Yellow Card Centre Scotland

Annual Report
April 2024 to March 2025

Yellow Card Reports (Scotland)

5% increase

2900 total reports

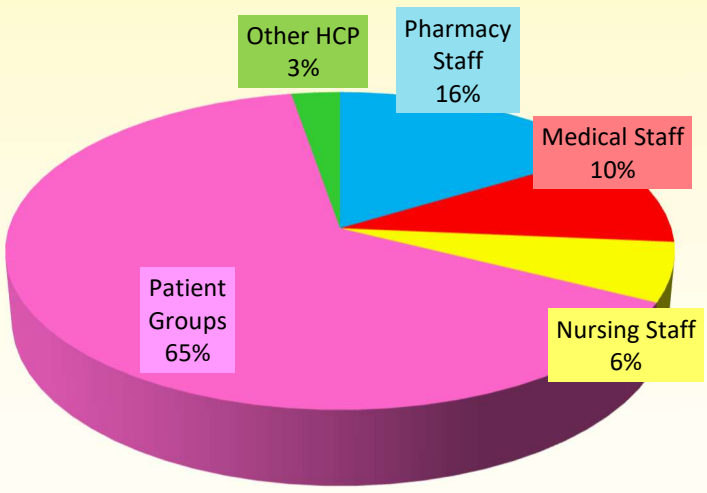
53 reports per 100,000 population

Reports submitted to the Yellow Card Scheme are for suspected adverse reactions that have not been proven to be related to the drug, and should not be interpreted as known side-effects

YCC Scotland Key Messages

Reports for vaccines continue to make up a significant percentage of all reports in 2024/25, with most of these coming from patients. A notable increase in reporting from healthcare professionals was seen, resulting in an increase in overall reporting, as patient reporting remained unchanged from the previous year.

Source of Reports



Top 5 Reported Medicines

1. COVID-19 Vaccine
2. Tirzepatide
3. Varicella Zoster Vaccine
4. Influenza Vaccine
5. RSV Vaccine

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ANNUAL REPORT OF THE YELLOW CARD CENTRE SCOTLAND TO THE MEDICINES AND HEALTHCARE PRODUCTS REGULATORY AGENCY

2024–2025

1. Team

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2. Executive Summary

The Yellow Card Centre Scotland (YCCS) has continued its crucial role in monitoring and reporting suspected adverse drug reactions (ADRs) across Scotland for the year 2024-2025. This report provides a comprehensive overview of the activities, findings, and strategic initiatives undertaken by YCCS, reflecting our commitment to maximising the safety of medicines used by the Scottish population.

Throughout 2024-2025, YCCS received a total of 2,900 reports, marking a 5% increase compared to the previous year. This rise is attributed primarily to increased reporting from healthcare professionals, which saw an increase from 881 reports in 2023/24 to 1,017 in 2024/25. Reports concerning COVID-19 vaccines remained significant, totalling 799 and represented over a quarter of all reports. The continued vigilance in vaccine reporting underscores the ongoing impact of the pandemic on public health and pharmacovigilance.

The distribution of reports across Scotland varied, with NHS Borders, NHS Highland, and NHS Shetland showing the highest reporting rates per 100,000 population, noting the influence of smaller population sizes on these statistics. Despite these variations, the overall increase in reports is a positive indicator of the growing awareness and utilisation of the Yellow Card Scheme.

Serious reports constituted 48% of all submissions, with a slight decrease in the number of reports classified as serious compared to the previous year. This year also saw a significant reduction in reports with fatal outcomes, which decreased by 68% to 24 reports. While these changes may point to an improved approach to safer prescribing and monitoring medicines use, the influence of trends in vaccine reporting and reporting practices should be acknowledged.

YCCS has also been active in promoting the Yellow Card Scheme through various educational initiatives aimed at both healthcare professionals and the public. These efforts are designed to enhance the understanding of the importance of reporting ADRs and to foster a culture of safety and vigilance. The engagement has been facilitated through training sessions, re-platforming of our popular e-learning modules, and direct communications, including updates to our digital platforms.

In conclusion, our annual report for 2024-2025 reflects a productive year for YCCS, with increased reporting activity, successful promotional efforts, and ongoing research initiatives. The data collected and the trends observed provide invaluable insights that will guide future pharmacovigilance activities. As we continue to navigate the complexities of drug safety in a post-pandemic era, YCCS remains dedicated to adapting its strategies to meet the evolving needs of healthcare providers and the public, ensuring that the Yellow Card Scheme remains a key part of medicine safety in Scotland.

Please share the finding of this report, and the overall importance of reporting suspected adverse drug reactions with your colleagues and peers. For information on how we can help to support any local initiatives to raise awareness in your area please contact loth.yccscotland@nhs.scot.

The governance of the centre remains with the YCCS Management Board and the YCCS Advisory Group. The groups meet each year to manage operational issues gather Scottish stakeholders' oversight, support, and direction to our objectives. Details are available on our website http://www.yccscotland.scot.nhs.uk/.

3. Yellow Card Data

3a Total Scottish Reports

A total of **2900 reports** of suspected adverse drug reactions were submitted from Scotland in 2024/25 via standard Yellow Card reporting, representing an overall 5% increase compared to the previous year (2023/24). This slight increase represents an increase in both reports for COVID-19 vaccines, from 714 reports in 2023/24 to 799 reports in 2024/25, as well as an increase in overall reporting even when COVID-19 vaccine reports are excluded.

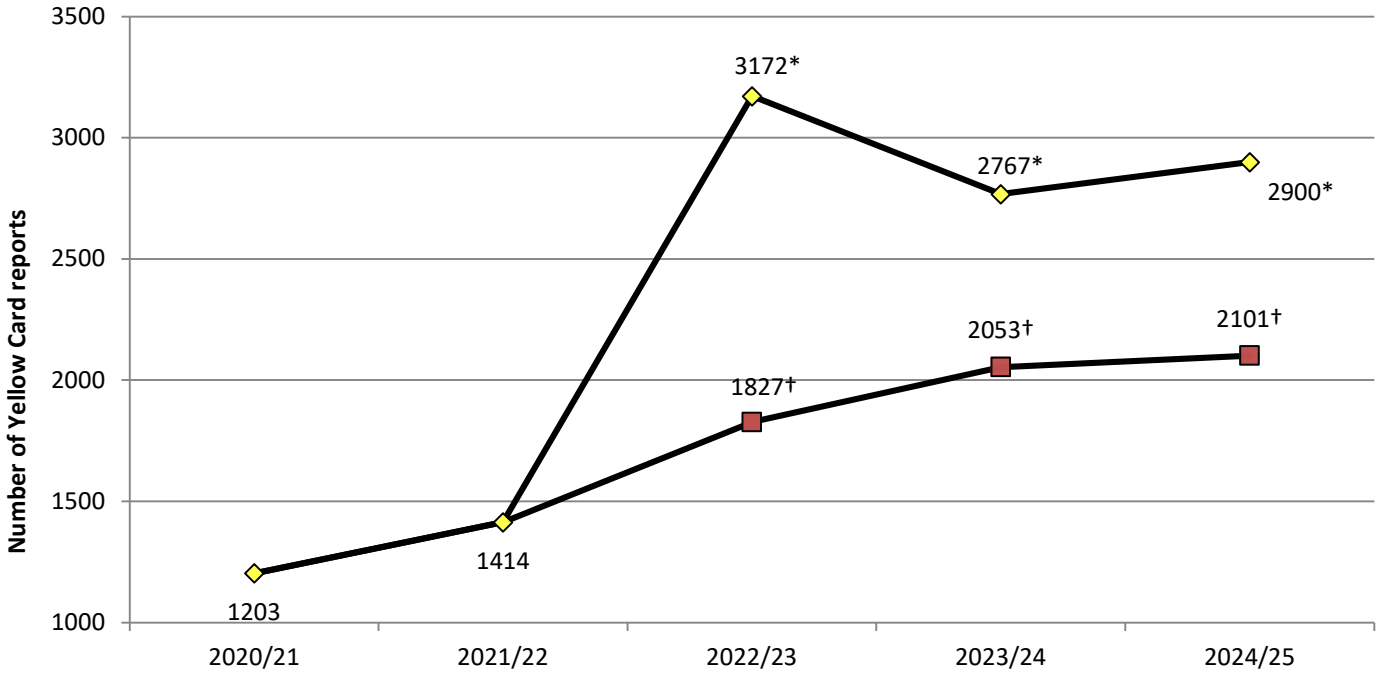
This level of reporting has still not risen back to the levels seen during the COVID-19 pandemic, but it is encouraging that reports are still significantly increased when compared to pre-pandemic levels.

Table 1 and **Figure 1** below illustrate the trend in standard reporting in Scotland over the last 5 years.

Table 1 – Number of Yellow Card reports from Scotland over the past 5 years

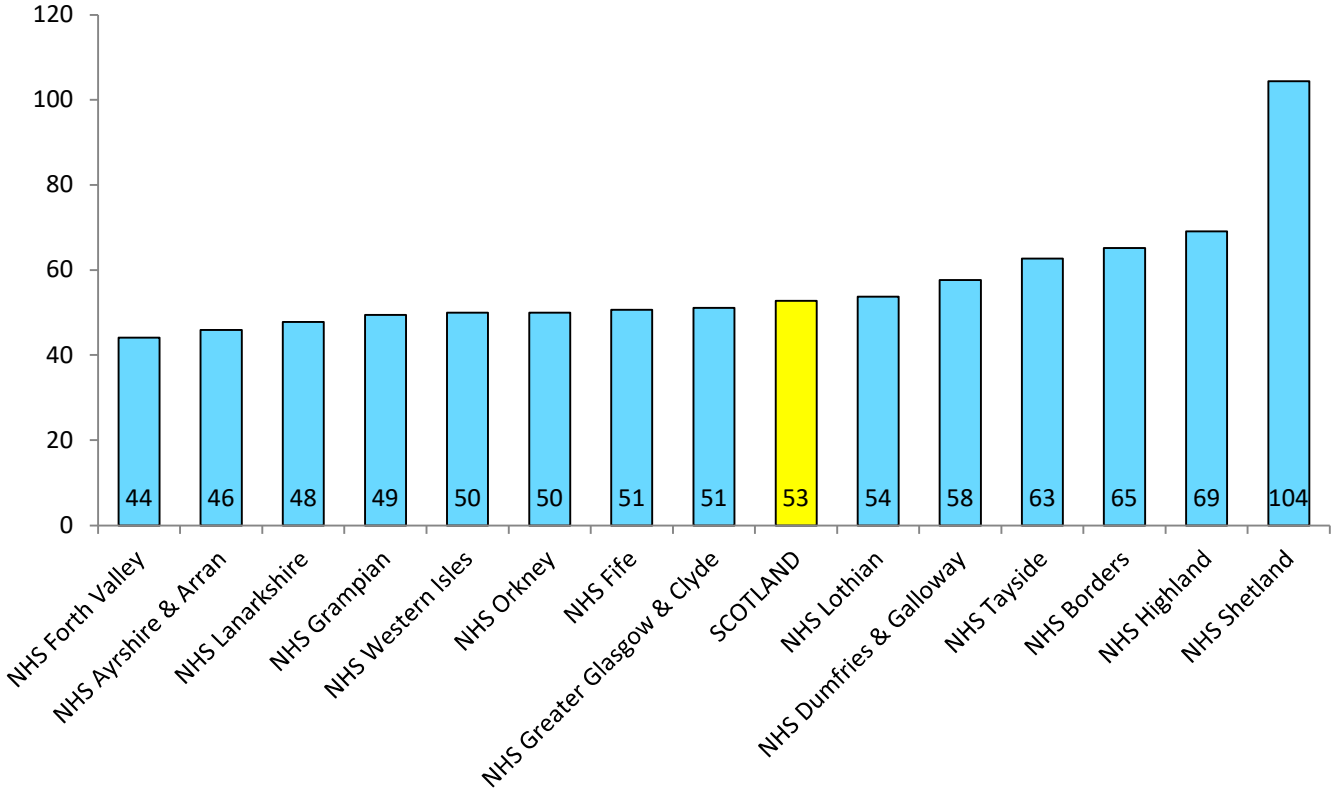
Year	Number of reports	Percentage change on previous year
2020/21	1203	−16%
2021/22	1414	+18%
2022/23	3172	+124%
2023/24	2767	-13%
2024/25	**2900**	**+5%**

Figure 1 - Number of Yellow Card reports from Scotland over the past 5 years



*all *standard data, including COVID-19 vaccine reports from July 2022 onwards* †*excluding COVID-19 vaccine reports*

Figure 2 - Health board Yellow Card reporting per 100,000 population* (Scotland 2024/25)



*Statistics from National Registers of Scotland, Population estimates mid-2022 as mid-2023 data was unavailable
†Reports for Golden Jubilee Hospital are included in NHS Greater Glasgow and Clyde
‡Reports for the State Hospital are included in NHS Lanarkshire

Figure 2 shows how health board areas in Scotland compare to the Scottish average (reports per 100,000 population). The average number of Yellow Card reports in Scotland was 53 reports per 100,000 population in 2024/25, compared to 51 reports per 100,000 population in 2023/24.

The top 3 reporting health boards per 100,000 population in 2024/25 were NHS Borders, NHS Highland, and NHS Shetland; however, caution is needed when interpreting these results due to the very low number of reports received from some of the NHS Scotland Health Boards. In particular, NHS Shetland received only 24 reports in 2024/25 for the entire health board, and its place in the top 3 reporting health boards is because of its very small population (~23,000 people).

Figure 3 – Number of Yellow Card Reports submitted over the last 5 years (top 5 reporting health boards in 2024/25)

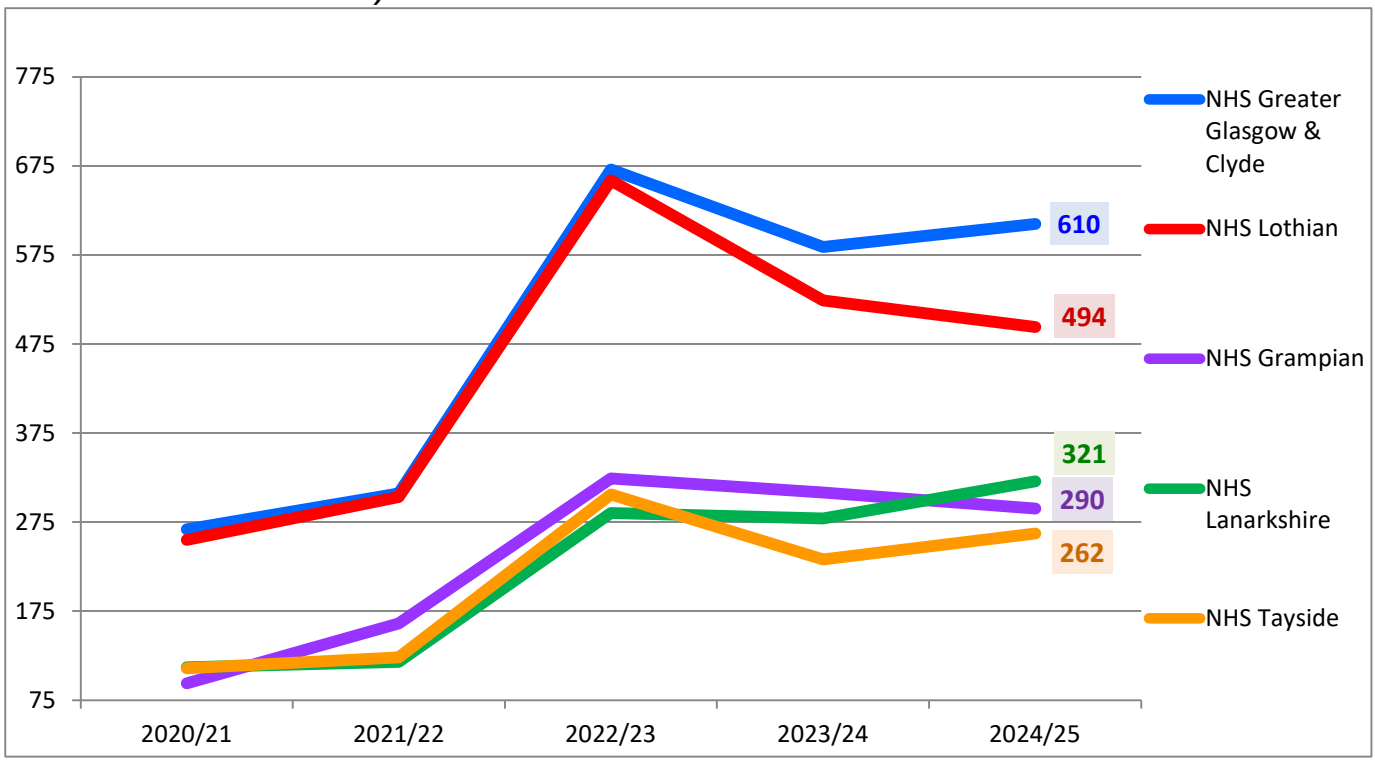


Figure 3 shows the 5-year trend in reporting for the five health boards that submitted the highest number of reports (total) in 2024/25.

Some health board areas have seen an increase in Yellow Cards submitted in 2024/25 compared to 2023/24, while others have seen a decrease. Health board areas which saw a notable increase include NHS Borders (+62%), NHS Dumfries & Galloway (+65%), NHS Lanarkshire (+15%), and NHS Tayside (+12%). NHS Ayrshire & Arran (+8%), and NHS Greater Glasgow & Clyde (+4%) also saw a moderate increase in Yellow Card reports on the previous year.

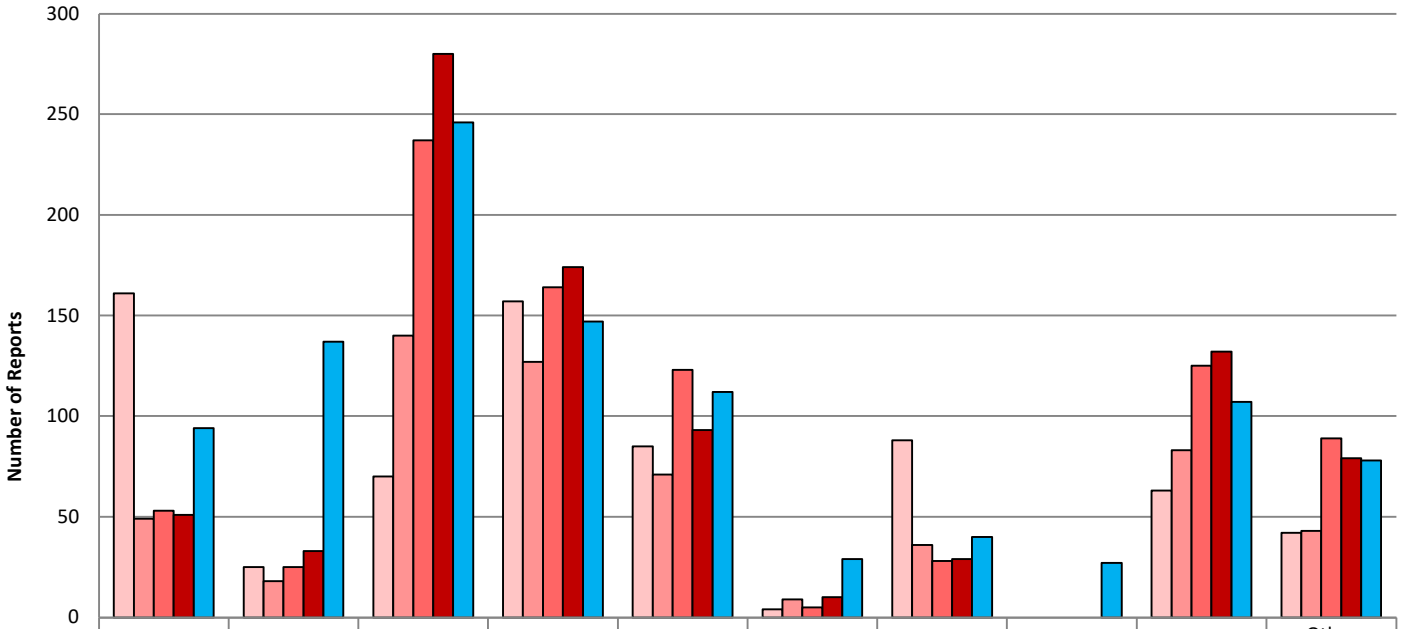
Moderate decreases in reporting from 2023/24 to 2024/25 were seen in NHS Fife (-9%), NHS Grampian (-6%), and NHS Lothian (-6%). For the NHS Western Isles, NHS Shetland and NHS Orkney, the number of reports is overall too low to allow trend analysis however reporting has continued with 175% increase on last year for Orkney while Shetland submitted 24 reports in comparison to no reports in 2023/24. Overall reporting from all other health board areas remained largely unchanged.

Total reporting, both including and excluding reports for COVID-19 vaccines, remains higher than pre-pandemic levels. This may be due to a persistent increased awareness of the Yellow Card Scheme as a result of awareness campaigns conducted during the COVID-19 pandemic.

Further details can be provided to health boards on request.

3b Reporter Groups

Figure 4a - Scotland healthcare professional Yellow Card reports by reporter groups over the last 5 years



	Pharmacy (Hospital)	Pharmacy (Community)	Pharmacy (Other)	Medical (Hospital)	Medical (Community)	Medical (Other)	Nursing (Hospital)	Nursing (Community)	Nursing (Other)	Other Healthcare Professional
2020/21	161	25	70	157	85	4	88	0	63	42
2021/22	49	18	140	127	71	9	36	0	83	43
2022/23	53	25	237	164	123	5	28	0	125	89
2023/24	51	33	280	174	93	10	29	0	132	79
2024/25	94	137	246	147	112	29	40	27	107	78

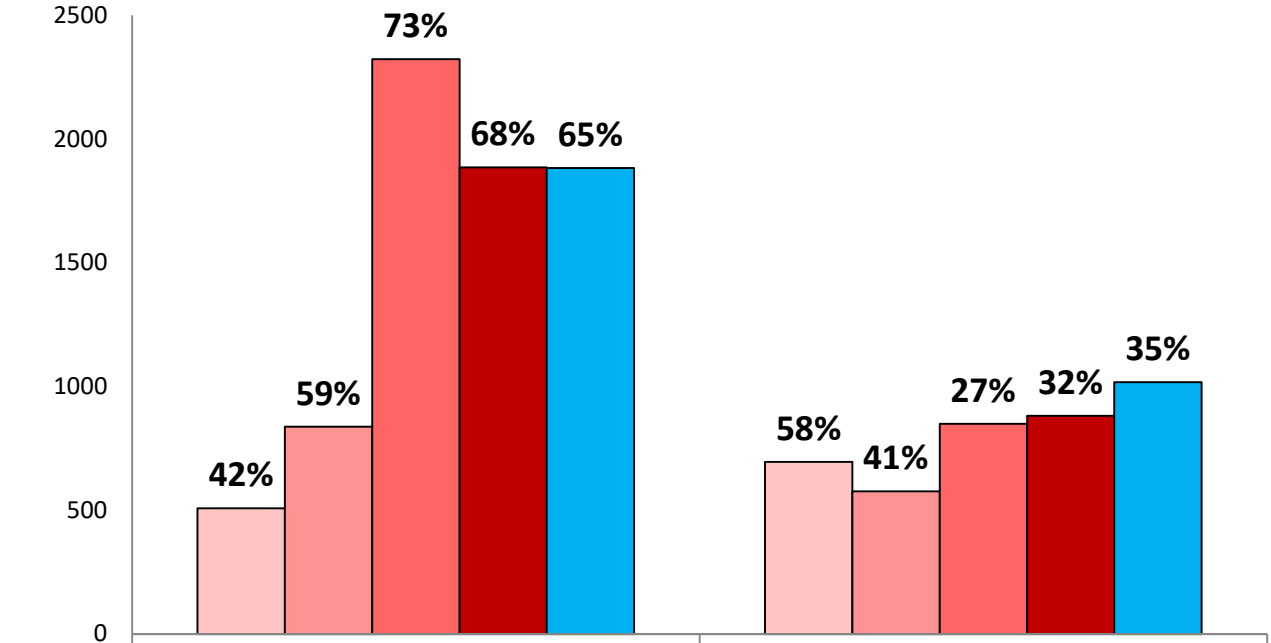
Pharmacy (Other): Pharmacist (not specified); Pharmacy Assistant; Pharmacy Technician; Trainee Pharmacist; Pharmacy Student
Medical (Other): Physician (not specified); Mental Health Physician; Medical Student
Nursing (Other): Nurse (not specified); Midwife (not specified); Student Nurse; Mental Health Nurse
Other Healthcare Professional: Biomedical Scientists; Chiropodist; Dental Care Professional; Dental Nurse; Dentist; Healthcare Assistant; Hospital Healthcare Professional; Optometrist; Other Healthcare Professional; Paramedic; Radiation Safety Physicist; Radiographer; Unknown

Figure 4a shows the contribution of specific healthcare professional reporter groups to the total reports submitted in Scotland over the last five years. These are grouped by profession and subdivided into sector where the data allows.

Healthcare Professionals (HCPs) accounted for 35% of the total reports in Scotland in 2024/25. This is a slight increase from 2023/24, both in the percentage of total reports (from 32% to 35%) and in the overall number of reports from HCPs (from 881 to 1017). This trend is encouraging, and increases can be seen from Medical, Pharmacy, and Nursing professionals.

A further breakdown of healthcare professional reporter groups for 2024/25 is illustrated in **Figure 5**.

Figure 4b - Scotland total Yellow Card reports for patient groups and healthcare professionals over the last 5 years



	Patient Groups	Healthcare Professionals
2020/21	508	695
2021/22	838	576
2022/23	2323	849
2023/24	1886	881
2024/25	1883	1017

Figure 4b shows the proportion of Yellow Card reports submitted over the last five years by patient groups compared with healthcare professionals.

Patient groups, including reports from patients, parents, and carers, accounted for 65% of the total reports in Scotland. Although this is proportionally lower than in 2023/24 (where patient reports accounted for 68% of the total number of reports), the actual number of reports from patients has functionally not changed from 2023/24 (n=1886) to 2024/25 (n=1883), and the proportional change can be attributed to the increase in reports from healthcare professional groups. The fact that patient reporting has remained steady is encouraging, especially following the notable decrease in reports seen the year before from 2022/23 to 2023/24.

A further visual representation of reports submitted by reporter groups is illustrated in **Figure 5**. This includes a breakdown of the 'Other Healthcare Professional' reports, which represents professions which do not sit directly under the primary categories of Medical, Nursing, Pharmacy, or Patient groups. Examples of 'Other Healthcare Professionals' include dentists, radiographers, optometrists, and biomedical scientists, and collectively these constitute 3% of all Scottish reports in 2024/25.

Figure 5 – Percentage of total reports in Scotland for each reporter group

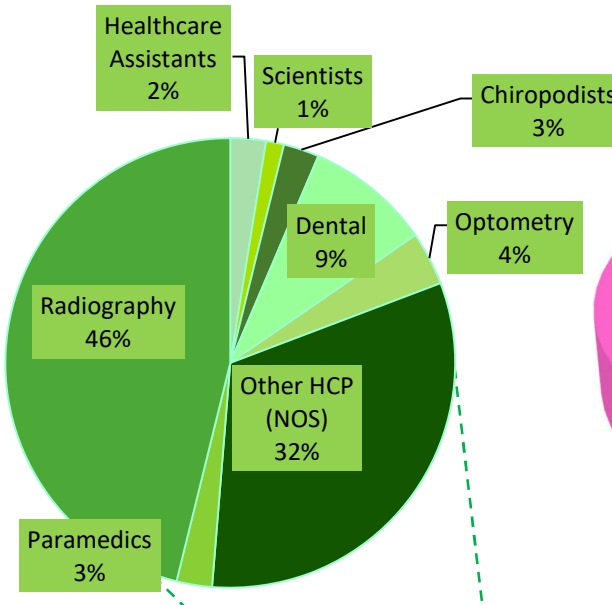


Figure 5a* – Percentage of reports for reporter types categorised as 'other healthcare professionals'

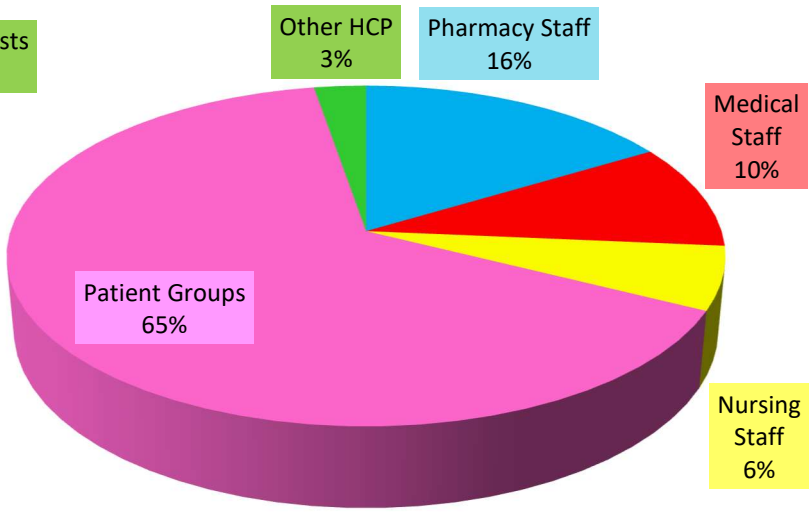


Figure 5b – Percentage of reports for the five primary reporter groups: patient; nursing; medical; pharmacy; and other

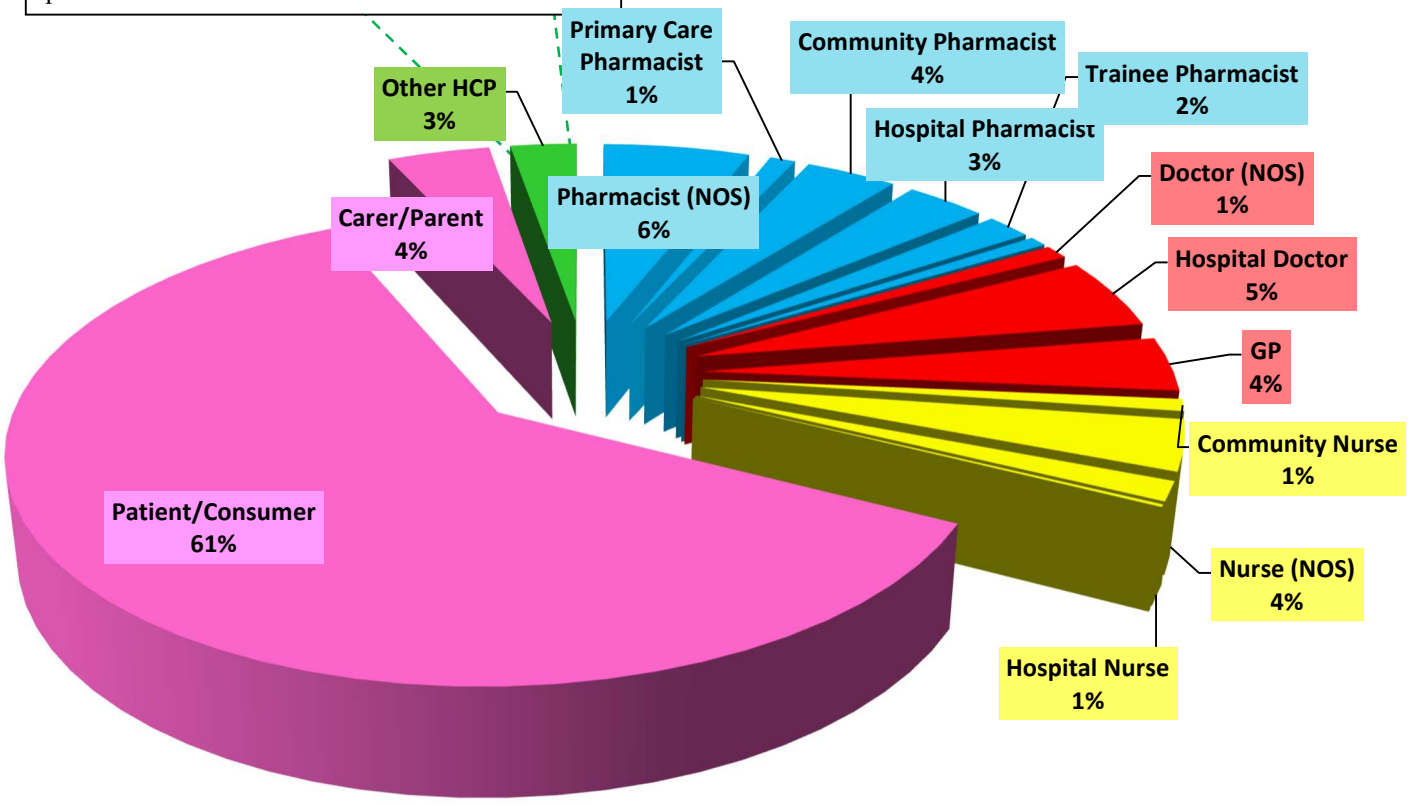


Figure 5c† – Percentage of reports for individual reporter type, coloured to reflect the five primary reporter groups in Figure 5a

†Figure 5c also includes reports of <1% total from Pharmacy Support Staff and Midwives

*Figure 5a includes reports of from the following groups: Healthcare Assistants; Biomedical Scientists; Chiropodists; Dentists & Dental Nurses, & Dental Care Professionals; Optometrists; Paramedics; Radiographers & Radiation Safety Physicists; and other healthcare professionals that are not otherwise specified.

Table 2 - Reports from hospital staff 2024/25 (Scotland)

Health Board Area	Total reports 2024/25	Hospital reports 2024/25	Hospital reports as a % of Board's total reports	
			2023/24	2024/25
NHS Ayrshire & Arran	168	9	10%	5%
NHS Borders	76	5	9%	7%
NHS Dumfries & Galloway	84	9	6%	11%
NHS Fife	189	12	9%	6%
NHS Forth Valley	134	11	13%	8%
NHS Grampian	290	21	6%	7%
NHS Greater Glasgow & Clyde	610	96	11%	16%
NHS Highland	224	21	10%	9%
NHS Lanarkshire	321	29	6%	9%
NHS Lothian	494	46	11%	9%
NHS Orkney	11	0	25%	0%
NHS Shetland	24	4	0%	17%
NHS Tayside	262	22	7%	8%
NHS Western Isles	13	3	31%	23%
Total (Scotland)	**2900**	**288**	**9%**	**10%**

Table 2 shows the number of reports submitted by each health board, and the proportion which originated from reporters who identified specifically as hospital staff in each health board.

NHS hospital staff submitted a total of 288 reports in 2024/25, which accounted for 10% of the total reports for the year. This figure remains largely unchanged compared to hospital based reports from the previous year, where the number was 259 and the proportion or total reports for 2023/24 was 9%.

3c Serious Reports

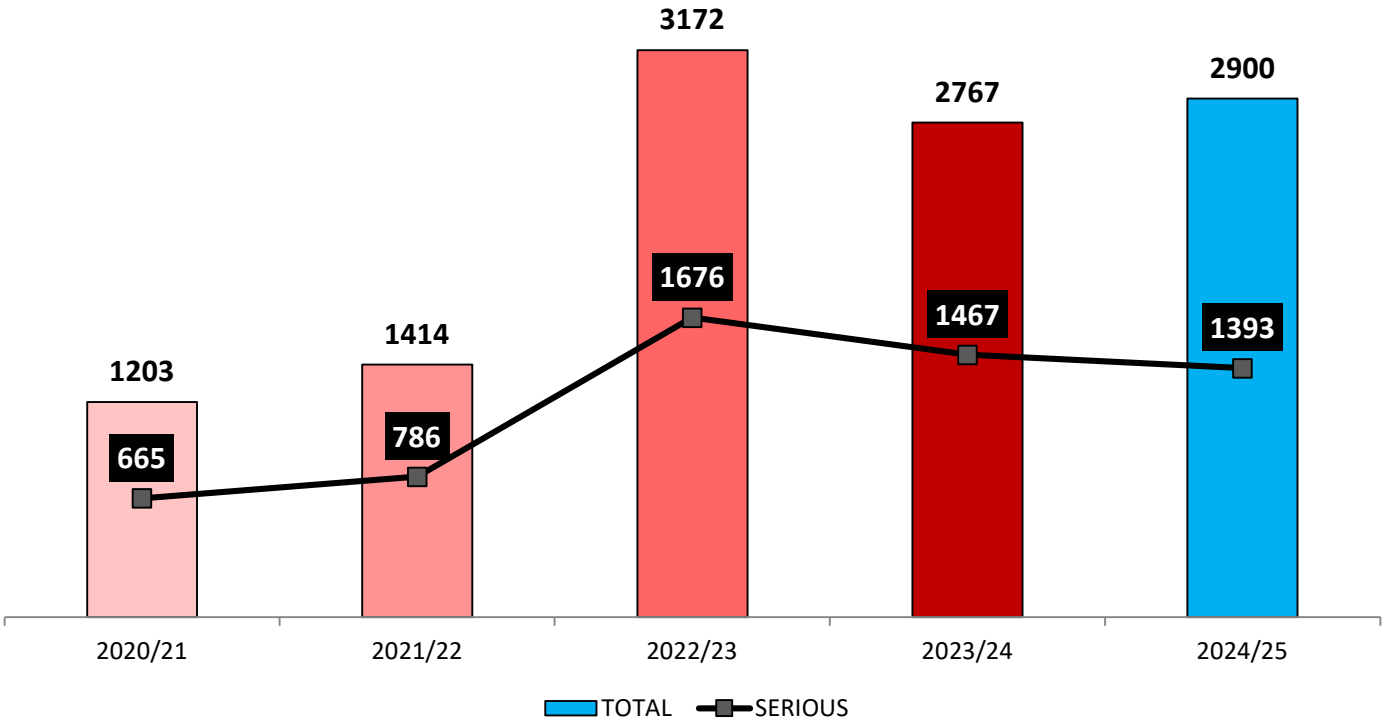
Table 3 - Serious reports over last five years (Scotland)

Year	Number of serious reports	Percentage of total reports	Percentage change on previous year
2020/21	665	55%	−16%
2021/22	786	55%	+18%
2022/23	1676	53%	+113%
2023/24	1467	53%	-12%
2024/25	**1393**	**48%**	**-5%**

Table 3 and **Figure 6** show the number and proportion of reports classed as serious that originated from Scotland in 2024/25, and the trend over the last 5 years. Both the overall number of serious reports and the proportion of the total has decreased by 5% compared to the previous year, both as a change in overall number and as a difference in percentage of the total.

A fatal outcome was reported in only 24 Yellow Card reports in 2024/25. This is a significant decline in reports associated with a fatal outcome when compared to previous years, as shown in **Table 4**, which is somewhat in line with the decrease in serious reports.

Figure 6 - Serious reports as a proportion of total reports from Scotland over the last 5 years



3d Fatal reports*

Table 4 - Number of fatalities reported for Scotland in patients with suspected side-effects in association with medicines over the last five years

Year	Number of fatal reports	% change on previous year
2020/21	33	−21%
2021/22	29	−12%
2022/23	56	+93%
2023/24	74	+32%
2024/25	**24**	**-68%**

*It is important to note that suspected adverse drug reactions do not necessarily have an established causal link between the suspect medicines and the fatal outcome.

3e Age Banding (Scotland)

Tables 5 to 7 and **Figures 8 and 9** show the number of Yellow Cards reported in Scotland, stratified by the patient's age, for the past 3 years.

Table 5 - Age Banding Reports Scotland over the last 3 years

Age Banding	Reports 2022/23	Reports 2023/24	Reports 2024/25
Unknown	618	554	585
Under 2 years	32	38	13
2–6 years	39	37	34
7–12 years	34	34	37
13–17 years	45	30	30
18–24 years	131	124	119
25–34 years	264	250	283
35–44 years	330	234	328
45–54 years	423	319	275
55–64 years	482	378	350
65–74 years	497	473	487
75+ years	277	296	359
TOTAL	**3172**	**2767**	**2900**

Table 6 - Age Banding Paediatric Reports Scotland 2024/25

Age Range	Number of Paediatric Yellow Card Reports	% of Paediatric Yellow Card Reports
Children (0–11 months)	2	2%
Children (12–23 months)	11	10%
Children (2–11 years)	62	54%
Adolescents (12–17 years)	39	34%
TOTAL	**114**	

Table 7 - Age Banding over 65 years Reports Scotland 2024/25

Age Range	Number of over 65 yrs Yellow Card Reports	% of over 65yrs Yellow Card Reports
65–74 years	487	58%
75–84 years	303	36%
85–94 years	51	6%
95+ years	5	<1%
TOTAL	**846**	

Reports of adverse drug reactions that occurred in paediatric patients accounted for 4% of all Scottish Yellow Card reports in 2024/25. Similarly, 29% of all reports were for adverse reactions in patients over 65 years of age.

Over the last 10 years, there has been an overall decreasing trend in reports for adverse drug reactions in paediatric patients, as can be seen in **Figure 7**.

Figure 7 – Paediatric reports based on age ranges in table 6 from 2015/16 to 2024/25

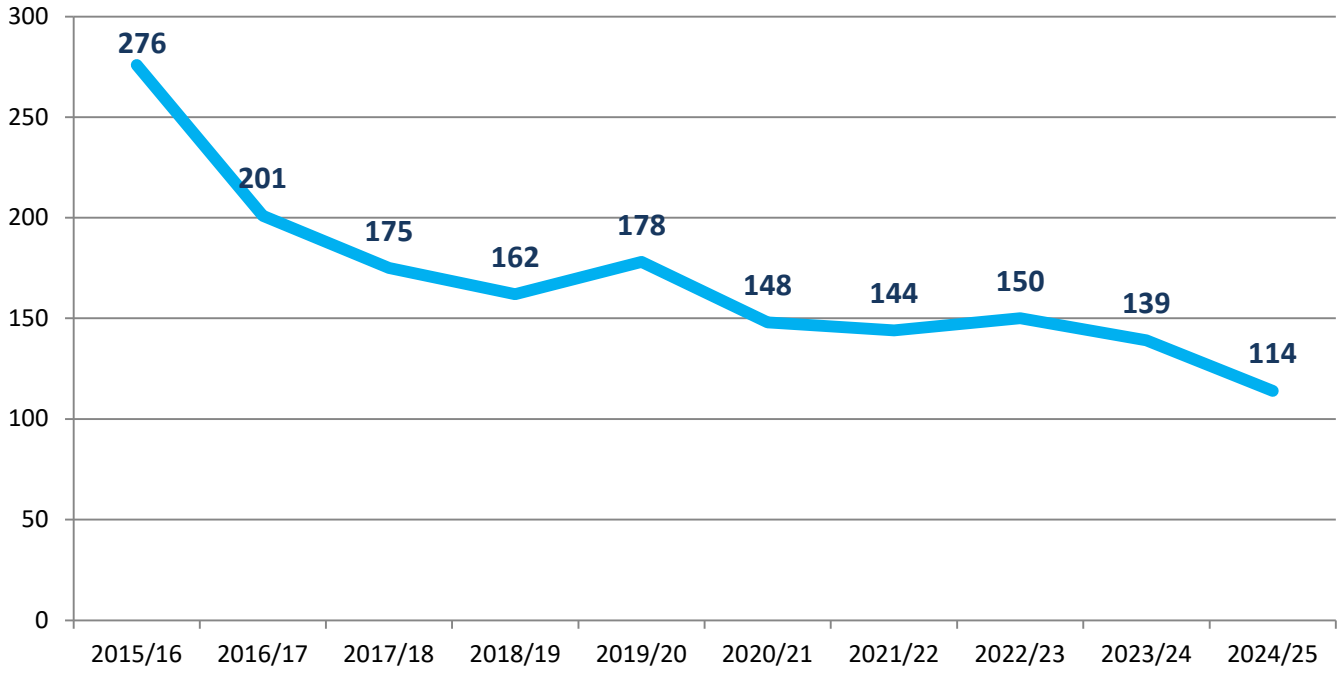


Figure 8 - The percentage of Yellow Card reports from Scotland, stratified by age group over the last 3 years

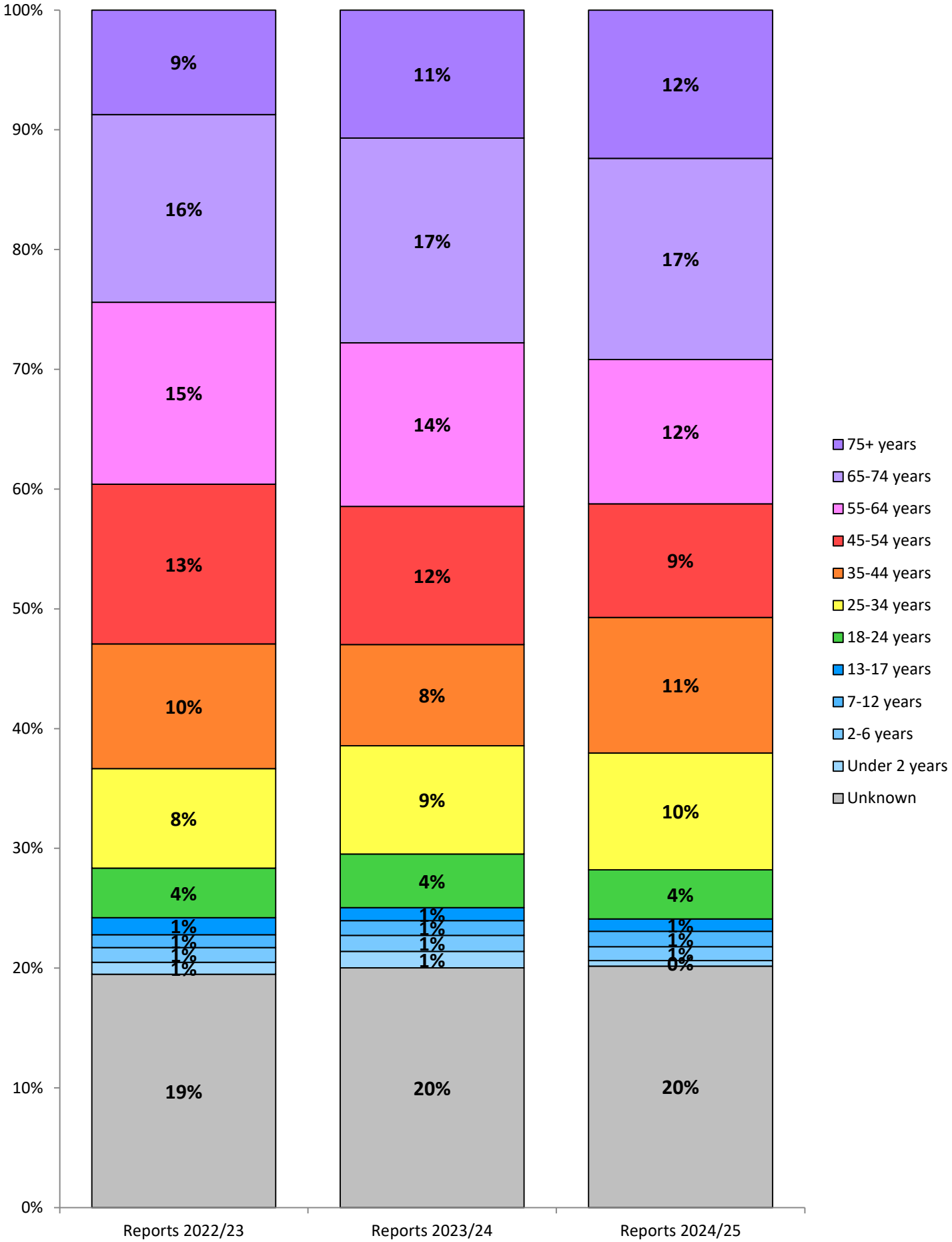
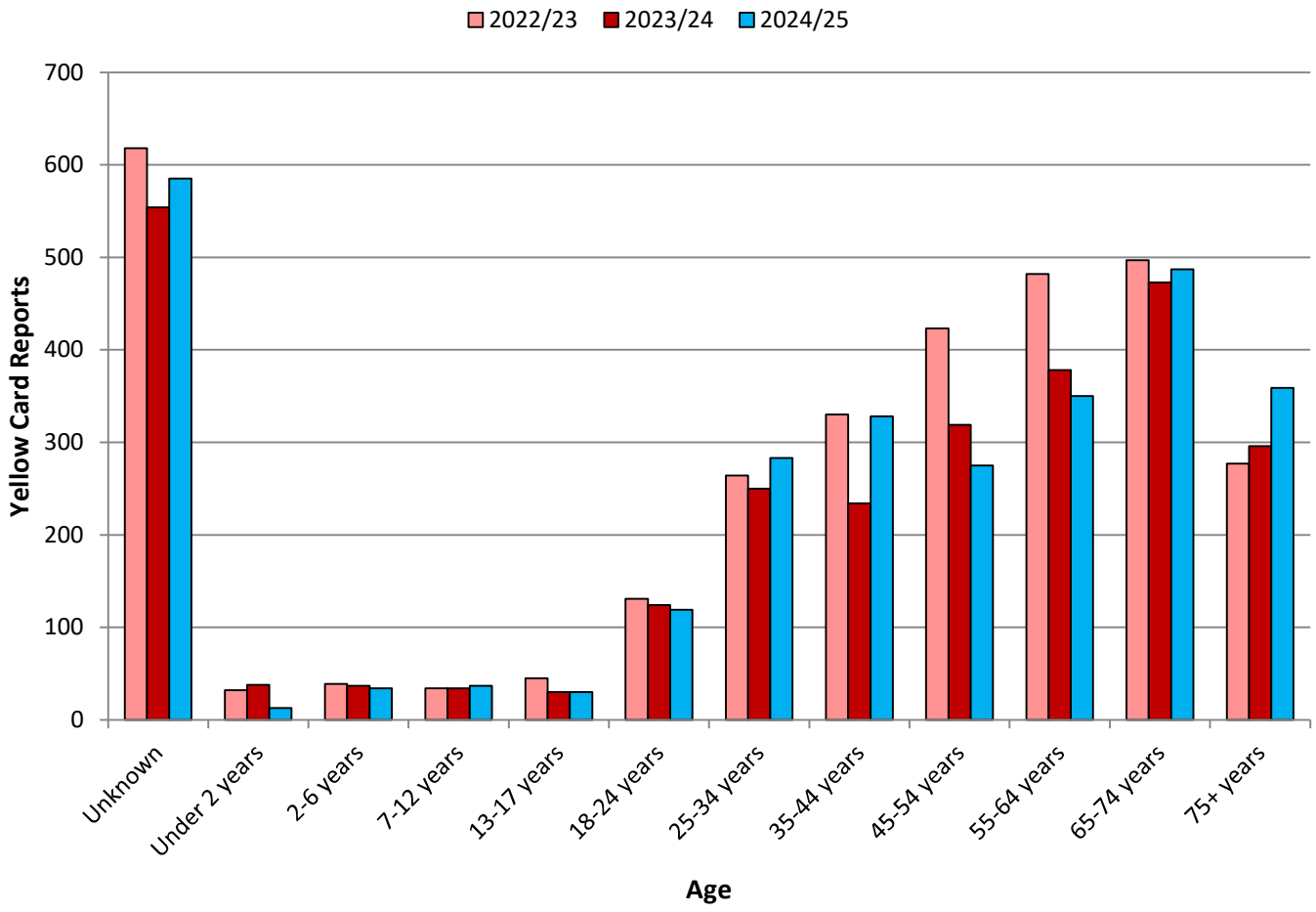


Figure 9 - The number of Yellow Card reports from Scotland for each age group over the last 3 years



3f Top 10 Suspected Medicines

Table 8 - Scottish top ten suspected medicines reported 2023/24 & 2024/25

	2023/24		2024/25	
Rank	**Drug Name**	**Reports**	**Drug Name**	**Reports**
1	COVID-19 Vaccine▼	714	COVID-19 Vaccine▼	799
2	Varicella Zoster Vaccine	168	Tirzepatide▼	489
3	Influenza Vaccine▼	155	Varicella Zoster Vaccine	257
4	Beclometasone/Formoterol ▼	51	Influenza Vaccine▼	248
5	=Semaglutide ▼ =Atorvastatin	38	RSV Vaccine▼	215
6	—	—	Semaglutide▼	154
7	Nirmatrelvir/Ritonavir (Paxlovid) ▼	36	Beclometasone/Formoterol ▼	77
8	Sertraline	34	Sertraline	73
9	Pneumococcal Vaccine▼	33	Pneumococcal Vaccine▼	60
10	Metronidazole	29	Metronidazole	55

Table 9 - Top Five Medicines reported for paediatrics and aged 65+ in 2024/25 (Scotland)

	Paediatrics		65 Years Plus	
Rank	**Drug Name**	**Reports**	**Drug Name**	**Reports**
1	Influenza Vaccine▼	61	COVID-19 Vaccine▼	430
2	MMR Vaccine	14	Varicella Zoster Vaccine	195
3	Sertraline	7	RSV Vaccine▼	176
4	=Ivacaftor/Tezacaftor/Elexacaftor =Montelukast =Varicella Zoster Vaccine	6	Influenza Vaccine▼	93
5	—	—	Pneumococcal Vaccine▼	40

Notes
▼ Black triangle status (medicines subject to additional monitoring) at time of report – in some cases this is brand specific

3g Sources of Reports

Table 10 – Detail for Scottish reports stratified by reporter over last 3 years

Reporter	2022/23		2023/24		2024/25	
	Number	% of total	Number	% of total	Number	% of total
Carer	6	<1%	3	<1%	38	1%
Consumer	75	2%	55	2%	58	2%
Parent	121	4%	98	4%	82	3%
Patient	2121	67%	1730	63%	1705	59%
Community Pharmacist	25	1%	33	1%	107	4%
Hospital Pharmacist	53	2%	51	2%	94	3%
Primary Care Pharmacist	—	—	—	—	30	1%
Pharmacist	192	6%	233	8%	170	6%
Pharmacy Assistant	13	<1%	12	<1%	7	<1%
Pharmacy Technician	—	—	—	—	14	1%
Trainee Pharmacist	32	1%	35	1%	53	2%
Hospital Nurse	28	1%	29	1%	40	1%
Mental Health Nurse	—	—	—	—	6	<1%
Community Nurse*	—	—	—	—	25	1%
Nurse	118	4%	129	5%	97	3%
GP	123	4%	93	3%	112	4%
Hospital Doctor**	164	5%	174	6%	147	5%
Mental Health Physician	—	—	—	—	2	<1%
Physician	2	<1%	3	<1%	25	1%
Paramedic	1	<1%	2	<1%	2	<1%
Dental Healthcare Professionals†	15	<1%	8	<1%	7	<1%
Midwife	7	<1%	3	<1%	5	<1%
Optometrist	3	<1%	4	<1%	3	<1%
Chiropodist	2	<1%	1	<1%	2	<1%
Radiographer	33	1%	28	1%	35	1%
Hospital Healthcare Professional	5	<1%	5	<1%	7	<1%
Healthcare Assistant	11	<1%	5	<1%	2	<1%
Other Healthcare Professional ††	19	1%	26	1%	20	1%
Healthcare Students	3	<1%	7	<1%	5	<1%
Total	**3172**		**2767**		**2900**	

*includes “practice nurse” and “school nurse” | **includes “surgeon” and “anaesthetist” | †includes “dentist”, “dental nurse”, and “dental care professional” | ††includes “biomedical scientists” and “radiation safety physicist” |

3h Types of reports (Scotland)

Table 11 - Report submission routes

Report Type	2023/24		2024/25	
	Number	% of total	Number	% of total
App	475	17%	310	11%
Electronic Yellow Card	2209	80%	2539	88%
MiDatabank (Pharmacy Medicines Information)	12	<1%	12	<1%
Paper	60	2%	21	<1%
Email	0	0%	18	<1%
Vision (GP system)	11	<1%	0	0%

Table 11 shows the ways in which reporters in Scotland submitted Yellow Cards in 2024/25 compared with 2023/24. Reports submitted by paper have declined significantly as the MHRA continues to encourage reports to be submitted via online methods. Reporting from the GP software Vision has stopped altogether due to ongoing technical issues preventing reports from being submitted via this platform. The MHRA continue to discuss software capability with the provider.

4. Discussion of Yellow Card Data

A total of 2900 Yellow Card reports were submitted in Scotland in 2024/25.

Comparing the total number of Yellow Card reports in 2024/25 (n=2900) with 2023/24 (n=2767) shows an overall increase of 5% in Yellow Card reporting. This increase can be largely attributed to a rise in reporting from healthcare professional groups across professions from 2023/24 (n=881) to 2024/25 (n=1017).

Reports for COVID-19 vaccines continue to make up a significant proportion of reports received to the Yellow Card Scheme from Scotland in 2024/25 (n=799), making up over a quarter of all reports (28%).

Reporter Groups Trends:

- **Patient groups:** Reporting by patients, parents, and carers accounted for 65% of the total reports in Scotland. Patient reporting fell for the first time from 2022/23 to 2023/24, but has remained consistent at this new level into 2024/25.
- **Healthcare professionals:** 2024/25 saw a notable rise in reports from healthcare professionals in all major groups compared to 2023/24, including from medical, nursing, and pharmacy groups. Overall, reporting from healthcare professionals increased from 881 in 2023/24 to 1017 in 2024/25.
    - While reporting has increased from medical staff (+4%) and nursing staff (+8%), the most notable increase was seen from pharmacy staff, with an increase of +31% from 2023/24 (n=364) to 2024/25 (n=477).

Health Board Trends:

- **Top 3 reporting health boards (per 100,000 population):** NHS Shetland, NHS Highland, and NHS Borders displayed the highest reporting by population, although it is worth noting that NHS Shetland's small population (~23,000 people) means that very small changes in the number of reports have a significant impact on these figures.
- **National trend:** Fluctuation in reporting was seen across the different health board areas, with some rising and others falling. Significant increases in reporting seen from NHS Dumfries & Galloway (+65%) and from NHS Borders (+62%) offset the moderate decline from NHS Lothian (-6%), NHS Grampian (-6%), and NHS Fife (-9%).

Suspect Medicines:

- **Range of medicines:** It should be noted that, excluding vaccines, the range of suspect medicines reported is very diverse. In 2024/25 there were 460 different suspect non-vaccine medicines reported across all reports, with most suspect medicines associated with only 1 or 2 reports. For vaccines, there were 28 different vaccines reported, with most reports for the COVID-19, varicella zoster, and influenza vaccines. It should be noted that some reports include multiple suspect medicines.
- **Top 10:** In 2024/25, all but one of the top five reported suspect medicines were for vaccines, with most reports for COVID-19 vaccines, followed by tirzepatide, varicella zoster vaccines, influenza vaccines, and respiratory syncytial virus vaccines. Other non-vaccine products in the top 10 are semaglutide, beclomethasone & formoterol, sertraline, and metronidazole.

- **Vaccines:** 1677 reports – COVID-19, varicella zoster and influenza vaccines accounted for the majority of vaccines reports at 1519 reports combined.
  Adverse reactions followed a pattern of predominantly systemic reactogenicity-type reactions, especially headache, fatigue and fever. There was a strong musculoskeletal component to reaction reports, with non-specific limb pain, myalgia and arthralgia reported frequently. Commonly reported gastrointestinal symptoms included diarrhoea and nausea while serious cardiovascular or neurological reactions were comparatively uncommon.

- **Tirzepatide:** 489 reports - First authorised for use in the UK in January 2024, tirzepatide is licensed for the treatment of type 2 diabetes and for weight management. It is therefore subject to additional monitoring with a 'black triangle' annotation and healthcare professionals are asked to report any suspected adverse reactions. A popular medicine provided by both public and private healthcare providers, tirzepatide has been mentioned in MHRA drug safety updates reminding healthcare professionals to inform patients about the common and serious side effects associated with glucagon-like peptide-1 receptor agonists. They also note the risks associated with falsified medicines which is a known issue with tirzepatide use, driven by its popularity as a weight management treatment.
  The reports are dominated by uncomplicated gastrointestinal adverse reactions, with a smaller number of neurological, dermatological, menstrual/reproductive, psychiatric and serious gastrointestinal/hepatobiliary events. There is also a marked predominance of reports in females, with relatively few reports in males.

- **Semaglutide:** 154 reports - Initially authorised for use in the UK as an injection for the treatment of type 2 diabetes, semaglutide is now available in both tablet and injectable form and in 2022 an additional injectable brand became licensed for weight management. It is therefore subject to additional monitoring with a 'black triangle' annotation and healthcare professionals are asked to report any suspected adverse reactions. A popular medicine provided by both public and private health providers, semaglutide has been mentioned in MHRA drug safety updates reminding healthcare professionals to inform patients about the common and serious side effects associated with glucagon-like peptide-1 receptor agonists. Similar to tirzepatide, the MHRA note the risks associated with falsified medicines which is a known issue driven by its popularity as a weight management treatment.
  Reports were predominantly received from females and were largely associated with gastrointestinal adverse effects, particularly nausea, diarrhoea and vomiting. Female-specific reports included menstrual disturbances (delayed menstruation, polymenorrhoea, intermenstrual bleeding and heavy menstrual bleeding). Most reports were received from middle-aged adults, with serious adverse events occurring sporadically across the age spectrum but mainly in individuals aged over 40 years.

- **Beclomethasone/formoterol:** 77 reports - Inhalers containing a combination of both beclomethasone and formoterol received a high number of reports with over 40% of those reports noting the reaction 'cough' which is a known side effect. The additional narrative on the reports included comments on switching of brands and devices. Approximately two-thirds of all reports for these products relate to respiratory symptoms or airway irritation.
  Females contributed more reports than males and most reported reactions occurred in older adults aged 50-75 years. Adults between 32-42 years showed a broader mix

of respiratory and nervous system symptoms. Low numbers of cardiovascular adverse reactions were reported. In general, the reports suggested local airway irritation or inhalation-related adverse effects rather than systemic toxicity.

- **Sertraline:** 73 reports – The adverse reaction profile is characterised primarily by reports of muscle toxicity, including muscular weakness, pain and rhabdomyolysis. Secondary signals include neurological and neuropsychiatric reactions, together with menstrual and sexual dysfunction-related adverse effects. Reports were predominantly submitted for female patients and occurred mainly in young to middle-aged adults.

- **Metronidazole:** 55 reports - The dataset is characterised by a predominance of female reports, and although reports included neuropsychiatric effects, sensory disturbances, nausea, and chromaturia, there were too few to make any strong conclusions. Serious but uncommon events included encephalopathy, angioedema, anuria, and bipolar disorder/depression-related reactions. The reports were largely consistent with the established adverse-effect profile of metronidazole.

- **Paediatrics:** Vaccines, particularly influenza vaccines and MMR vaccines, remain the most commonly reported suspect medicines in paediatric populations, as in previous years. Sertraline, montelukast, and cystic fibrosis combination products are also notably present in the top 5 reported substances for paediatric patients.

Serious ADRS:

- 1393 reports were classed as serious (48% of total), a similar proportion of the total as in previous years. Healthcare professionals are more likely to report serious reactions (i.e. those that are life-threatening, cause or prolong hospitalisation or are debilitating). Patients frequently report non-serious reactions (not life-threatening or resulting in hospitalisation) as serious. This limits interpretation of trends.
- **Fatal:** a fatal* outcome was reported in only 24 of all reports (<1% of total), which is notably lower than the 74 reports with fatal outcomes in 2023/24. The top 3 suspect substances associated with fatal reactions were COVID-19 vaccine, pembrolizumab, and apixaban.

*It is important to note that suspected adverse drug reactions do not necessarily have an established causal link between the suspect medicines and the fatal outcome.

5. Promotional activities

5a Training delivered to healthcare professionals and their respective groups

NES/YCCS ADR e-learning modules
The series of 6 adverse drug reaction modules produced by YCC Scotland and NHS Education for Scotland have a wide reach. In 2024/25, the two core modules were completed by around 1100 users, while the remaining four additional modules were completed by around 950 users.

The modules have a wide reach and are used within advanced prescribing courses across Scotland. They are generally well received, with an average feedback rating of 4.6 out of 5.

Table 12 - Training delivered to healthcare professionals and their respective groups

Audience	Session	Duration (hours)	No of sessions	Total attendees	Total hours Training
Non-Medical Prescribers	ADR & Yellow Card Training Session	2	3	87	6
Healthcare Professionals	National Pharmacy Forum Conference Stand	8	1	~100	8
Healthcare Professionals	Individual Correspondence & Response to Enquiries	0.3	5	5	1.5
Pharmacy Technician Students	Yellow Card Scheme Teaching & Training	1	1	12	1
Healthcare Professionals	Promotional Material Provided	0.25	7	-	1.5
Totals			**7**	**~200**	**18**

Additional activity included a meeting with the Scottish Government to discuss objectives, and the provision of promotional, educational, and informational materials to colleagues throughout NHS Scotland on request.

5b Training delivered to patients and their respective groups

Table 13 - Patient Group Engagement

Audience	Session type	Duration (hours)	Number of sessions	Audience numbers	Total staff hours
Member of the Public	Telephone Conversation	0.25*	8	8	2
Member of the Public	Email Conversation	0.25*	6	6	1.5
*Average number of hours across all instances; actual time spent for each instance ranged from 0.2 hours to 0.4 hours					

YCCS continued to receive queries from the public via email and telephone, and supported members of the public to report suspected reactions to their medications and to seek appropriate medical advice where appropriate.

5c Training delivered to undergraduates

Table 14 - Training delivered to Undergraduates

Audience	Session	Duration (hours)	No of sessions	Total attendees	Total hours
Undergraduate Medical Students	Adverse Drug Reactions	2	2	430	4
Total			**2**	**430**	**4**

In response to the increased dependence on digital solutions for promoting and teaching, YCC Scotland have been working closely with NHS Education for Scotland to review the current e-Learning modules on the TURAS platform and improve accessibility.

6. Publications

- Magavern EF, Hitchings A, Bollington L, Wilson K, Hepburn D, Westacott RJ, Sam AH, Caulfield MJ, Maxwell S. UK Prescribing Safety Assessment (PSA): The development, implementation and outcomes of a national online prescribing assessment. Br J Clin Pharmacol. 2024;90:493–503.

7. YCCS Website/Social Media

7a Website Updates

The YCCS website on SHOW has been maintained and updated to reflect the most current information. GDPR-compliant usage data for 2024/25 has been obtained from the Independent Analytics plugin and can be seen in table 15.

Table 15 – YCCS website usage data 2024/25

Analytics	2024/25
Visitors	865
Views	1608
Sessions	1441
Avg. Session Duration	6 minutes

Most users accessed the website through a direct link (n=862) rather than from Google or social media. The three pages with the most views were the home page for the website (n=1225), the training page (n=128), and the presentations page (n=69).

The month with the largest number of users was October 2024, with 184 visitors and 351 views in the month. Data from previous years is not available for comparison, but comparisons will be made with data from previous years going forward to determine trends in website use.

7b Social Media Statistics

The number of followers for the YCCS X account has fallen by around 100 users from 2023/24 to 2024/25, potentially following an overall trend that is seeing many users migrating away from using X following significant changes to the platform over the last few years.

Administrative changes to the platform now mean that analytics are only available to paying subscribers, and so the number of engagements and impressions can no longer be determined.

8. Research and ongoing initiatives

No research and ongoing initiatives were noted for 2024/25. YCC Scotland continues to be available as a resource and potential collaborator for research and quality improvement projects across Scotland. Scottish health board areas are encouraged to contact YCC Scotland with potential suggestions or ideas for collaboration.

9. Conclusion

It is encouraging to see that patient reporting remained stable in 2024/25, especially following the first ever decline in patient reporting in 2023/24. It is also encouraging to see reporting from healthcare professionals increase across Scotland and, although it is too early to say for certain, it is hoped that this represents the beginning of an upwards trend for reporting from these groups.

YCC Scotland continues to deliver training and promotion and, while online teaching methods remain common since the COVID-19 pandemic, some promotional activities are returning to in-person and face-to-face.

Data from 2024/25 was the first to include the new reporting groups for healthcare professionals, and it was interesting to see reports from groups that, until now, have gone unrepresented within the data, such as primary care pharmacists, healthcare scientists, and specialised nursing professions.

The team will use the data and analysis from this report to inform planning for 2025/26, including how to address upcoming issues relating to drugs used for weight loss, and the related trend of medicinal products being obtained online.

Medical device reporting from healthcare professionals in Scotland remains the remit of the Incident Reporting and Investigation Centre (IRIC). YCC Scotland will continue to maintain strong links with IRIC and the two centres will continue working together to improve medical device reporting across Scotland for patients and healthcare professionals alike.

Moving forward, YCC Scotland will focus on harnessing innovative technology in collaboration with key stakeholders across Scotland and the wider UK with a focus on supporting real-time, integrated digital reporting in clinical settings while also improving communications on medicines safety to patients and professionals.

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- Sue Cole, Patient Representative
- Peter Hamilton, Principal Lead for Professional Development, NHS Education for Scotland
- Scott Hill, Area Drug and Therapeutics Committee Collaborative National Clinical Lead
- Susan Lloyd-MacGilp, Incident Reporting & Investigation Centre (IRIC) Co-ordinator
- Professor Tom MacDonald, Professor of Clinical Pharmacology & Pharmacoepidemiology, University of Dundee
- Catriona Sinclair, Community Pharmacy Scotland (CPS) Representative

Abbreviations and descriptions

YCCS	Yellow Card Centre Scotland
YC	Yellow Card
ADR	Adverse Drug Reaction
HCP	Healthcare Professional
ADTC	Area Drug & Therapeutics Committee
NES	NHS Education for Scotland
TURAS	NHS Education for Scotland's single, unified platform
UG/PG	Undergraduate/Postgraduate
MHRA	Medicines and Healthcare Products Regulatory Agency