.7% of administered vaccine doses were given to individuals aged 18–59 years. A further 10.1% of doses were administered to individuals aged 60 years and older. This represents a proportional increase of 16.1% compared with 2023, when 8.1% of doses were given to those aged 60 years and above (Figure 6).

Figure 6: Yellow fever vaccinations administered by age group 2020-2024



1,057 reinforcing doses of YF vaccine were given by YFVCs during 2024: representing less than 1.2% of all doses. The most common reason for administration of a reinforcing dose was for certification purposes where the original certificate or details of vaccination were unavailable (91.7%), followed by first YF vaccine dose given when aged less than two years (3.8%).

11 YFVCs reported administering YF vaccine where a contraindication to vaccination was present. All were followed up by NaTHNaC; and 10 were found to be survey completion errors. The one remaining YFVC vaccinated according to agreed protocols.

9,578 YF vaccines (10.6% of all YF vaccines given in 2024) were reported to have been administered to travellers with a precaution to YF vaccine²; of these, 96.3% were given to those aged 60 years and over (Table 3).

Table 3: Number of YF vaccines administered to travellers with a precaution to YF vaccine

Precaution	Number of YF vaccines
Infants aged 6-9 months	142
Adults aged 60 years and over	9,224
Pregnancy	26*
Breastfeeding	23**
Living with HIV	78
Taking low dose immunosuppressants	85
Total	9,578

* Where trimester known: First trimester (1); second trimester (2); third trimester (4)

** Where age of infant known: <6m (2); 6-under 9m (3); over 9m (10)

A total of 149 YFVCs reported that they would not administer YF vaccine to any traveller with a precaution to vaccination. Other YFVCs reported excluding specific subgroups of travellers with a precaution to YF vaccine, as detailed in Table 4 (this does not include the 149 YFVCs that do not offer YF vaccine to any traveller with a precaution).

Table 4: Number of YFVCs not offering YF vaccine according to precaution group

Precaution	Number of YFVCs not offering YF vaccine
Infants aged 6-9 months	275
Adults aged 60 years and over	9
Pregnancy	250
Breastfeeding	169
Living with HIV	106
Taking low dose immunosuppressants	80

² UK Health Security Agency (2024). Precautions for YF vaccine. In chapter 35 of the 'Green Book': Immunisation against infectious disease. gov.uk/government/publications/yellow-fever-the-green-book-chapter-35

There was one report of suspected Yellow Fever Vaccine-Associated Viscerotrophic Disease (YEL-AVD) and no cases of suspected Yellow Fever Vaccine-Associated Neurologic Disease (YEL-AND) or anaphylaxis reported by YFVCs during 2024.

The one suspected case of YEL-AVD had not previously been reported to NaTHNaC. It was not confirmed YEL-AVD; and the case fully recovered.

668 (40.6%) YFVCs issued Medical Letters of Exemption (MLoE); and during 2024, 4,427 MLoE were issued to travellers (Table 5).

Table 5: MLoE issued and reason for issue

Reason for MLoE	Total	Percentage
Contraindication		
All contraindications	2,311	52.2%
Precaution		
Aged 6-9 months	26	0.6%
Aged over 60yrs	1,771	40%
Pregnancy	17	0.4%
Breastfeeding	14	0.3%
HIV	13	0.3%
Low dose immunosuppressants	69	1.6%
Other	206	4.7%
Total	4,427	100%

The group most likely to be issued a MLoE were travellers with a contraindication to YF vaccination, followed by travellers aged 60 years and over. YFVCs were asked an additional optional question to consider when a MLoE would be offered to travellers aged 60 years and over. A total of 432 YFVCs (representing 26% of the sample) responded to this question; the results are presented in Table 6 (multiple answers were allowed).

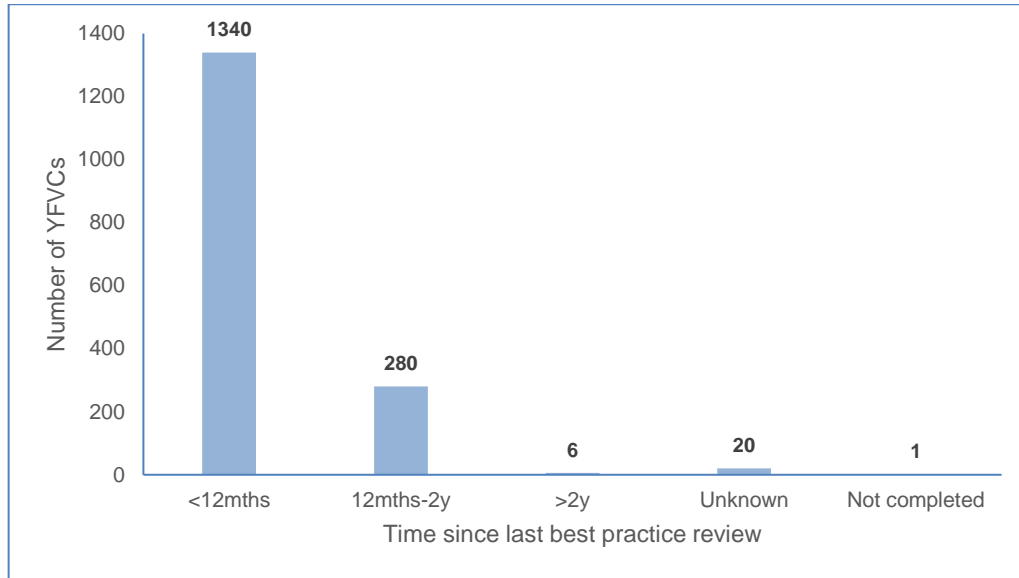
Table 6: When MLoE may be offered to travellers aged 60 years and over

Reason for MLoE in travellers aged 60y and over	Total
Always, the risk of YF vaccine outweighs risk of YF infection	154
For short visits to YF risk areas (e.g. 1-2 days)	143
With other medical conditions/medication (no contraindication)	178
Cruise passengers staying on board the ship	231
At traveller's request after risk/benefit discussion	248

iv. Conditions of Designation and Code of Practice

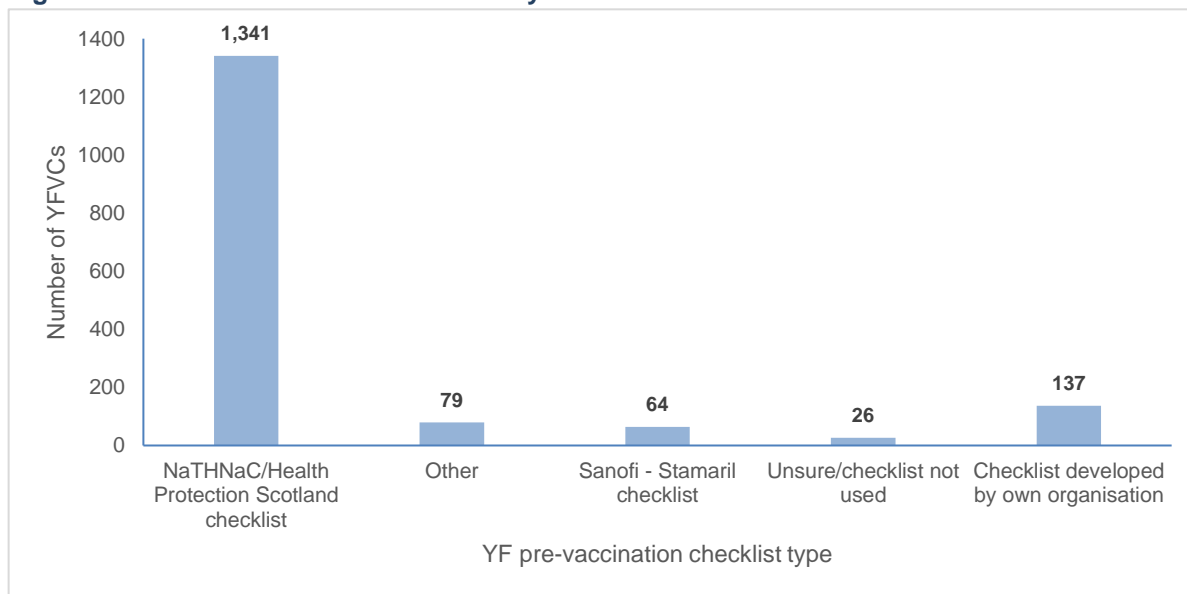
A best practice review had been completed by a total of 1,626 (98.7%) YFVCs. 1,340 had completed the review within the last year, 280 within the last 12-24 months and six more than two years ago. One YFVC had not completed a best practice review and 20 (1.2%) YFVCs were unsure (Figure 7).

Figure 7: Time elapsed since last YFVC best practice review



A checklist was used by 1,621 (98.4%) YFVCs to support YF vaccine risk assessment; and of these, 1,341 (82.7%) used the NaTHNaC/PHS YF pre-vaccination checklist, 79 (4.9%) an alternative checklist, 64 (3.9%) the Stamaril checklist supplied by Sanofi and 137 (8.5%) a checklist developed by their own organisation. 26 YFVCs were either unsure or did not use a YF pre-vaccination checklist (Figure 8).

Figure 8: YF risk assessment tool used by YFVC.



1,567 (95.1%) YFVCs supplied the YF vaccine Patient Information Leaflet (PIL) routinely to travellers receiving a YF vaccine; 80 YFVCs either did not provide or were unsure if the YF vaccine PIL was provided to travellers.

Conclusion

The 2024 AR reports on activity within YFVCs from 1 January 2024 to 31 December 2024.

Pharmacy YFVCs continue to be the largest provider of YF services.

The number of YF vaccines reported to be administered during 2024 has remained similar to 2023; however, is lower than the number of YF vaccines administered in 2019 (the last full year before the COVID-19 pandemic). Over half of YF vaccines administered in EWNl during 2024 were in pharmacy YFVCs.

The type of vaccine recipient remains, overall, representative of data collected in previous years.

Data collected about travellers with a precaution to YF vaccine will help inform and develop YF training offered to health professionals.

Additional optional questions related to malaria and dengue, which did not form part of the AR report, were included. This data will be analysed and reported separately.

The AR data provides an overview of YF activities in YFVCs in EWNl and enables follow up of areas of concern.

We would like to thank YFVCs who participated in the 2024 AR.

Appendix A: Questionnaire sent to all YFVCs that remained designated during 2024

Yellow Fever Vaccination Centres – Annual Return 2024

Your YFVC

All Yellow Fever Vaccination Centres (YFVCs) in England, Wales and Northern Ireland (EWNI) are required, as a [Condition of Designation](#), to submit an Annual Return of yellow fever vaccine use and associated adverse events to NaTHNaC. This detail will help inform what is known about yellow fever vaccination practice in EWNI.

YFVCs that do not comply with the requirement to submit an Annual Return by the closing date, may be temporarily de-designated until their return is received.

You will not receive a copy of your submitted Annual Return. If you wish to keep your own record, please print, or take screenshots of each page.

1. What is your YFVC ID Number? This is the 4- or 5-digit number after 'UKYFVC' on the YFVC's rubber stamp
2. What is the full postcode of the YFVC?
3. Please indicate your profession.
 - Doctor
 - Nurse
 - Pharmacist
 - Other (please specify)
4. Which of the following best describes the location of your YFVC?
 - General Practice
 - Pharmacy
 - Occupational Health Department
 - Travel Clinic
 - Hospital
 - British Armed Forces
 - Other (please specify)

5. When was your YFVC designated?

- We have been designated for less than one year (this is the Annual Return for only part of 2024)
- We have been designated for over one year (this is the Annual Return for 2024)

YFVC Activity

6. How many health professionals administered yellow fever (YF) vaccine at your YFVC in 2024?

7. Of those health professionals who gave YF vaccine in 2024, how many had undertaken NaTHNaC YF vaccination training (e-learning +/- virtual classroom) during the last 2 years?

- All
- Some
- None

8. How many doses of YF vaccine were administered at your YFVC in 2024?

9. How many doses were administered in each of the following age groups?

If no doses were administered enter 0

- 6 months to under 9 months
- 9 months to 17 years
- 18 to 59 years
- 60 to 69 years
- 70 to 79 years
- 80 years and older
- Age unknown

10. How many reinforcing doses were administered during 2024 ([see Figure 35.1 in the Green Book yellow fever chapter](#))?

- 0
- 1 or more (please enter the number of reinforcing doses administered)

11. How many reinforcing doses were given for the following reasons?

- Where the first dose given was:
 - when aged less than two years old
 - during pregnancy
 - whilst infected with HIV
 - when immune suppressed
 - before undergoing a bone marrow transplant
- Where previously vaccinated but ICVP (certificate) lost and reissue not possible
- Other

12. If Other, please specify

Contraindications

13. Was YF vaccine given when there was a [contraindication](#) to vaccination?

- Yes
- No

14. Which of the following groups was YF vaccine given to when [contraindicated](#)? Please tick all that apply.

*Do not include travellers aged 60 years or over travelling to areas where YF vaccine is recommended, and vaccination is a precaution.

- Aged under six months
- History of a confirmed anaphylactic reaction to a previous dose of YF vaccine
- History of a confirmed anaphylactic reaction to any component of the vaccine, including egg
- History of thymus disorder
- History of a primary or acquired immunodeficiency due to a congenital condition or disease process, (see chapters 6 & 35 of the [Green Book](#))
- Immunosuppressed due to treatment, (see chapters 6 & 35 of the [Green Book](#))
- *Aged 60 years or over and travelling to an area where YF vaccination not generally recommended by WHO.
- Family history (1st degree relative) of [YEL-AVD](#) and [YEL-AND](#) following vaccination

Precautions

15. Was YF vaccine given when there was a [precaution](#) to YF vaccine?

- Yes
- No, none given
- No, we exclude all groups with a precaution

16. How many YF vaccines were given to the following groups of travellers with a precaution to YF vaccine during 2024? If no doses were administered enter 0.

- Infants aged 6 months to under 9 months
- Aged 60 years and over (benefit of vaccine consider to outweigh risk of disease)
- Pregnancy
- Breastfeeding mother
- HIV infection with CD4 >200 and suppressed viral load
- Taking lower dose immunosuppressive therapies (see chapter 6 and 35 of the [Green Book](#))

17. If YF vaccine was given during pregnancy, please tick trimester(s) of pregnancy vaccine was given

- First trimester
- Second trimester
- Third trimester
- Trimester unknown

18. If YF vaccine was given to breastfeeding women at your YFVC, please tick how old the infant was at time of vaccination. Tick all that apply.

- Below 6 months
- 6-8 months
- 9 months or over
- Age of infant unknown

19. Are any of the following groups not offered YF vaccine at your YFVC?

- Infants aged 6 months to under 9 months
- Aged 60 years and over
- Pregnant women
- Breastfeeding mothers
- HIV infection with CD4 >200 and suppressed viral load
- Taking lower dose immunosuppressive therapies
- None of the above

Medical Letters of Exemption

20. How many Medical Letter(s) of Exemption (MLoE) were issued by your YFVC in 2024?

- 0
- Unknown
- 1 or more (please enter the number of MLoE issued)

21. How many Medical Letter(s) of Exemption (MLoE) were issued where there was a contraindication to yellow fever vaccine administration? Where none were issued enter 0

22. How many Medical Letters of Exemption (MLoE) were issued where there was a precaution to yellow fever vaccine administration? Where none were issued enter 0

- Infants aged 6 months to under 9 months
- Aged 60 years and over [vaccine risk considered to outweigh the risk of disease]
- Pregnancy
- Breast feeding mother
- HIV infection with CD4 >200 and suppressed viral load
- Taking lower dose immunosuppressive therapies (see chapter 6 and 35 of the [Green Book](#))
- Other

23. If you have given a Medical Letter of Exemption (MLOE) for 'other', please give further details below.

24. When might you consider offering a MLoE to travellers aged > 60 years visiting an area with risk of YF, where there is a YF certificate requirement? Please tick all that apply.

- Always, the risk of YF vaccine outweighs the risk of YF infection in this age group
- For short visits to YF risk areas, e.g. 1-2 days
- For travellers with other medical conditions / medications although there may be no clear contraindications to YF vaccine
- For cruise passengers staying on board the ship
- At the traveller's request, after a discussion about the benefits and risks of vaccination.

Yellow Fever Vaccine Associated Severe Adverse Events (YEL-SAE)

25. How many of the following serious Yellow Fever Vaccine Associated Severe Adverse Events ([YEL-SAE](#)) occurred at your YFVC in 2024? If none, please enter 0

NaTHNaC may contact a YFVC for clarification on data submitted in some circumstances.

- Anaphylaxis
- Yellow fever vaccine associated neurological/neurotropic disease [YEL-AND]
- Yellow fever vaccine associated viscerotropic disease [YEL-AVD]

26. If any serious YEL-SAE occurred at your centre, who were they reported to?

- NaTHNaC
- UK Health Security Agency
- MHRA via the yellow card system
- The manufacturer
- Other (please specify)

Conditions of Designation and Code of Practice

The following section asks about the governance of your YFVC and should be answered by a health professional who is responsible for risk assessment and administration of YF vaccine. All health professionals administering YF vaccine should be aware of the [Commission on Human Medicines 2019 report](#).

27. How often is YF practice reviewed at your YFVC?

- 0 to 12 months
- 12 months to 2 years
- More than 2 years
- Never
- Unsure

28. Is a standardised YF pre-vaccination checklist used during the travel health consultation to assist yellow fever vaccination risk assessment?

- Yes
- No
- Unsure

29. If yes, which standardised YF pre-vaccination checklist is used?

- [NaTHNaC / Public Health Scotland YF pre-vaccination checklist](#)
- [Sanofi Pasteur – Stamaril checklist](#)
- Checklist developed by our organisation
- Other (please specify)

30. Is the YF vaccine [Stamaril] Patient Information Leaflet [PIL] routinely given to the traveller?

- Yes
- No
- Unsure

Contact Information

31. To confirm, what is your YFVC ID Number? This is the 4- or 5-digit number after 'UKYFVC' on the centre's rubber stamp

32. Please enter a contact email address:

We ask for this in case we need to contact you about anything concerning your Annual Return