

Yellow Card Centre North West

ANNUAL REPORT

TO THE MEDICINES AND HEALTHCARE
PRODUCTS REGULATORY AGENCY

2022/23

YELLOW CARD CENTRE NORTH WEST

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1. STAFF

Dr Lauren Walker – Medical Director
Christine Randall – Senior Medicines Information Pharmacist
Helen Edmondson – Medicines Information Technician

2. EXECUTIVE SUMMARY

In 2022/23 a total of 7,581 Yellow Cards (YCs) were submitted by health professionals, patients and carers from Yellow Card Centre North West (YCCNW). This is a 96% increase on 2021/22, however this total includes all COVID-19 vaccine reports. If COVID-19 vaccine reports are not included the total is 5,264, this is up 36.7% compared to 2021/22 and by 26.9% compared to five years ago. [Note all totals include COVID-19 vaccine reports unless stated otherwise].

Patient/carer reporting rose by 207% in 2022/22, accounting for 45% of reporting, over half of these reports related to COVID-19 vaccine. Reporting from most healthcare professionals increased this year, including by hospital pharmacists 2,113 reports (up 83%), pharmacy technicians 435 reports (up 48%), hospital nurses 232 reports (up 18%), primary care nurses 179 reports (up 74%), GPs 241 reports (up 34%), hospital doctors 207 reports (up 18%). Reporting by trainee pharmacists went down by 25%.

Serious adverse drug reactions (ADRs) accounted for 53% of all reports (5 reports [0.1% of serious reports] had a fatal outcome).

The top reported suspect drug was COVID-19 vaccine (all brands) with 2,137 reports. Six of the 2022/23 top ten suspect drugs appeared in the 2021/22 top ten; influenza vaccine, apixaban, atorvastatin, sertraline, edoxaban and phenoxymethylpenicillin.

Reporting of ADRs via YCs embedded in electronic healthcare systems account for 21% of all our reports. Current systems in use in the North West are MiDatabank (pharmacy medicines information system) which contributed 1,344 reports (64% of hospital pharmacy reports), SystemOne (GP patient management system that is also used in prisons, custody centres and some hospices) which contributed 339 reports, up from 267 reports last year, 98 EMIS (GP patient management system), up from 73, 0 Vision (GP patient management system) and 2 CERNA (secondary care electronic patient management system). 43% of North West GP reports were made using SystemOne, EMIS or Vision.

The North West-wide network of Yellow Card Champions met twice via Teams in 2022/23. 28 trusts/organisations in the North West engage with the Champions network.

YCCNW continues support local reporters, health professionals, students and patients. In 2022/23 14 training sessions were provided virtually, 2 sessions were pre-recorded for upload to educational institutions and 2 were face to face lectures. Over 500 individuals engaged.

In 2022/23 YCCNW continued to support reporting to the Yellow Card Scheme:

- locally by providing quarterly feedback to NHS Trusts on their reporting.
- nationally by contributing review of medication safety alerts, communications and publications for the monthly MSO WebEx event facilitated by NHS England.
- Supporting the North West MRC Fellowship Scheme in Clinical Pharmacology by providing 'Current issues in Pharmacovigilance' sessions
- Supporting new Champions with one to one support and training slides
- Participating in and supporting the MHRA initiative to improve information on ADRs and the Yellow Card Scheme to children and young people.

- on social media via our Twitter account @yellowcardnw and Instagram account.

COVID-19 vaccine reports

In 2022/23 COVID-19 vaccine reports have, for the first time, been integrated into all sections of the report. This has resulted in a large apparent increase in reporting for almost all analyses, tables and graphical representation.

3. YELLOW CARD DATA

- **ADR reports received**

Overall 7,581* reports of suspected ADRs were made by healthcare professionals and patients/carers from the YCCNW region in 2022/23. Table 1 highlights the total number of reports originating from the YCCNW region for the past five years and Figure 1 is a graphical representation of this data. Figure 2 shows the split by reporter type for Yellow Card reports originating in the YCCNW region in 2022/23 and Figure 3 compares the number of reports for each reporter type received in 2022/23 with those received in the previous four years.

***Note** that in 2022/23 COVID-19 vaccine reports have been included in total reports

Table 1. The total number of reports and percentage change over the last five years from the YCCNW region.

Year	Number of reports	Percentage change on previous year
2022/23	7,581*	+96.0%
2022/23 no COVID-19 vaccine reports	5,264	+36.7%
2021/22	3,851	-4.8%
2020/21	4,044	-16.8%
2019/20	4,859	+17.1%
2018/19	4,148	+5.4%

Figure 1. Line graph summarising the total number of reports originating from the YCCNW region for the past five years.

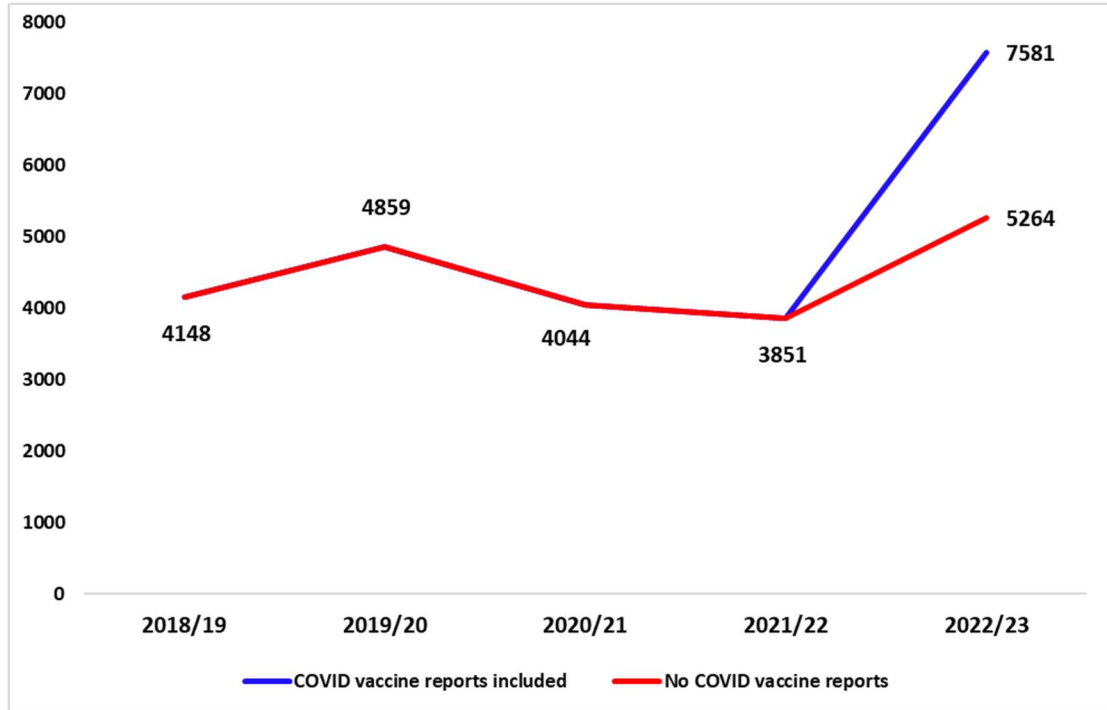


Figure 2. Percentage of Yellow Card reports that originated from the YCCNW region for each reporter group in 2022/23.

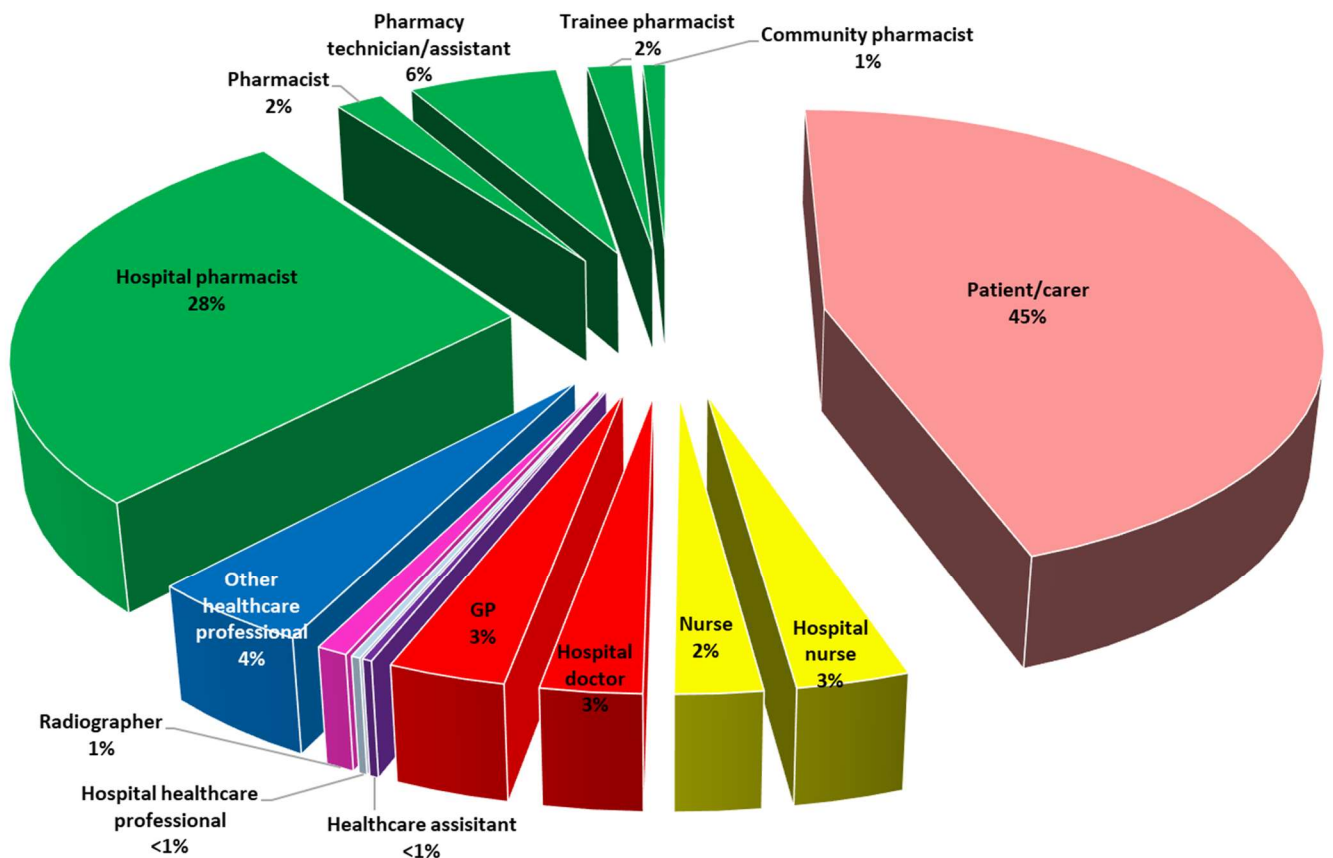
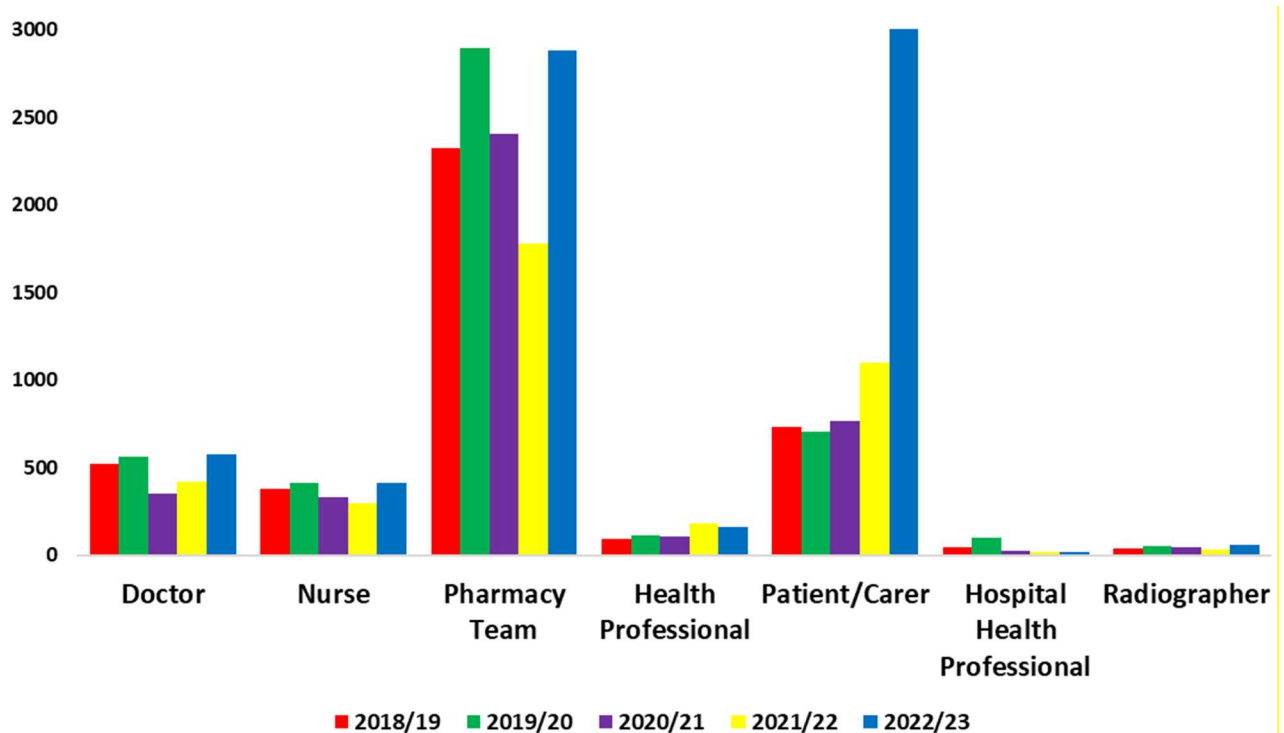


Figure 3. Number of Yellow Card reports received from each reporter group in 2022/23 compared with the previous four years.



- Serious reactions**

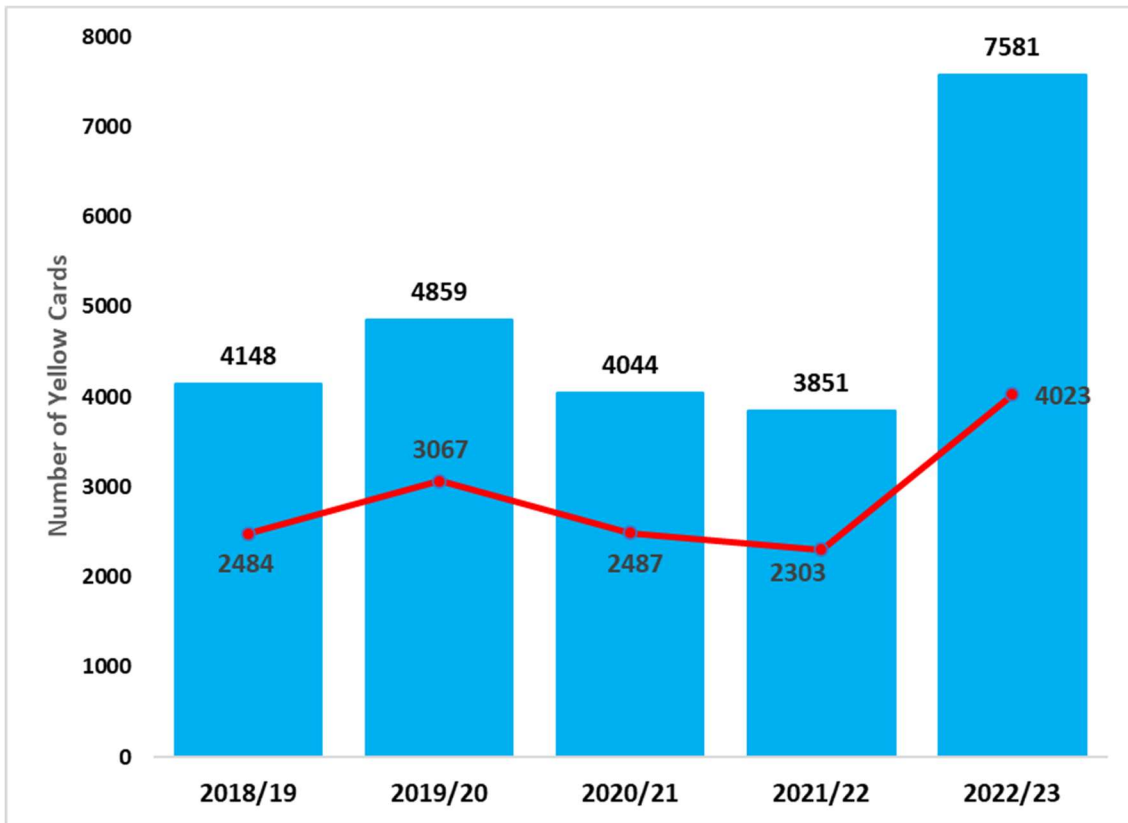
Total number of reports classified as serious that originated from the YCCNW region in 2022/23 and comparative data for previous years are shown in Table 2 and displayed graphically in Figure 4. A fatal outcome was reported on 5 Yellow Cards in 2022/23.

Note that in 2022/23 COVID-19 vaccine reports have been included in serious reports

Table 2

Year	Number of serious reports	Percentage of total reports	Percentage change on previous year
2022/23	4,023	53%	75%
2021/22	2,303	60%	-7.4%
2020/21	2,487	61%	-18.9%
2019/20	3,067	63%	23.5%
2018/19	2,484	60%	6.4%

Figure 4. Serious Yellow Card reports as a proportion of total reports from 2018/19 to 2022/23 for the YCCNW region.



- Fatal reports**

Total number of fatalities that were reported from within the YCCNW region in 2022/23 and comparative data from previous years are shown in Table 3.

Table 3

Year	Number of fatal reports	Percentage change on previous year
2022/23	5	- 88
2021/22	41	-34.9
2020/21	63	+12.5
2019/20	56	+3.7
2018/19	54	-12.9%
2017/18	62	+67%
2016/17	37	-13.9%

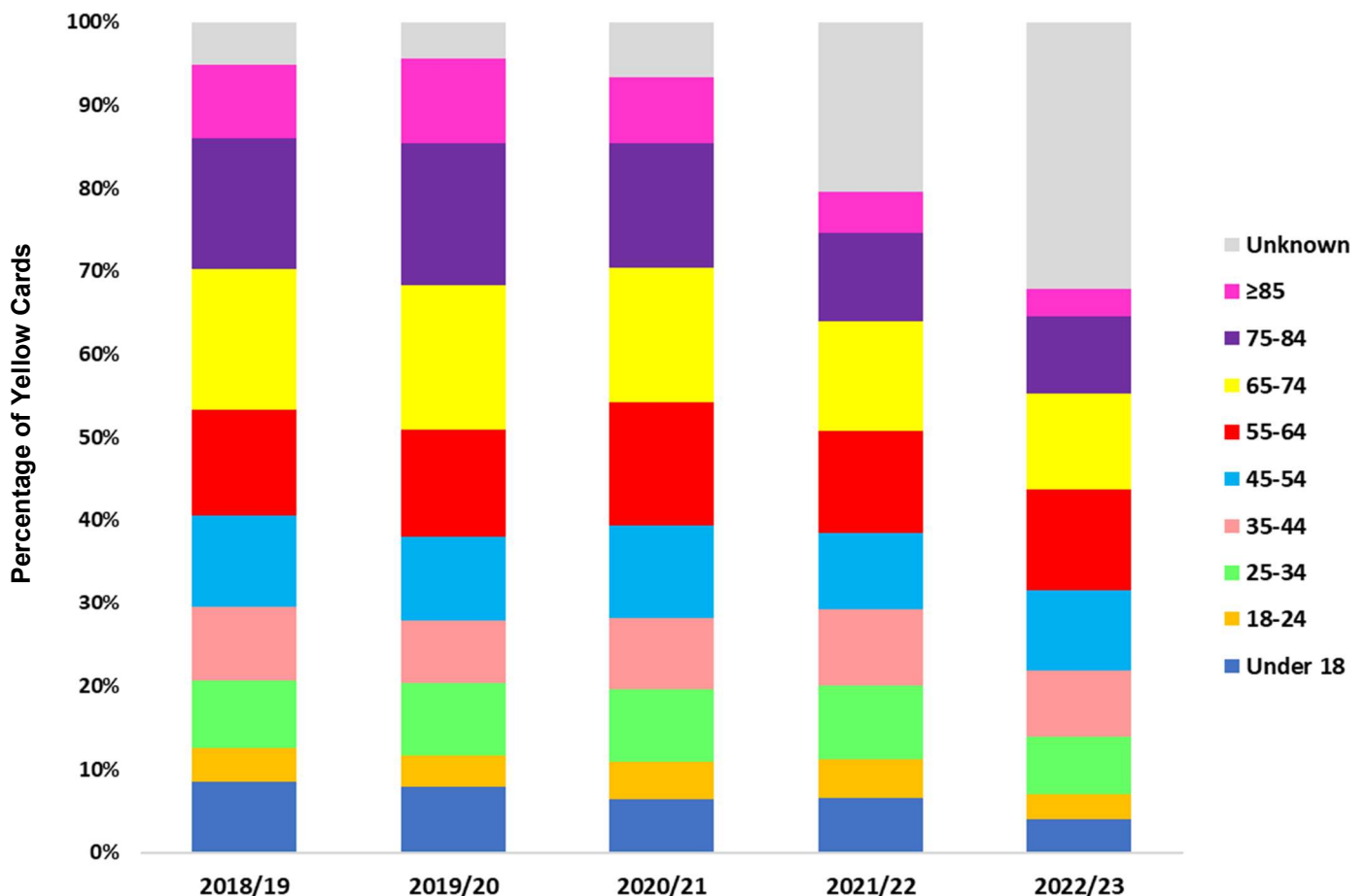
- **Age breakdown**

Table 4 shows the number of Yellow Cards originating from within the YCCNW region stratified by patient age at time of reaction, 2018/19 to 2022/23. Figure 5 is a graphical representation of this data.

Table 4

Age band (years)	2018/19	2019/20	2020/21	2021/22	2022/23
Under 2	98	102	65	61	78
2-6	89	88	47	59	60
7-12	71	79	50	52	71
13-17	97	112	95	82	92
18-24	165	183	184	175	234
25-34	334	424	350	345	520
35-44	367	367	349	350	604
45-54	464	492	451	357	740
55-64	525	625	605	474	912
65-74	704	849	653	510	875
75-84	653	827	608	409	705
≥85	371	502	318	189	250
Unknown	210	209	269	788	2,440
Total	4,148	4,859	4,044	3,851	7,581

Figure 5. Percentage of Yellow Card reports that originated from the YCCNW region, stratified by age group from 2018/19 through to 2022/23.



- **Top ten drugs**

Table 5 lists the top ten reported suspect drugs originating from within the YCCNW region for 2022/23. Overall there were 8,176 suspect drugs reported on 7,581 Yellow Cards. The top ten suspect drugs accounted for 44% of total suspect drugs reported on a Yellow Card. Table 6 contains the top ten reported suspect drugs originating from within the YCCNW region for 2021/22; these drugs accounted for 21% of total suspect drugs reported on a Yellow Card in 2021/22.

Table 5. The top ten reported suspect drugs for Yellow Cards that originated from the YCCNW region in 2022/23.

Drug name	Number of times reported as a suspect drug (2022/23)
COVID-19 vaccines (▼)	2,137
Influenza vaccines (some▼)	168
Apixaban	152
Atorvastatin	128
Sertraline	106
Phenoxymethylpenicillin	101
Edoxaban	94
Aspirin	85
Ramipril	82
Lansoprazole	73
Total	3,306

Table 6. The top ten reported suspect drugs for Yellow Cards that originated from the YCCNW region in 2021/22.

Drug name	Number of times reported as a suspect drug (2021/22)
Influenza virus (some▼)	180
Apixaban	135
Adalimumab (some▼)	84
Phenoxymethylpenicillin	66
Sertraline	60
Edoxaban	56
Warfarin	51
Atorvastatin	51
Nitrofurantoin	50
Flucloxacillin	48
Total	768

- Source of reports

Table 7 Number of Yellow Cards originating from within the YCCNW region stratified by reporter type from 2020/21 to 2022/23.

Reporter	2020/21		2021/22		2022/23	
	Number	% of total	Number	% of total	Number	% of total
Carer	37	0.9%	40	1.04%	9	0.12%
Parent	63	1.5%	91	2.36%	171	2.26
Patient	670	16.6%	972	25.24%	3,211	42.12
Community Pharmacist	59	1.4%	50	1.3%	66	0.87
Hospital Pharmacist	1,619	40%	1,153	29.94%	2,113	28.1
Pharmacist	120	2.97%	107	2.78%	139	1.83
Pharmacy Technician/assistant	471	11.6%	294	7.63%	435	5.74
Trainee pharmacist	136	3.3%	176	4.57%	131	1.73
Hospital Nurse	205	5%	197	5.12%	232	3.06
Nurse	128	3.1%	103	2.67%	179	2.36
GP	189	4.7%	180	4.67%	241	3.18
Hospital Doctor	153	3.8%	176	4.57%	207	2.73
Physician	10	0.25%	62	1.61%	130	1.72
Coroner	0	0.0%	3	0.08%	3	0.04
Dentist	15	0.37%	61	1.58%	17	0.22
Midwife	4	0.1%	4	0.1%	6	0.08
Optometrist	3	0.07%	3	0.08%	2	0.03
Paramedic	5	0.12%	7	0.18%	9	0.12
Radiographer	47	1.16%	36	0.93%	64	0.84
Hospital Healthcare Professional	24	0.59%	18	0.47%	19	0.25
Healthcare Assistant	5	0.12%	1	0.03%	20	0.26
Other Healthcare Professional	75	1.85%	107	2.78%	166	2.19
Medical Student	3	0.07%	5	0.13%	8	0.11
Other	3	0.07%	5	0.13%	3	0.04
Total	4,044	100.0%	3,851	100%	7,581	100%

Green – increasing figures
 Red – decreasing figures
 Black – no changes

- **Type of report**

Table 8 shows the method used to report an ADR to the Yellow Card Scheme in 2022/23.

Table 8. Number of Yellow Card reports from each reporting method originating from the YCCNW region in 2022/23.

	Number of reports	Percentage of total reports
Electronic Yellow Card	4111	54%
MiDatabank (Pharmacy medicines information)	1344	18%
APP	950	12.5%
SystemOne (1° care patient management system)	339	4.5%
EMIS (1° care patient management system)	98	1.3%
Paper	68	1%
APPCOV (COVID report App)	33	0.5%
CERNER (2° care electronic patient record system)	2	<0.1%
Vision (1° care patient management system)	0	0%
Unknown (COVID-vaccine reports Q1)	636	8.4%

4. DISCUSSION OF YELLOW CARD DATA

Yellow Card reports originating from the YCCNW increased this year, up by 96% in 2022/23 and by 26.9% compared to five years ago. The large increase in total reports reflects the inclusion of COVID-19 vaccine reports. Despite this, and when COVID-19 vaccine reports are subtracted, the large increase in reporting across all reporter groups this year suggests a transition back to pre-pandemic working and ADR reporting.

For the first time patient/carer reporting accounted for the highest percentage of reports, 45% in 2022/23 compared to 29% in 2021/22. Adjusted to account for COVID-19 vaccine reports the percentage of patient reports remains 29%.

We received 3,162 reports from acute trusts, 42% of all reports. 595 (8%) reports came from primary care, 156 (2%) from community/mental health trusts, 61 (0.8%) from prisons/custody centres, 49 (0.6%) from private organisations and 30 (0.3%) classed as 'other'.

Within the acute sector pharmacy teams continue to lead reporting within their trusts. Hospital pharmacists continued to report more YCs than any other healthcare professional group making 2,113 reports (up 83%), accounting for 28% of all reports; pharmacy technicians/assistants made 413 reports (up by 40%) and trainee pharmacists 117 reports (down by 33%). 51% of acute sector pharmacy team reports were made via MiDatabank, 47% electronically through the Yellow Card web portal and 1.3% via the YellowCard App. This high level of reporting continues to reflect the commitment and enthusiasm of the pharmacy teams who engage with the North West Champions network. This commitment could not be achieved without the support and encouragement provided by Chief Pharmacists and their senior teams. Hospital doctor reporting also increased to 207 reports, an 18% increase.

Reporting also went up following reporter categories; hospital nurses 232 reports (up 18%), primary care nurses 179 reports (up 74%), GPs 241 reports (up 34%), community pharmacists 66 reports (up by 32%), physicians 130 reports (up by 110%), midwives 6 reports (up by 50%), paramedics 9 reports (up by 29%), radiographers 64 (up by 78%), healthcare assistants 20 (up by 1900%), other healthcare professionals 166 (up by 55%) and medical students 8 (up by 60%) The only groups with a fall in reporting were trainee pharmacists (down by 25%), optometrists and dentists. Dentist reporting remains an anomaly due to technical issues at the MHRA extracting the data.

Reporting via electronic healthcare systems with embedded YCs continues to increase and they now contribute 25% of all YCCNW reports (1,873 YC reports), contributions from each are:

- 1,344 MiDatabank (pharmacy medicines information system),
- 339 SystmOne (GP patient management system). Also used in prisons, custody suites, minor injuries units and hospices.
- 98 EMIS (GP patient management system). EMIS is the most prevalent GP management system in the North West and reporting via this interface is increasing following introduction of an embedded Yellow Card in February 2020.
- 2 Cerner (secondary care patient management system)
- 43% of North West GP reports were made using SystmOne or EMIS.

Reporting via the APP continues to increase, 983 reports in 2022/23, up by 681 (225% increase) compared to 2021/22. 854 (87%) of APP reports were made by patients/parents and 59 (6%) came from secondary care.

The top reported suspect drug in 2022/23 was COVID-19 vaccine (all brands) with 2,137 reports. Last year COVID-19 vaccine reports were not included in the top ten; there were 24,810 reports in 2021/22. Influenza vaccine, with 168 reports was number two, in 2021/22 it was the most reported drug with 180 reports. Six of the 2022/23 top ten suspect drugs appeared in the 2021/22 top ten; influenza vaccine, apixaban, atorvastatin, sertraline, edoxaban and phenoxymethylpenicillin.

Serious adverse drug reactions (ADRs) accounted for 75% of all reports (5 reports [0.1% of serious reports] had a fatal outcome). Black triangle drugs in the top ten include COVID-19 vaccines and some of the influenza vaccines.

The number of reports submitted with no patient age has risen by over 800% in the last two years. This may reflect changes to reporting platforms.

301 reports related to children under the age of 18 years, 49% of these reports related to vaccines and 13% related to antimicrobials.

Observations and associations in 2022/23:

- 152 reports listed apixaban as the suspect drug, 89% of these reports were made by hospital the pharmacy teams. The apixaban reports included 111 of suspected haemorrhage/bleeding reactions and 10 suspected to be associated with a thromboembolic event.
- 27 (41%) of 66 community pharmacy team reports were to vaccines, including 24 for COVID-19 vaccines. Probably a reflection of the increasing role of community pharmacists in delivering vaccinations.
- Of 241 reports made by GPs 25 (10%) were to antimicrobials, 105 (44%) were to vaccines
- Radiographers made 64 reports of which 3 described anaphylactic reactions or allergy and 32 described other hypersensitivity reactions (rash, urticaria, pruritis, hypersensitivity)
- Nine cases of serious skin reactions were reported: 1 of erythema multiforme (Covid-19 vaccine), 3 of toxic epidermal necrolysis (cyclizine x2, citalopram), 3 of Steven's Johnson Syndrome (codeine, naproxen, cytarabine) and 2 of necrotising fasciitis (dapagliflozin, empagliflozin).
- 12 reports list myocarditis as the suspected reaction: 4 to clozapine, 2 to atorvastatin, 2 to COVID-19 vaccine, 1 to atezolizumab, 1 to infliximab, 1 to nivolumab, and 1 to pembrolizumab
- 18 reports were for ECG QT interval prolongation suspected to be associated with medication, these included; 5 clarithromycin, 4 antidepressants, memantine, tramadol, baclofen, aspirin, calcipotriol, ondansetron, ranolazine, methadone and quinine.
- 78 reports were for acute kidney injury these included: 20 ACEI/ARBs, 7 loop diuretics,
- Of 3,391 patient/carer reports over half listed one of the COVID-19 vaccines as the suspect drug.

5. SUMMARY OF OTHER YELLOW CARD DATA (medical devices etc) AND DISCUSSION

In 2022/23 no medical device data from the YCCNW region is available for analysis.

6. PROMOTIONAL ACTIVITIES

- **Training delivered**

Training carried out during 2022/23 was almost exclusively undertaken remotely and is detailed in Tables 9 and 10. Table 9 contains data relating to training of healthcare professionals, table 10 contains data relating to training undergraduates. No training sessions for patients were undertaken.

Table 9. Training provided to healthcare professionals in 2022/23

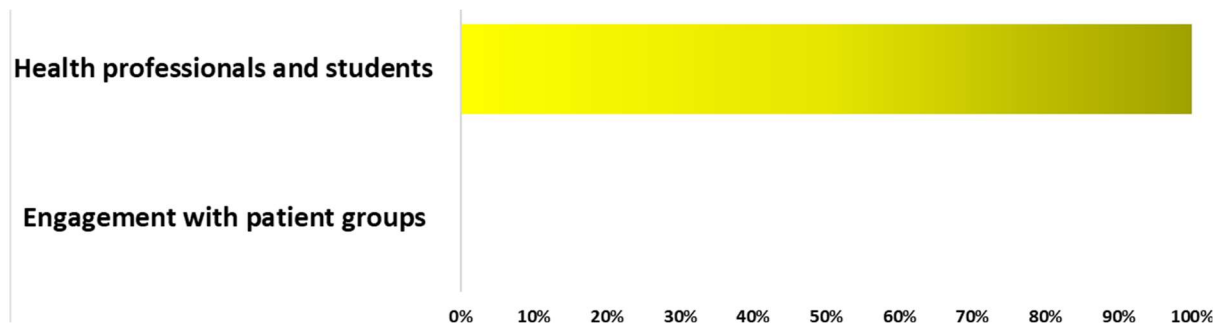
Audience type	Session type	Duration (hours)	Number of sessions	Total audience numbers	Total hours training
Dentists	Lecture	0.5 hours 0.25 hours	3 2	200 (virtual)	2
Dentists – foundation trainees	Lecture	0.5 hours	1	15 (virtual)	0.5
MRC fellows	Lecture	1 hours	2	20 (virtual) 12 (face to face)	2
Paediatric clinical pharmacologists	Lecture	1 hour	1	12 (face to face)	1
PCN	Lecture	1 hour	1	60 (virtual)	1
Pre-registration pharmacists	Lecture	1 hour	1	25 (virtual)	1
Hospital pharmacy team	Lecture	1 x 0.75 hours 1 x 1 hour	2	80 (virtual)	1.5
One to one teaching session	Teams call	1 hour	1	1	1
Totals			14	425	10

Table 10. Training provided to undergraduates in 2022/23

Audience type	Session type	Duration	Number of sessions	Total audience numbers	Total hours training
Dental undergraduates	Lecture	0.5 hours	1	Online - uploaded	0.5
Medical students	Lecture	1.0	2	Online - uploaded	2
Pharmacy students	Lectures/study day	1.25	2	57 (Virtual)	2.5
Totals			5	57	5

Table 11. Training provided to patients in 2022/23
None

Figure 6. Graphical summary compared against agreed objectives



- **Meetings attended**

None

- **Lectures delivered (invited)**

Bradford University pharmacy student YC champion event – national event run virtually, co-ordinated by Bradford with presentations by Christine Randall, YCC NW and Mitul Jadeja, MHRA (57 participants from pharmacy schools in all 4 devolved administrations).

- **Materials developed/maintained to promote YCS**

SPS Website COVID-19 vaccine support - **Reporting suspected COVID-19 vaccine side effects, and potential product defects or counterfeit products** - Ongoing update in 2022/23

Training materials used to deliver educational sessions on ADRs and the Yellow Card scheme continue to be updated, with PowerPoint presentations tailored to the audience and medium.

7. PUBLICATIONS (2022/23)

- Woodall A, Prosser A, Griffiths M, Shooter B, Garfitt J, **Walker LE**, Buchan I. Cardiovascular risk estimation in rural psychiatric inpatient populations: Cross-sectional preliminary study. *Psychiatry Research Communications* 2023 (3)1
- Fahmi A, Wong D, **Walker L**, Buchan I, Pirmohamed M, Sharma A, et al. (2023) Combinations of medicines in patients with polypharmacy aged 65–100 in primary care: Large variability in risks of adverse drug related and emergency hospital admissions. *PLoS ONE* 18(2)
- Kuan V, Denaxas S, Patalay P, Nitsch D, Mathur R.... **Walker LE** et al. Identifying and visualising multimorbidity and comorbidity patterns in patients in the English National Health Service: a population-based study. *Lancet Digital Health*, 2023 (5) 1: E16-27
- Khoo S, FitzGerald R, Saunders G, Middleton C, Ahmad S, Edwards C... **Walker LE** et al. Molnupiravir versus placebo in unvaccinated and vaccinated patients with early SARS-CoV-2 infection in the UK (AGILE CST-2): a randomised, placebo-controlled, double-blind, phase 2 trial. *Lancet Infectious Diseases*, 2023 (23) 2: P183-195
- Donovan-Banfield, I., Penrice-Randal, R., Goldswain, H... **Walker LE**. et al. Characterisation of SARS-CoV-2 genomic variation in response to molnupiravir treatment in the AGILE Phase IIa clinical trial. *Nat Commun* 13, 7284 (2022).
- Osanlou R, **Walker LE**, Hughes DA, Burnside G, Pirmohamed M. Adverse drug reactions, multimorbidity and polypharmacy: a prospective analysis of 1 month of medical admissions. *BMJ OPEN* 2022: 12(7)
- **Walker LE**, Abuzour AS, Bollegala D, Clegg A, Gabbay M, Griffiths A, Kullu C, Leeming G, Mair FS, Maskell S, Relton S, Ruddle RA, Shantsila E, Sperrin M, Van Staa T, Woodall A, Buchan I. The DynAIRx Project Protocol: Artificial Intelligence for dynamic prescribing optimisation and care integration in multimorbidity. *J Multimorb Comorb* 2022.

- Moss JG, Young D, Rashed AN, **Walker LE**, Hawcutt DB. Paediatric polypharmacy and deprescribing: the views of UK healthcare professionals. Archives Of Disease In Childhood, 2023 Jan;108(1):72-73.2022,
- Essa H, **Walker L**, Mohee K, et al. Multispecialty multidisciplinary input into comorbidities along with treatment optimisation in heart failure reduces hospitalisation and clinic attendance. Open Heart 2022;9:e001979. doi: 10.1136/openhrt-2022-001979
- Essa H, **Walker L**, Sankaranarayanan R. Sodium-glucose co-transporter-2 inhibitors in the non-diabetic heart failure patient. BJCP 2022, 88(6):2566-2570
- Green TJ, **Walker LE**, Turner RM. A European cross-sectional survey to investigate how involved doctors training in clinical pharmacology are in drug concentration monitoring. EJCP 2022 Jul;78(7):1105-1113.
- FitzGerald R, Dickinson L, Else L, Fletcher T, Hale C, Amara A, **Walker L**, Penchala SD, Lyon R, Shaw V, et al. Prodrug Molnupiravir, in Nonplasma Compartments of Patients With Severe Acute Respiratory Syndrome Coronavirus 2 Infection. Clinical Infectious Diseases 2022 Aug 24;75(1):e525-e528
- Anne Lee and Melinda Cuthbert Eds. Adverse Drug Reactions, Third Edition (2022). Pharmaceutical Press. Chapter 10: Musculoskeletal disorders, **Christine Randall**.

8. DOCUMENTS UPLOADED TO CITRIX SHARE FILE OR TEAMS CHANNELS

None in 2022/23

9. YCC WEBSITE AND SOCIAL MEDIA

Website updates

The YCC North West website went live in September 2021, it currently hosts our annual reports, information on how to report, contact details for requesting training session as well as displaying the feeds for Instagram and Twitter

Number of website hits

Between April 2022 and March 2023, the site has seen 824 visits, 736 unique visitors with a total page views of 1.1K.

Twitter presence

In October 2018 we created a twitter account, @yellowcardnw, as of April 2023 we have just over 230 followers. Impressions for 2022/23 were 2.3K, engagement rate has been overall quite low.

10. RESEARCH AND ONGOING INITIATIVES

YCCNW Champions network

The North West-wide network of Yellow Card Champions, set up in 2015, shares good practice, explores ideas and initiatives and lends support. The Champions meet twice a year and the group continues to expand, since 2020 meetings have been virtual and this will continue. Meetings include one or more short presentations, in 2022/23 meetings were held in May and November:

- Cutaneous Adverse Events with COVID Vaccination - Dr Vincent Yip, NIHR Clinical Lecturer in Clinical Pharmacology, Liverpool
- Yellow Card Biobank - Update from the MHRA Project Team - Jessica Wright. Yellow Card Biobank Project Manager, MHRA
- Adverse drug reactions, multimorbidity and polypharmacy: a prospective analysis of 1 month of medical admissions - Dr Rostam Osanlou, Specialist Registrar in Clinical Pharmacology, Liverpool
- Using medicines optimisation to identify ADRs - case study - Dr Lauren Walker – YCC NW Medical Director, Clinical Senior Lecturer in Clinical Pharmacology & Therapeutics and Honorary Consultant in General Internal Medicine, Liverpool.

11. CONCLUSION

In 2022/23 7,581 Yellow Cards were submitted by health professionals, patients and carers from the YCCNW region. This is a 96% decrease compared to 2021/22. This increase reflects the inclusion of COVID-19 reports within the dataset. If COVID-19 reports are excluded, a total of 5,264 Yellow Cards were submitted, a like for like increase of 38%. The across the board increase in reporting by almost all reporter groups may reflect the transition back to pre-pandemic working. Hospital pharmacy teams across the North West contributed 35% of all reports.

Of note patient and carer reporting continues to increase, up 207% when COVID-19 vaccine reports are included. However, even if COVID-19 vaccine reports are excluded reporting by patients and carers increased by 37%. This increase in patient/carer reporting may reflect an increase in awareness and engagement with the Yellow Card Scheme following its high profile during the COVID-19 vaccination campaigns.

Declaration of interests

Dr Lauren Walker declares that as part of her role as a clinician educator she provides educational sessions on multimorbidity and polypharmacy including how it affects ageing people with HIV. These sessions are commissioned by pharmaceutical companies as part of their education agenda and are not product specific.