

Asthma Pathfinders

An introduction to the London Asthma Decision Support Tool (LADS)

Sarah Elkin, Darush Attar-Zadeh, Rachel McCarthy

Date: 22nd February 2022

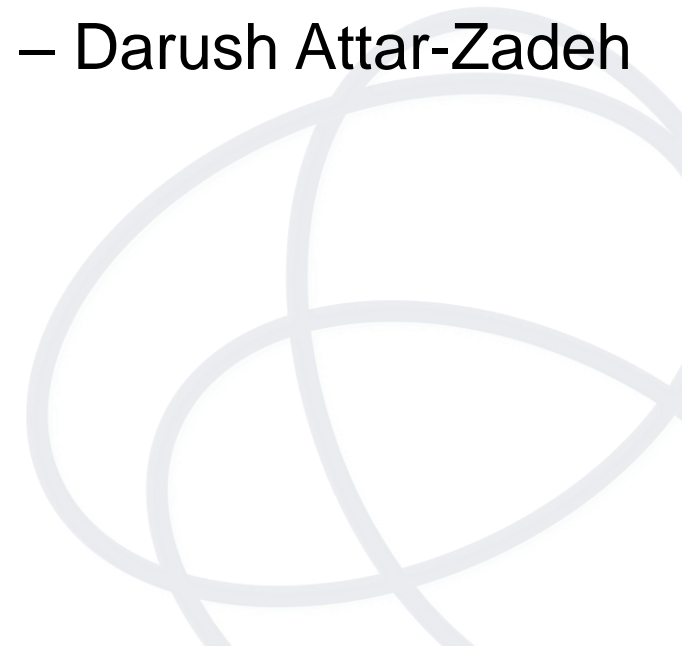
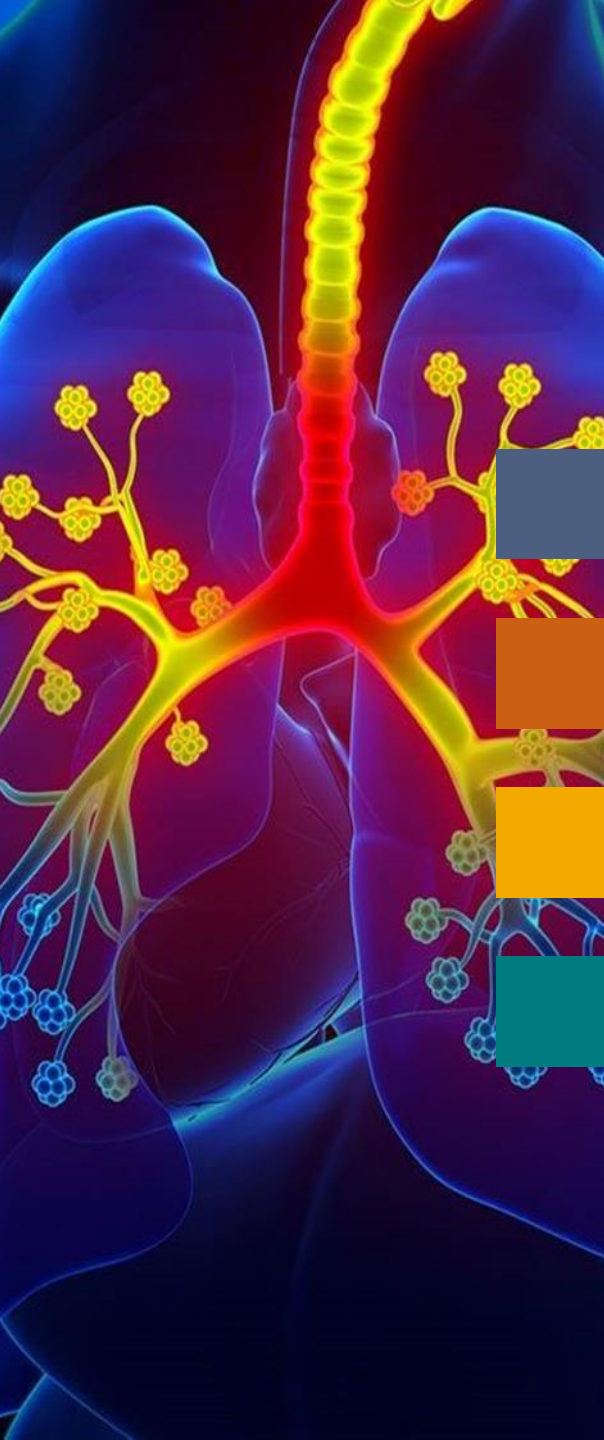
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Background and Overview of LADS - Sarah Elkin

Live demonstration of LADS – Rachel McCarthy

Use Cases to support PCNs and practices – Darush Attar-Zadeh

Q & A



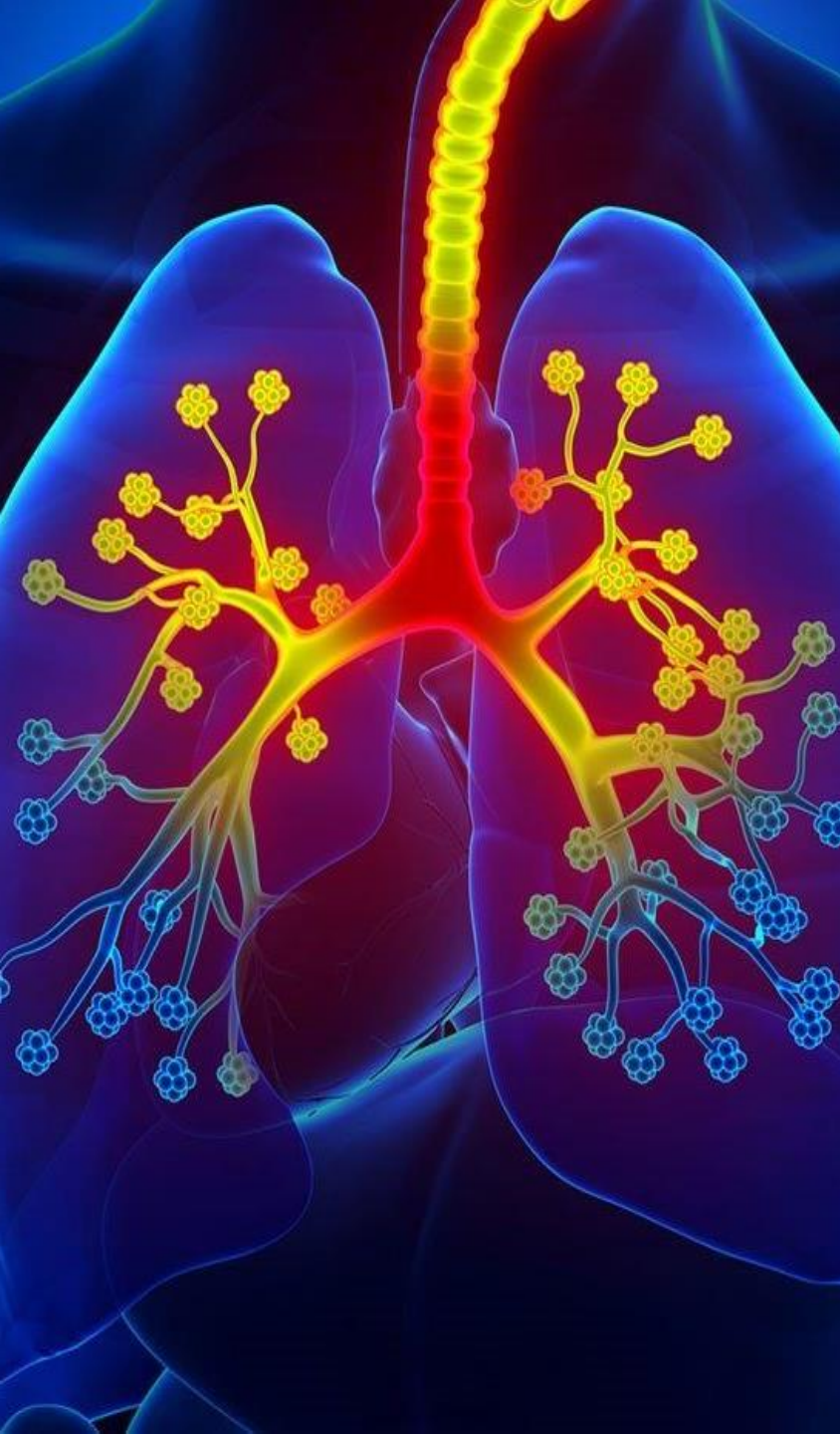
Overview of Pathfinders

One London Health Data Strategy Programme created the Pathfinder programme to bring together academic and clinical expertise to demonstrate the use of data to solve real world clinical and operational problems.

4 pathfinder projects were commissioned:

- **Asthma**
 - Childhood immunisations
 - Hypertension
 - Cancer referral pathway management
-
- The projects needed to be a combination of 2 or more ICS
 - NWL are part of 3 pathfinders





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Why Asthma?

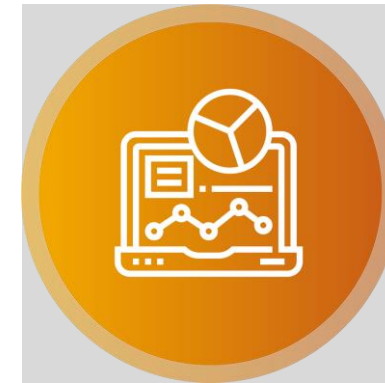
Over 12% of the population in UK have been diagnosed with asthma. This is greater than those diagnosed with all other lung diseases combined

In London it is estimated **600,000** people suffer from **asthma**, including **240,000** children

Two thirds of people with asthma say air pollution leaves them fighting for breath. This is especially important in London as it has high levels of pollution

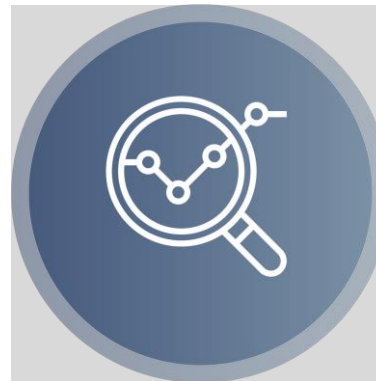
Aims of the tool

To support population health management and the delivery of the NHS Long Term Plan deliverables for asthma patients of all ages.



To enable exchanging expertise on data driven healthcare and successful asthma quality improvement programmes

To be an exemplar project that brings together NWL and SEL ICS around a single scalable, clinically actionable dataset.



To improve the quality of asthma care across London using a population health management approach



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Demo

Rachel McCarthy

nhsnwl.wsicsupport@nhs.net



USE CASE

London Asthma Decision support tool (LADS) Snapshot & Deep dive

Darush Attar-Zadeh (d.attar-zadeh@nhs.net) IP

Respiratory Pharmacist (Clinical Fellow Imperial College Health Partners)
NWL CYP Asthma Network

Asthma – population health

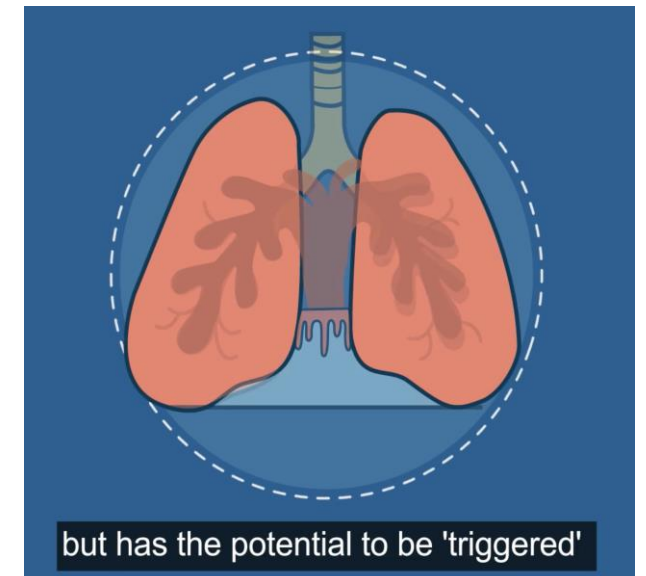
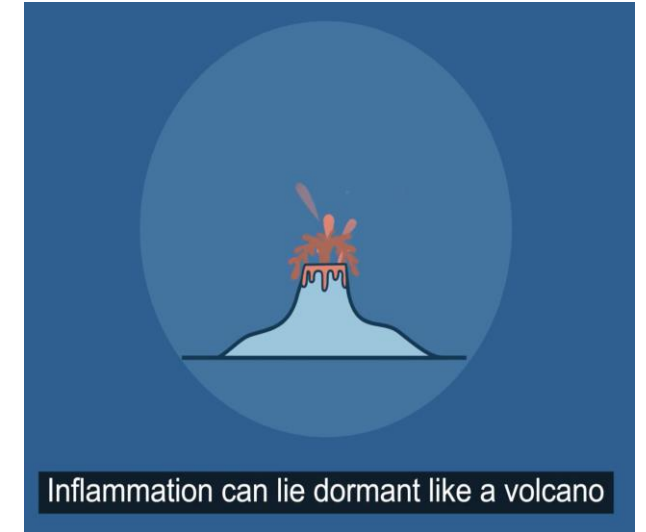
Questions that may cross your mind?

- How many patients in my population (ICB, Borough, PCN, Practice) have been hospitalized and are at future risk of another attack?
- What % of patients have had objective tests to support asthma diagnosis?
- What % of people take the right treatment & in the right way?
- What proportion are children and young people?
- What proportion are current smokers or living in a highly polluted area?
- Who's got asthma and possibly struggling to make ends meet?
- What proportion of asthma patients don't have English as their first language and maybe struggling to understand the AccuRx messages?

Reducing the **RISK OF** Asthma attacks

- **Ratio:** preventer & reliever inhalers, sustainability
- **ICS** (inhaled steroid) potency
- **Smoking & exposure**
- **Knowledge** – English language, control test, self-management

- **OCS** (oral steroids) frequency (in the last 12 months)
- **Forecast** (Weather, Pollution, Deprivation Index)



LADS Dashboard

All

ICS

For more detailed analysis, click on the bottom right corner of each quadrant

Population

Total ICS Population	2,784,263
Asthmatic Population	117,738
Adult Asthmatic Population	102,441
CYP Asthmatic Population	15,297
Asthmatic Patients with a QOF Co-Morbidity	63,940
Patients under Secondary care in past 12 months	9,801
A&E Patients	795
Inpatients under Secondary Care	9,801

[Population Detailed Dashboard](#)

[Population Map Dashboard](#)


Clinical

Number of Patients with Quality Assured Diagnoses	571
Proportion of High Dose ICS Items	13.4%
Proportion of Patients Receiving 5 or Fewer Inhalers for ICS Products	59.9%
Number of times Prednisolone Tablets have been prescribed	42,941
Total Prescriptions of DPIs vs. MDIs Ratio	0.33
Number of ACTs in Last 12 Months	74,895
Number of Patients with an Annual Review in Last 12 Months	73,830

[Clinical Detailed Dashboard](#)


Finance

Total Prescription Cost (Last 12 Months)	£15.3M
Total MDI Cost (Last 12 Months)	£3.4M
Total DPI Cost (Last 12 Months)	£4.4M
Total SABA Cost (Last 12 Months)	£0.8M
Total ICS Cost (Last 12 Months)	£6.7M
Cost of Asthma Related ED Attendances (Last 12 Months)	£146.1M
NEL Admission Cost (where Asthma is primary diagnosis) (Last 12 Months)	£2.1M
Number of ITU and HDU Admissions (Last 12 Months)	215
GP Cost for Asthma Related Appointments for Patients not seen in Secondary Care (Last 12 Months)	£1.8M
Number of Readmissions within 30/60 Days (Last 12 Months)	140/0

[Finance Detailed Dashboard](#)


Wider Determinants

Number of Smokers (% of Asthmatic Patients)	14,350 (12%)
Number of Ex-Smokers (% of Asthmatic Patients)	21,098 (18%)
Number of Patients Prescribed Anti-Smoking Products (% of Asthmatic Patients)	279 (0%)
Number of Patients Overweight or Obese (% of Asthmatic Patients)	65,226 (55%)
Number of Patients Living in Highly Polluted Areas (% of Asthmatic Patients)	2,843 (2%)
Number of Patients where English is not their First Language (% of Asthmatic Patient)	24,657 (21%)

[Wider Determinants Detailed Dashboard](#)

[Wider Determinants Map Dashboard](#)


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Data Source (Definitions)

- QoF – SNOMED
- The list of the SNOMED codes used for the Symptom Control Test can be found here
- HES
- EPACT 2
- WSIC
- Limitations of data

Concept ID	Term	Sub-Category
170637003	Asthma limiting activities (finding)	RCP
170638008	Asthma not limiting activities (finding)	RCP
170655007	Asthma restricts exercise (finding)	RCP
170631002	Asthma disturbing sleep (finding)	RCP
170632009	Asthma causing night waking (finding)	RCP
170635006	Asthma not disturbing sleep (finding)	RCP
395022009	Asthma night-time symptoms (finding)	RCP
373899003	Asthma daytime symptoms (finding)	RCP
443117005	Asthma control test score (observable entity)	ACT
905301000000103	Childhood Asthma Control Test score	cACT

General Population of Asthmatic Patients

Analysis of the population of asthmatic patients



Use the filters or click on a chart to update the others accordingly

Reset All Filters

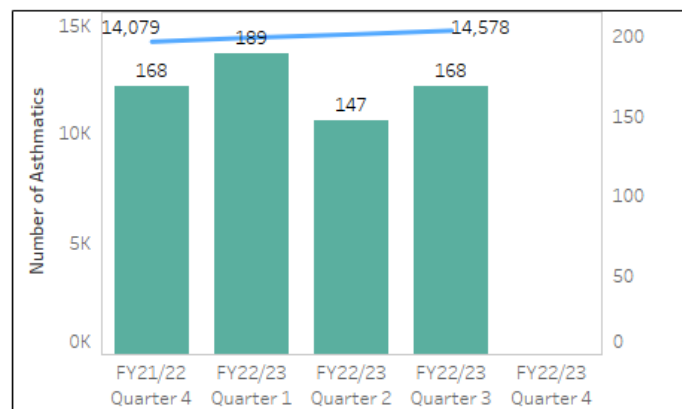
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Latest Data Date: 21/12/2022

ICS	Health Borough	PCN	Practice	Gender	Age Band	Deprivation	Ethnicity
All		All	All	All	All	All	All
Population in Cohort	Asthma Patients in Cohort	Adult Asthma Patients in Cohort	CYP Asthma Patients in Cohort	Patients with QOF Co-Morbidities in Cohort	Patients under Secondary Care in Cohort	A&E Patients under Secondary Care in Cohort	Inpatients under Secondary Care in Cohort
341,050	14,578	12,433	2,145	7,905	1,337	85	1,337

Number of Asthma Patients over time Diagnosis

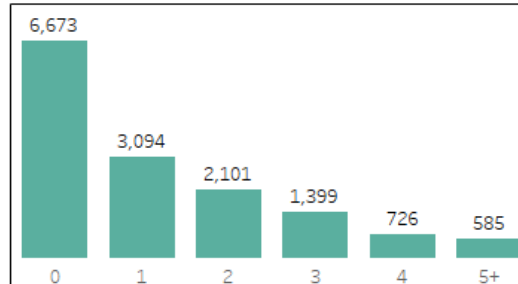
■ Total Number of Asthmatics ■ New Asthma Diagnoses



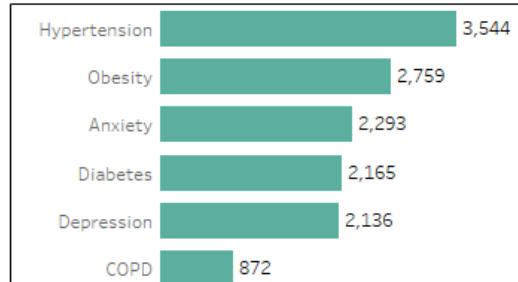
Asthma Patients by Age and Gender

Age Band	Male	Female
6 - 12	707	444
13 - 17	581	413
18 - 24	453	426
25 - 34	696	882
35 - 44	822	1,218
45 - 54	994	1,368
55 - 64	1,011	1,383
65 - 79	947	1,418
80+	322	493

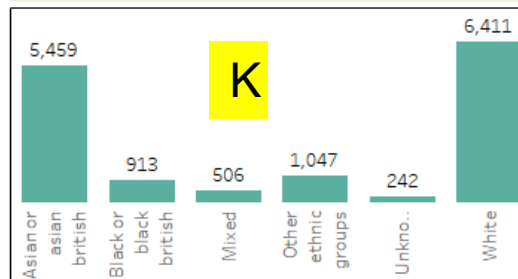
Asthma Patients with Co-Morbidities



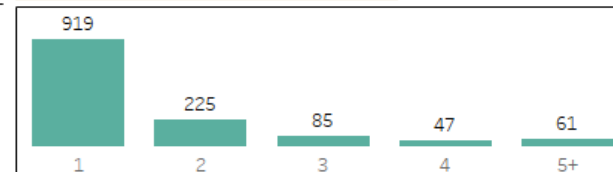
of Patients with Key Comorbidities



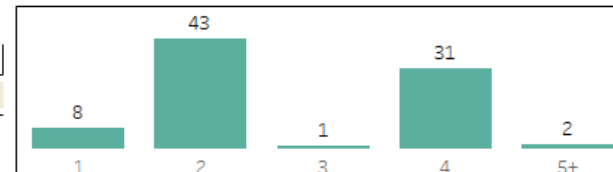
Asthma Patients by Ethnicity



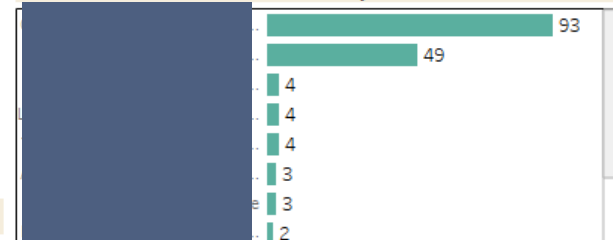
Patients with Inpatient Spells (Last 12m) Tooltip Detail Health Borou..



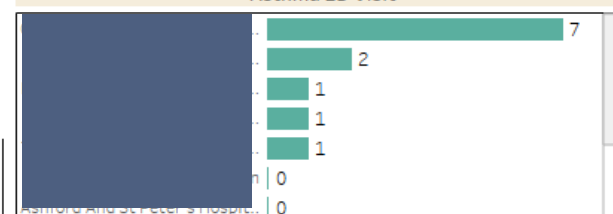
Patients with ED Visits (Last 12m) Tooltip Detail Health Borou..



Patients with ED Visits but no Primary Care Visit in last 12 Months



Patients with Asthma related GP appointments within 2 weeks of Asthma ED Visit



Clinical quadrant

Clinical Care of Asthmatic Patients

Analysis of clinical considerations for asthmatic patients

CYP <18 years

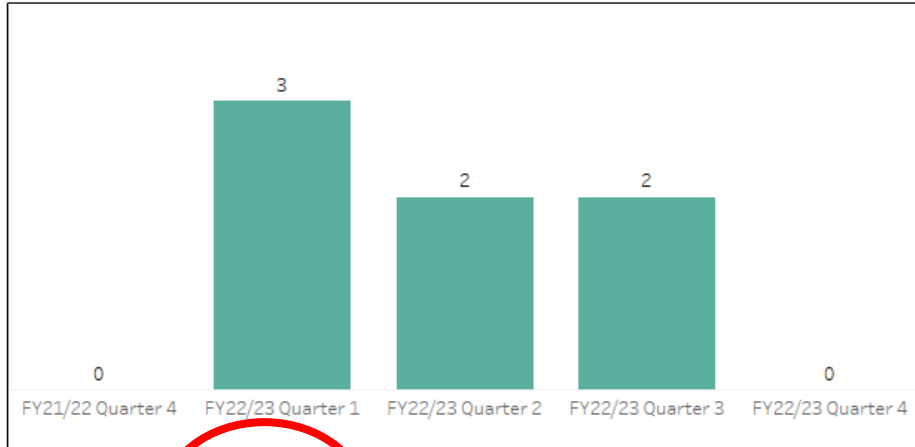


Use the filters or click on a chart to update the others accordingly | [Reset All Filters](#) | Refresh Date: 05/01/2023 13:04:00 | Latest Data Date: 21/12/2022

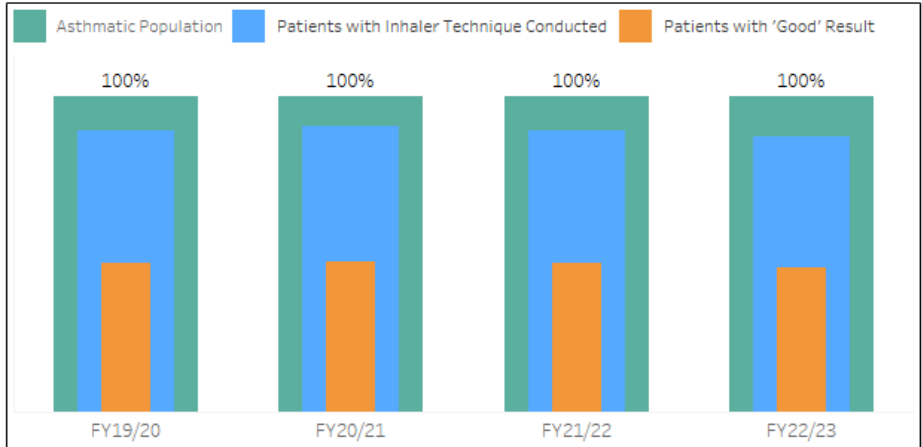
All ICS All Health Borough All PCN All Practice All Gender **Age Band Multiple values** All Deprivation All Ethnicity

	% of High Dose ICS Items	% of Patients Receiving ≤5 Inhalers for ICS Products	# of ACTs Recorded in last 12 months	# of Patients with Quality Assured Diagnosis	# of Patients with Annual Review in last 12 months	Number of Times Prednisolone was Prescribed	Total Prescriptions of DPIs vs. MDIs Ratio
I	2.6%	70.5%	8,697	6	9,065	O 1,136	0.04

Quality Assured Diagnosis | Diagnoses over Time | Tooltip Detail | Health Borough

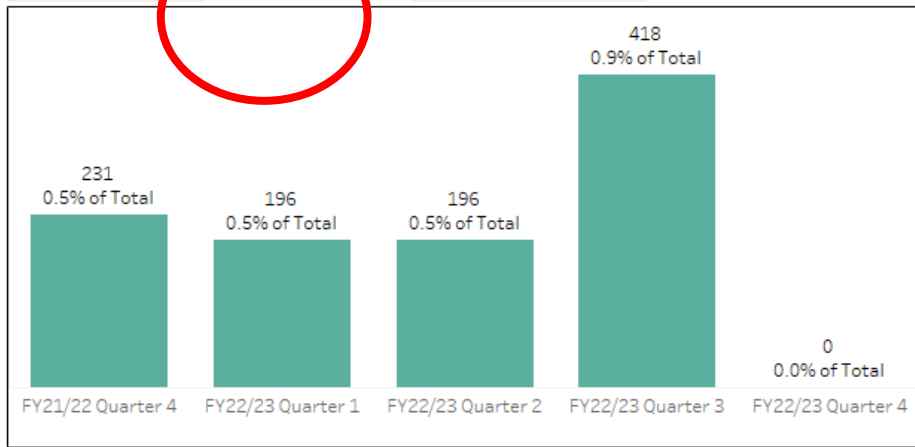


Asthma Review Trends over last 5 Years | Inhaler Technique | Percentage of Total

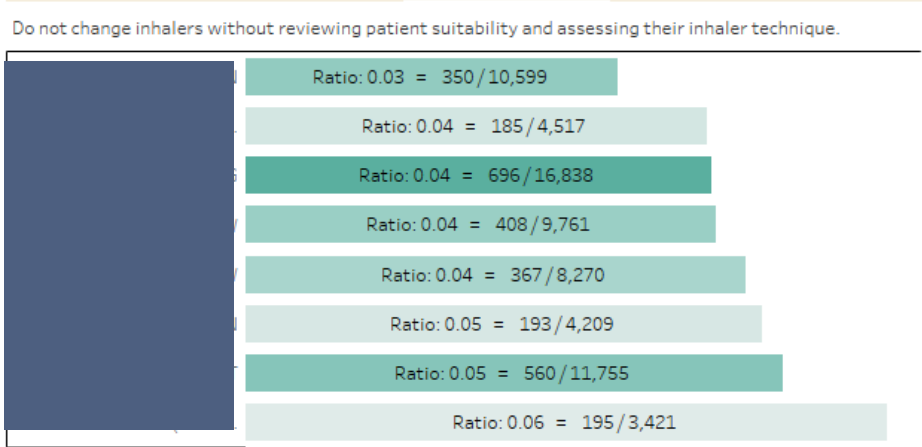


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Number of Prednisolone Prescriptions over Time | Tooltip Detail | Health Borough



DPI vs. MDI Ratio - Bottom 10 Health Boroughs | Coloured by # MDIs



Wider Determinants of Asthmatic Patients

Analysis of wider determinants affecting asthmatic patients



Use the filters or click on a chart to update the others accordingly

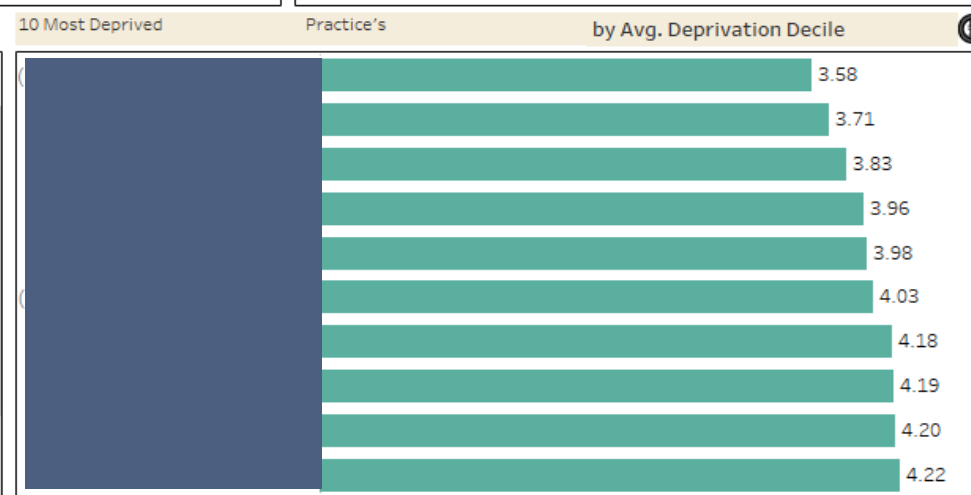
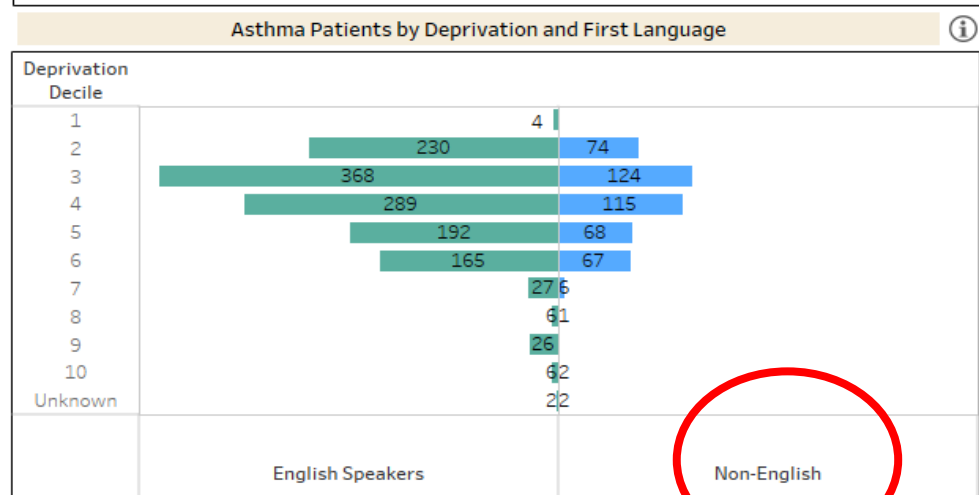
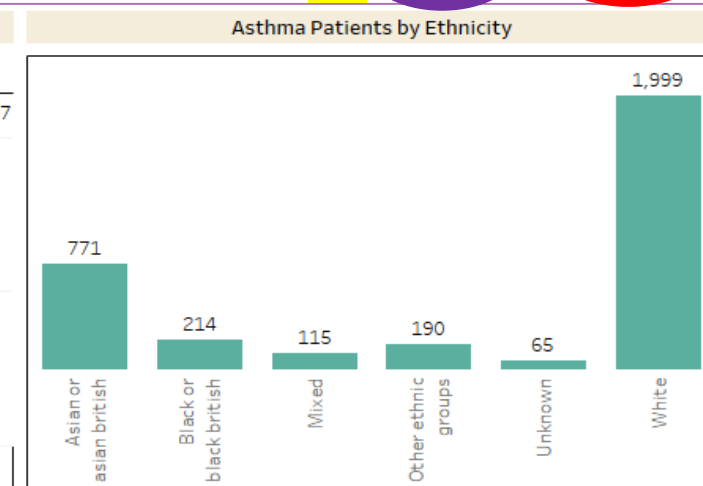
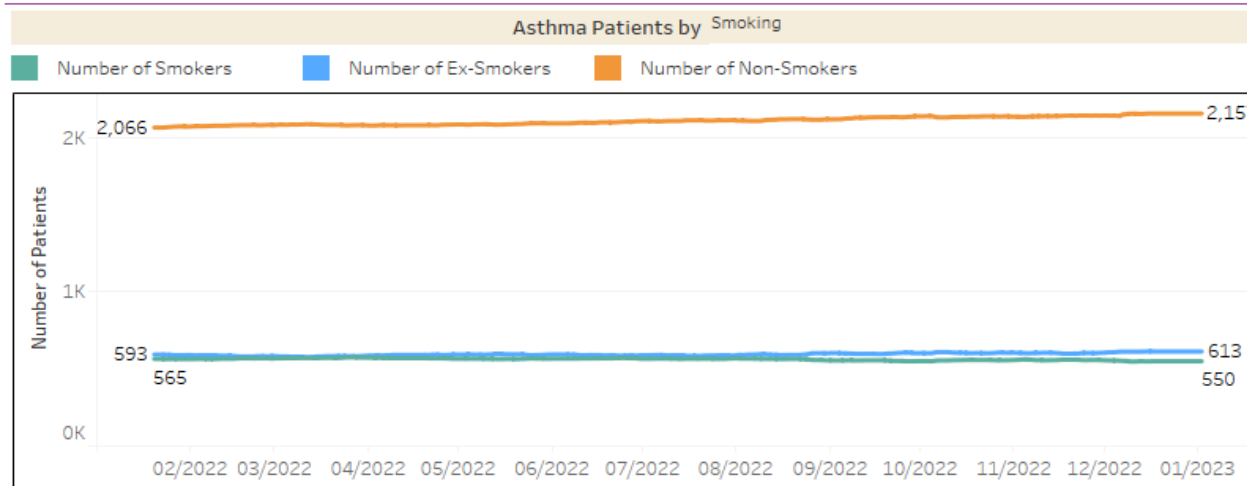
Reset All Filters

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Latest Data Date: 21/12/2022



ICS	Health Borough	PCN	Practice	Gender	Age Band	Deprivation	Ethnicity
All			All	All	All	All	All
# of Smokers	% of Patients who are smokers	# of Ex-Smokers	% of Patients who are ex-smokers	# of Patients Prescribed Anti-Smoking Products	% of Patients prescribed Anti-Smoking Products	# of Patients Overweight or Obese	% of Patients Living in Highly Polluted Areas
563	17%	604	18%	3	0%	2,009	60%
							F 99
							3%



99 out of 118 people living in highly polluted areas are from

.....

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Wider Determinants of Asthmatic Patients

Analysis of wider determinants affecting asthmatic patients

CYP <18 years



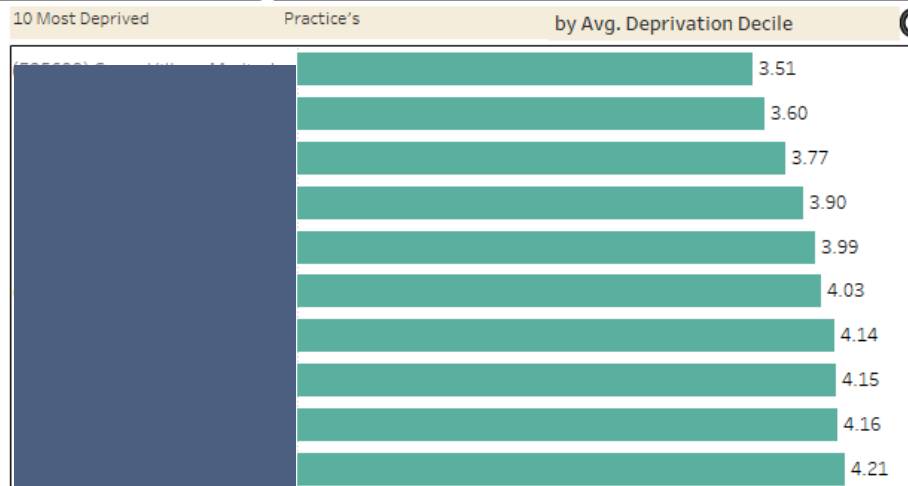
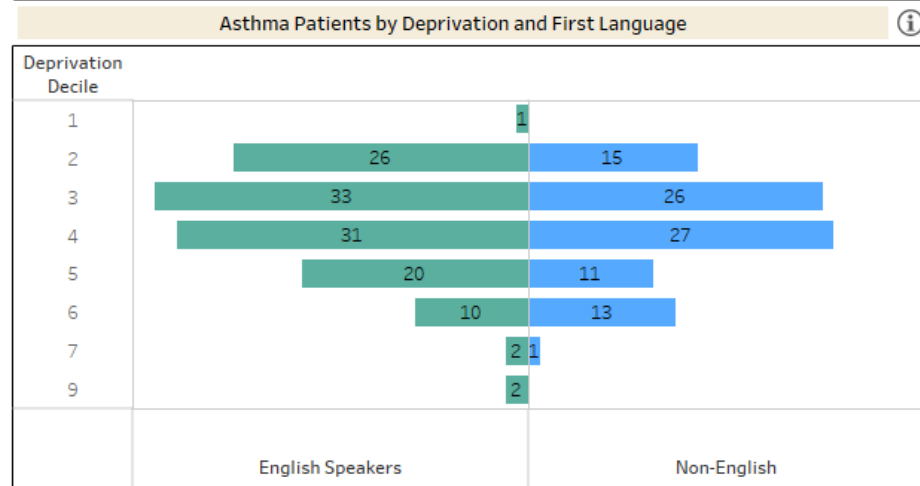
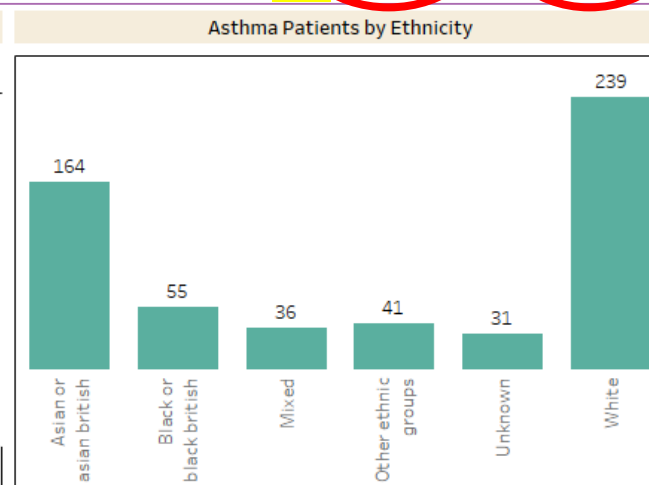
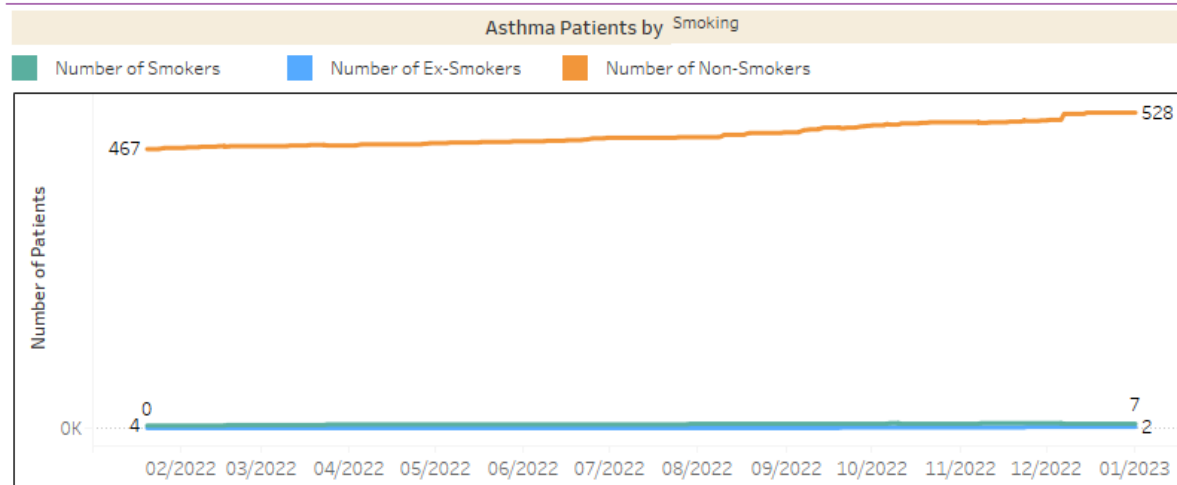
Use the filters or click on a chart to update the others accordingly

Reset All Filters

Refresh Date: 03/01/2023 13:04:00

Latest Data Date: 21/12/2022

ICS	Health Borough	PCN	Practice	Gender	Age Band	Deprivation	Ethnicity		
All			All	All	Multiple values	All	All		
# of Smokers	% of Patients who are smokers	# of Ex-Smokers	% of Patients who are ex-smokers	# of Patients Prescribed Anti-Smoking Products	% of Patients prescribed Anti-Smoking Products	# of Patients Overweight or Obese	% of Patients Overweight or Obese	# of Patients Living in Highly Polluted Areas	% of Patients Living in Highly Polluted Areas
7	1%	2	0%	0	0%	64	11%	F 23	4%



23 are CYP!

USE CASE 2

London Asthma Decision support tool (LADS) Snapshot & Deep dive

Darush Attar-Zadeh (d.attar-zadeh@nhs.net) IP

Respiratory Pharmacist (Clinical Fellow Imperial College Health Partners)
NWL CYP Asthma Network

Asthma – population health

Questions that may cross your mind?

- How many patients in my population (ICB, Borough, PCN, Practice) have been hospitalized and are at future risk of another attack?
- What % of people are seen in a reasonable amount of time after a short course of prednisolone?
- What % of people take the right treatment & in the right way?
- What % of people are smokers or ex-smokers?
- What proportion are children and young people?

Map of Asthmatic Patients

Spatial analysis of the asthmatic population



Use the filters or click on a chart to update the others accordingly

[Reset All Filters](#)

Refresh Date: 10/02/2023 16:41:05

Latest Data Date: 21/01/2023 

All

ICS

All Health Borough

All

PCN

All

Practice

All

Gender

All

Age Band

All

Deprivation

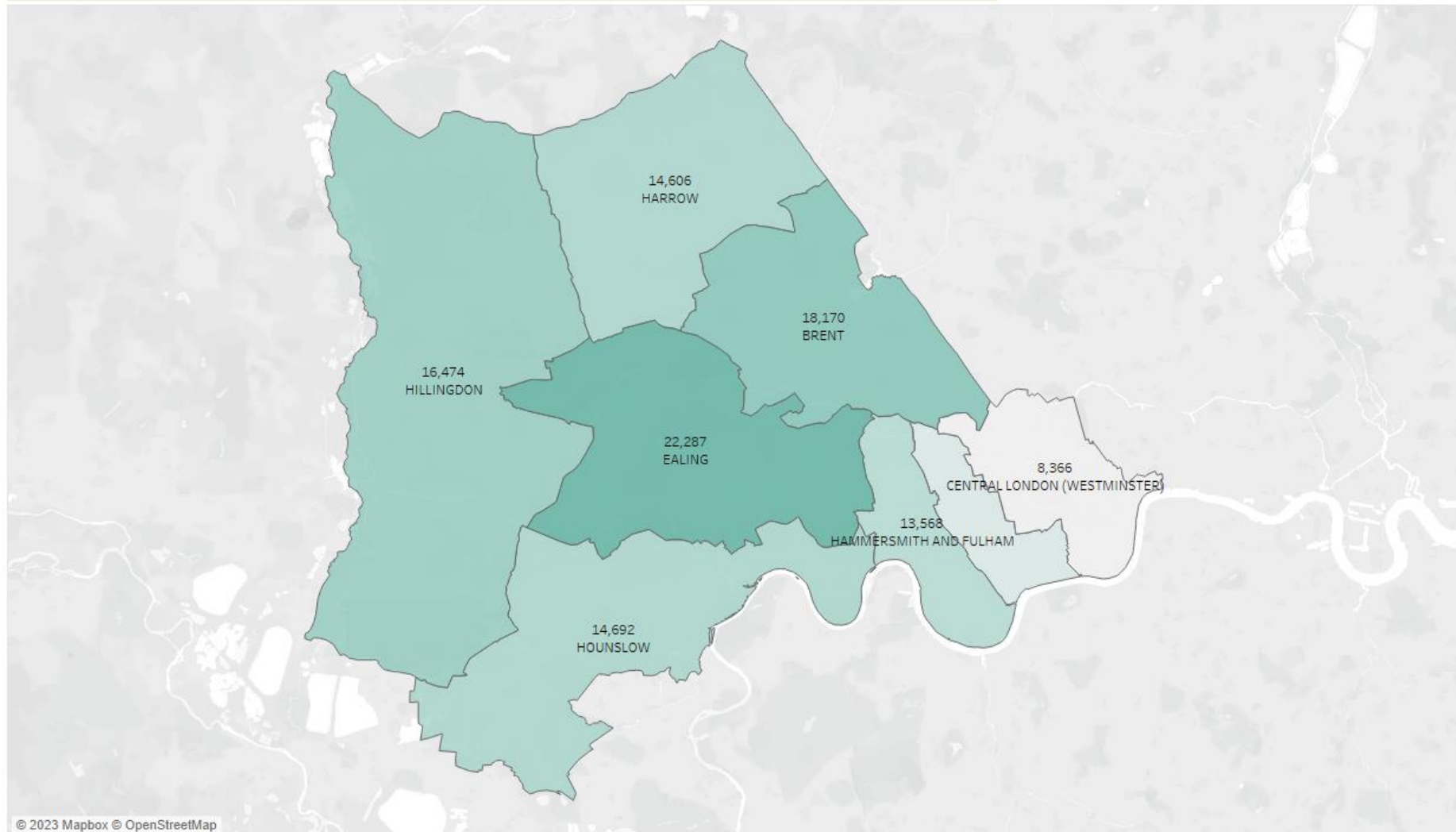
All

Ethnicity

Total Asthma Patients by Borough

[Map Detail](#)
Borough

[Select Data Overlay](#)
Total Asthma Patients



Map of Asthmatic Patients

Spatial analysis of the asthmatic population



Use the filters or click on a chart to update the others accordingly

[Reset All Filters](#)

Refresh Date: 2/10/2023 4:41:05 PM

Latest Data Date: 1/21/2023



All

ICS

All

Health Borough

All

PCN

All

Practice

All

Gender

Age Band
Multiple values

All

Deprivation

All

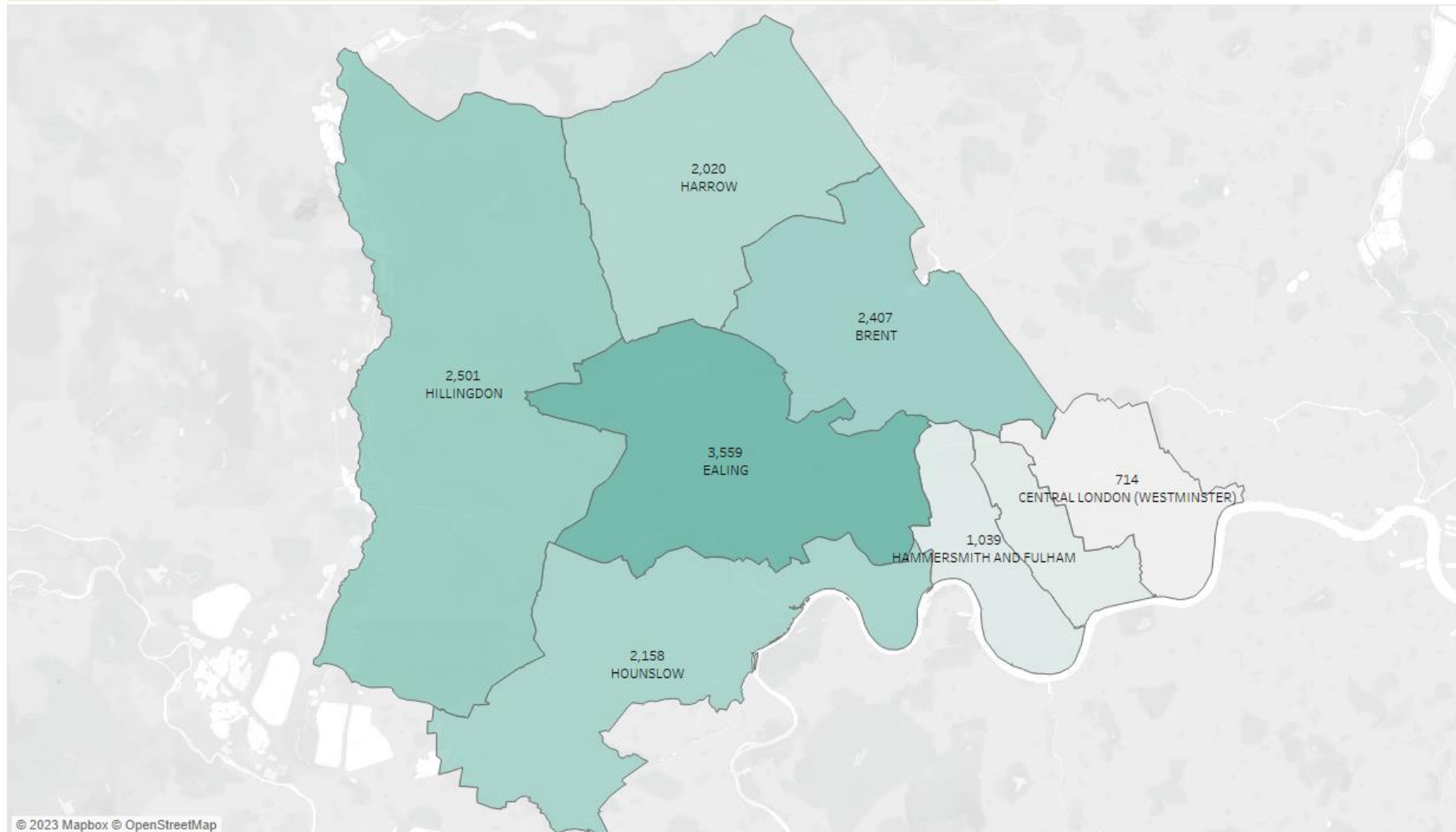
Ethnicity

Total Asthma Patients by Borough

Borough

Map Detail

Select Data Overlay
Total Asthma Patients



Clinical Care of Asthmatic Patients

Analysis of clinical considerations for asthmatic patients



Use the filters or click on a chart to update the others accordingly

Reset All Filters

Refresh Date: 10/02/2023 16:41:05

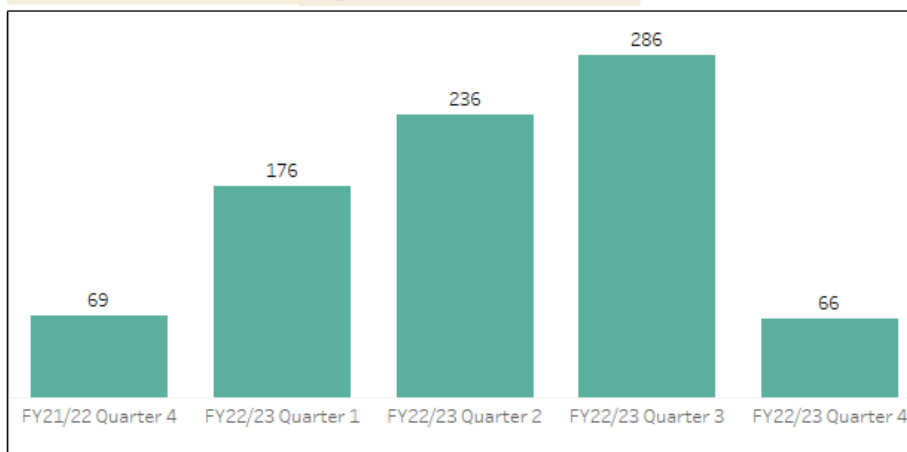
Latest Data Date: 21/01/2023

ICS	Health Borough	PCN	Practice	Gender	Age Band	Deprivation	Ethnicity
All	All	All	All	All	All	All	All
% of High Dose ICS Items	% of Patients Receiving ≤5 Inhalers for ICS Products	# of ACTs Recorded in last 12 months	# of Patients with Quality Assured Diagnosis	# of Patients with Annual Review in last 12 months	Number of Times Prednisolone was Prescribed	Total Prescriptions of DPIs vs. MDIs Ratio	
13.3%	59.8%	77,769	645	76,259	45,540	0.33	

Quality Assured Diagnosis

Diagnoses over Time

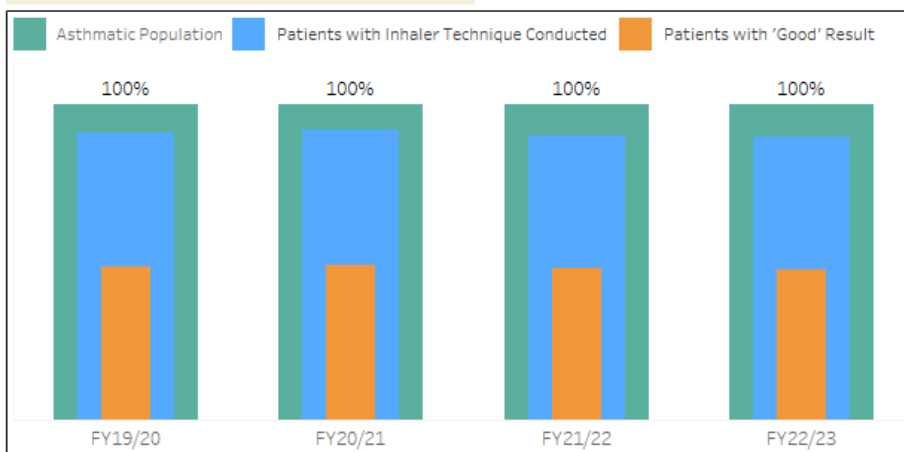
Tooltip Detail ^{PCN}



Asthma Review Trends over last 5 Years

Inhaler Technique

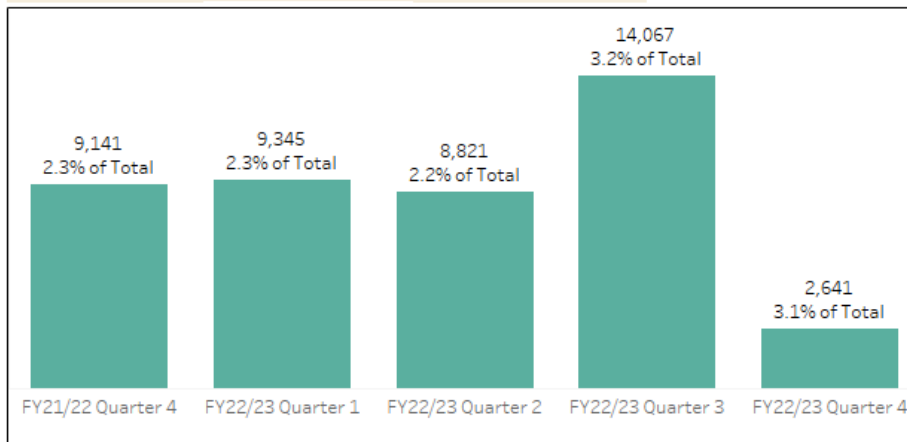
Percentage of Total



Number of Prednisolone

Prescriptions over Time

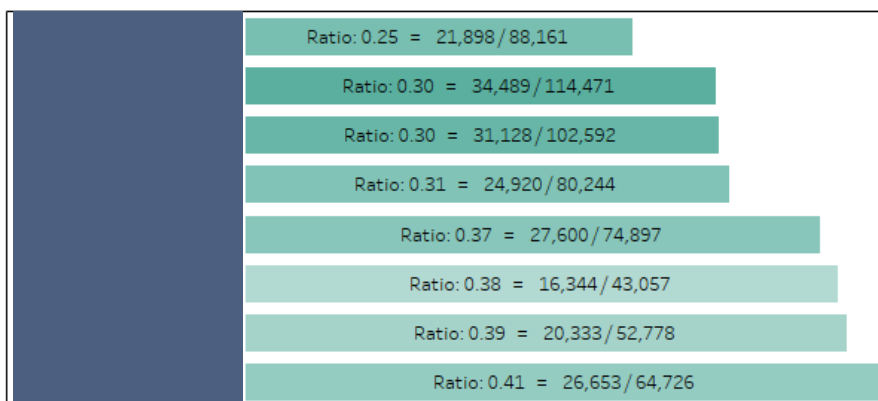
Tooltip Detail ^{PCN}



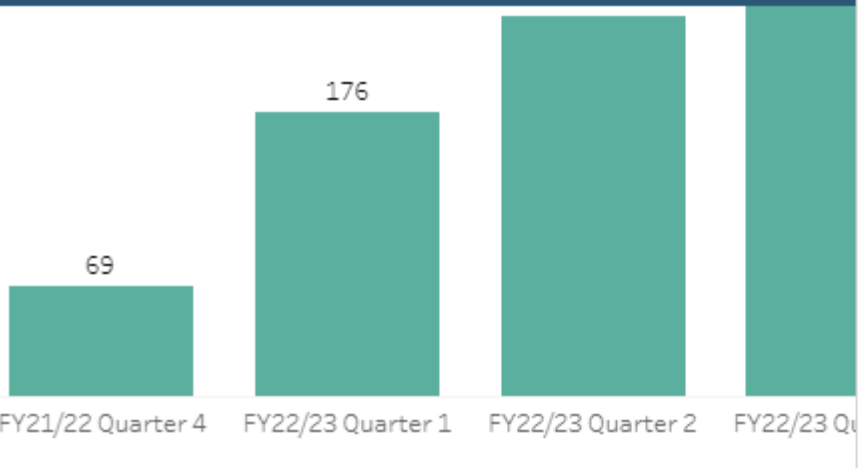
DPI vs. MDI Ratio - Bottom 10 Health Boroughs

Coloured by # MDIs

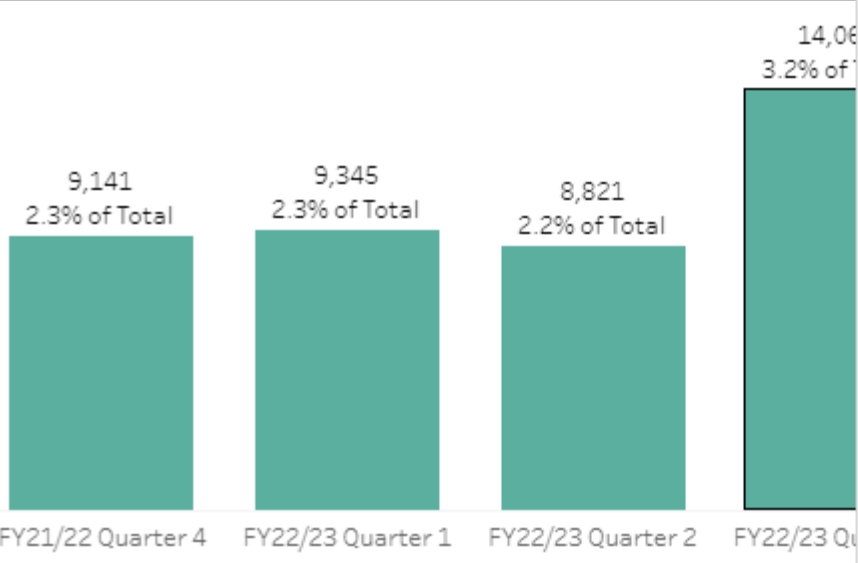
Do not change inhalers without reviewing patient suitability and assessing their inhaler technique.



View: Original

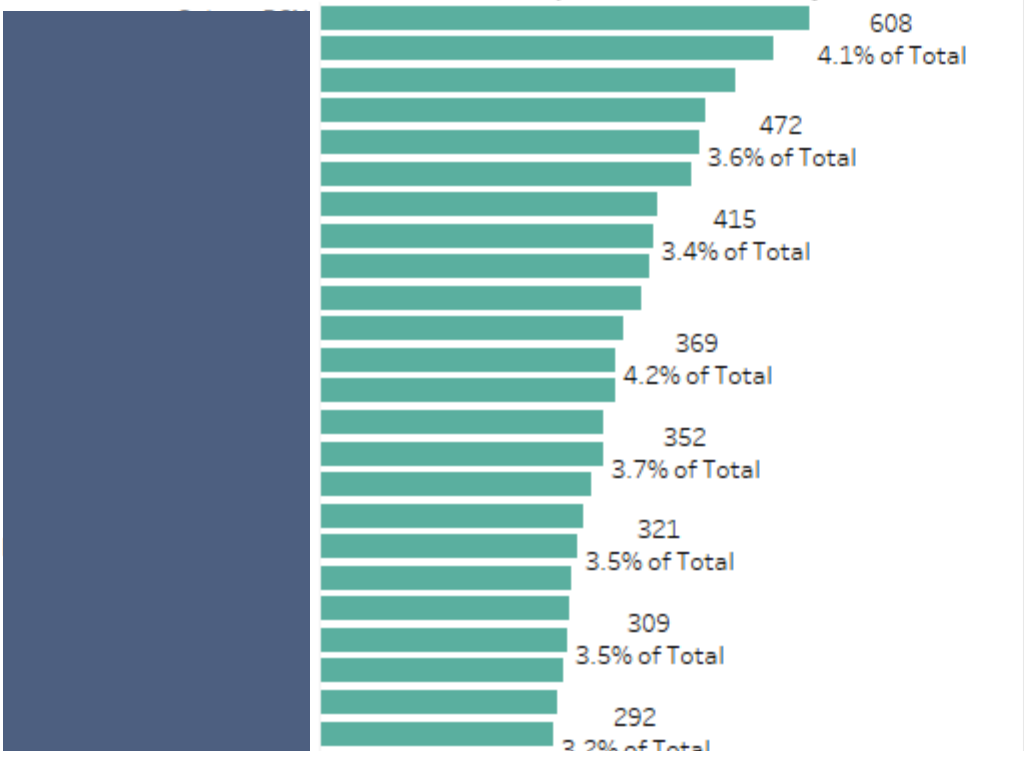


Number of Prednisolone Prescriptions over Time



Date: FY22/23 Quarter 3
 Number of Prednisolone Prescriptions: 14,067

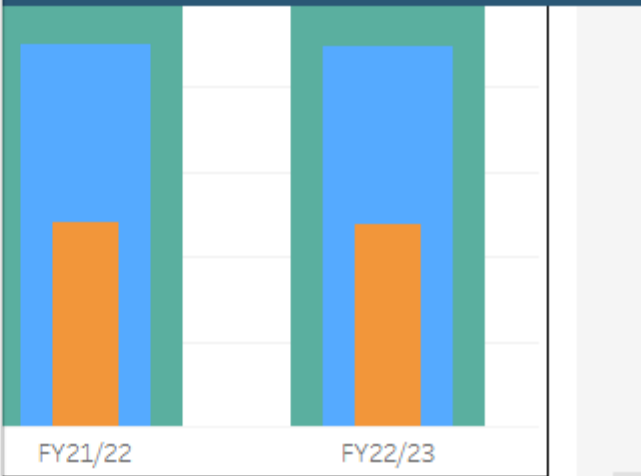
Number of Prednisolone Prescriptions over time by PCN



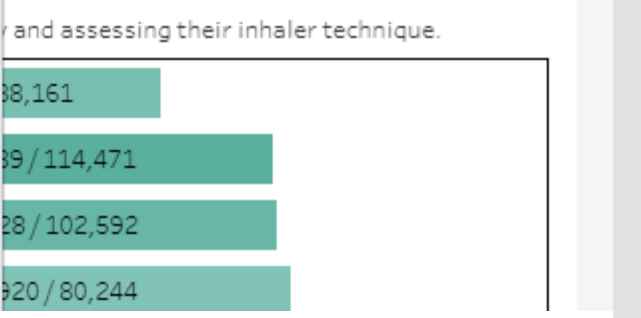
Number of Times Prednisolone Tablets Have Been Prescribed

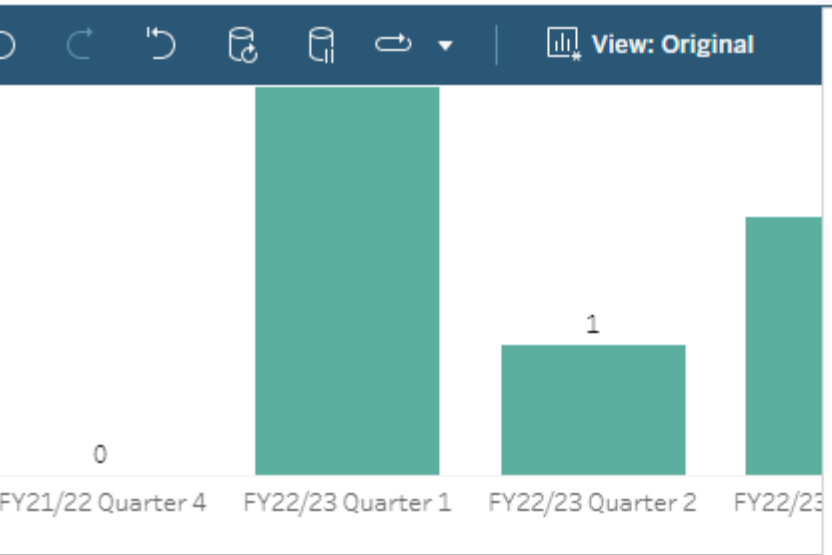
ID	Title	Definition	Reporting Level	Numerator	Denominator	Methodology	RAG
4.1	Number of Times Prednisolone Tablets Have Been Prescribed	Number of Times Prednisolone Tablets Have Been Prescribed to the NWL Asthmatic Patients	Aggregated to ICS	n/a	n/a	The list of the medications can be found here	n/a

Share



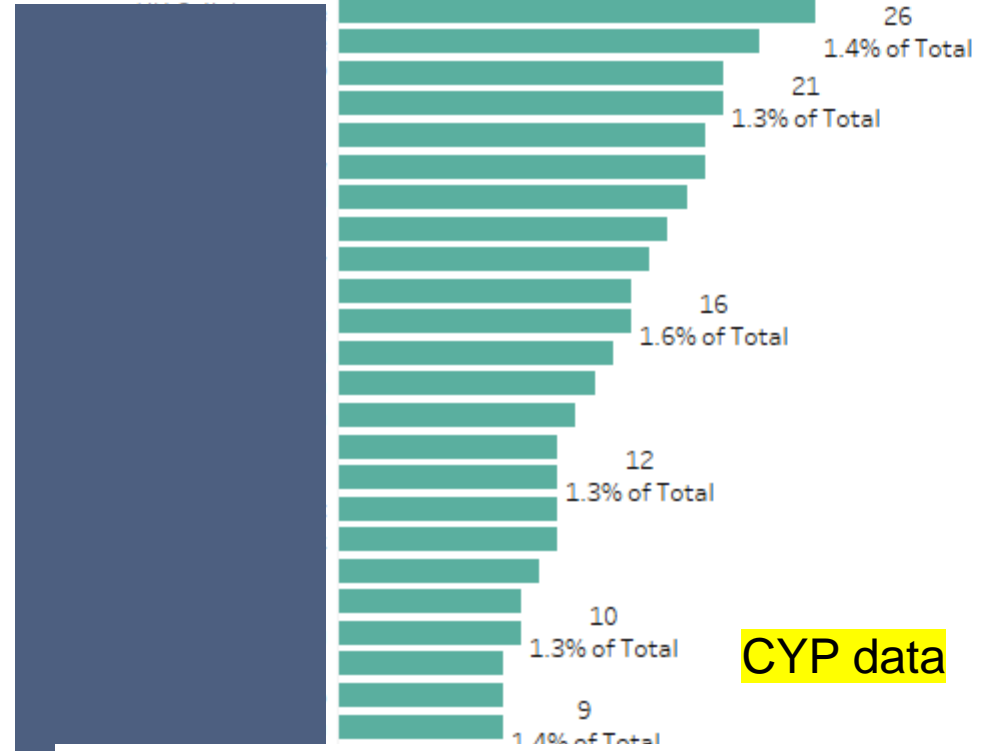
Coloured by # MDIs





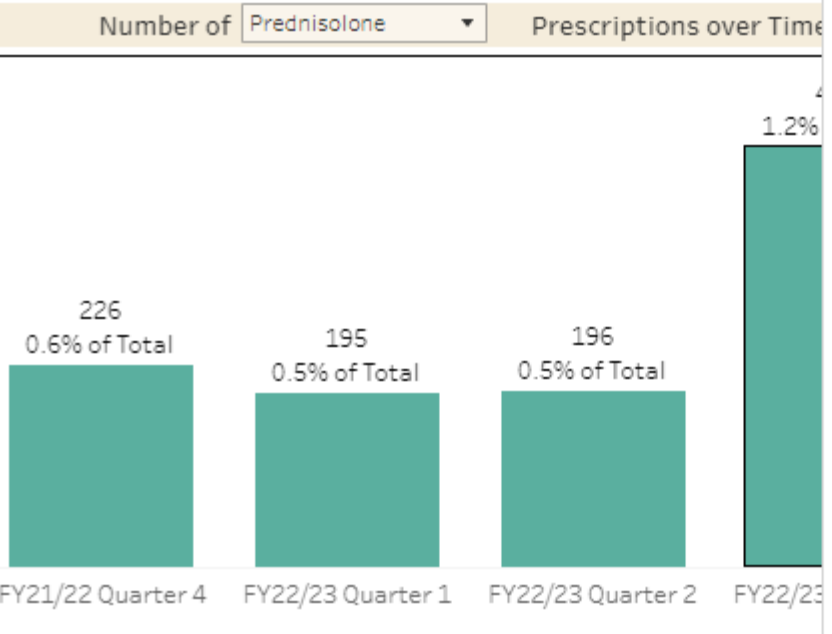
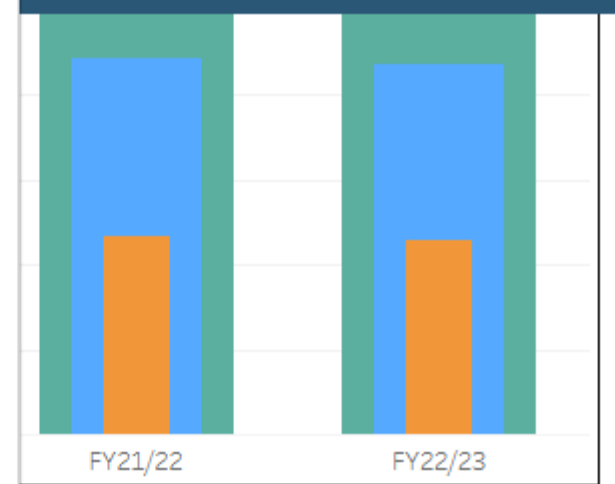
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 Number of Prednisolone Prescriptions: 469

Number of Prednisolone Prescriptions over time by PCN



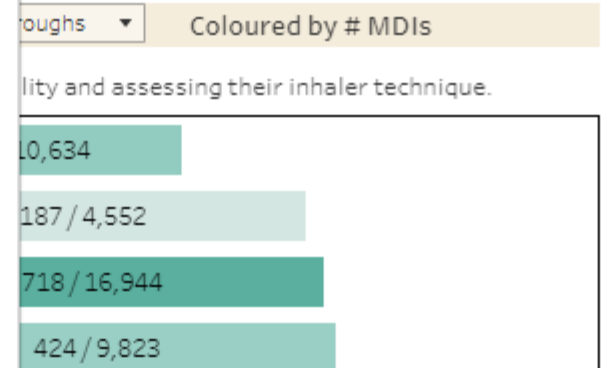
CYP data

Watch | Share

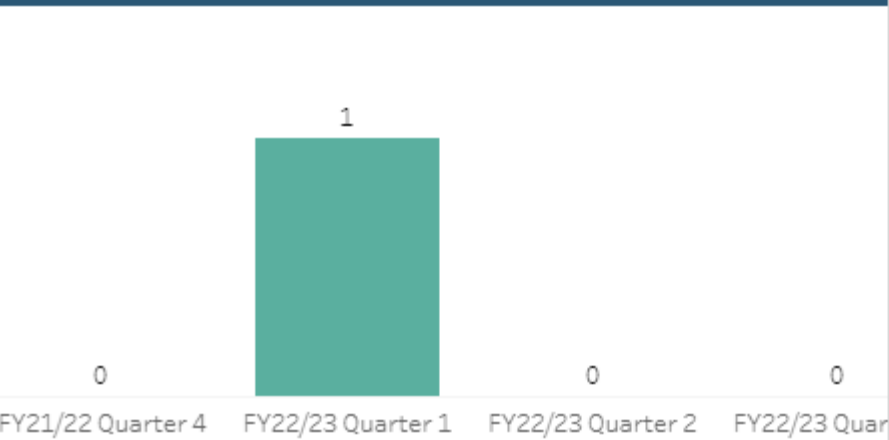


Number of Times Prednisolone Tablets Have Been Prescribed

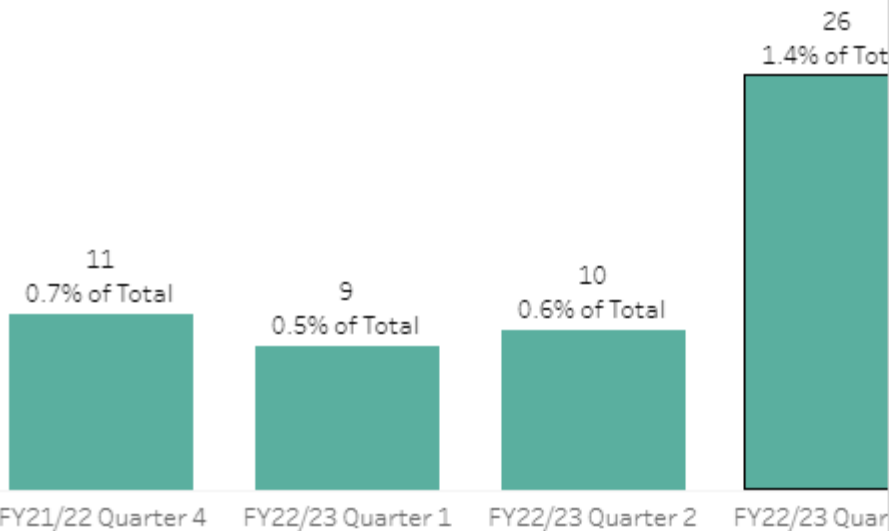
ID	Title	Definition	Reporting Level	Numerator	Denominator	Methodology	RAG
4.1	Number of Times Prednisolone Tablets Have Been Prescribed	Number of Times Prednisolone Tablets Have Been Prescribed to the NWL Asthmatic Patients	Aggregated to ICS	n/a	n/a	The list of the medications can be found here	n/a
4.2							
4.3							
4.4							
4.5							
4.6							
4.7							



View: Original

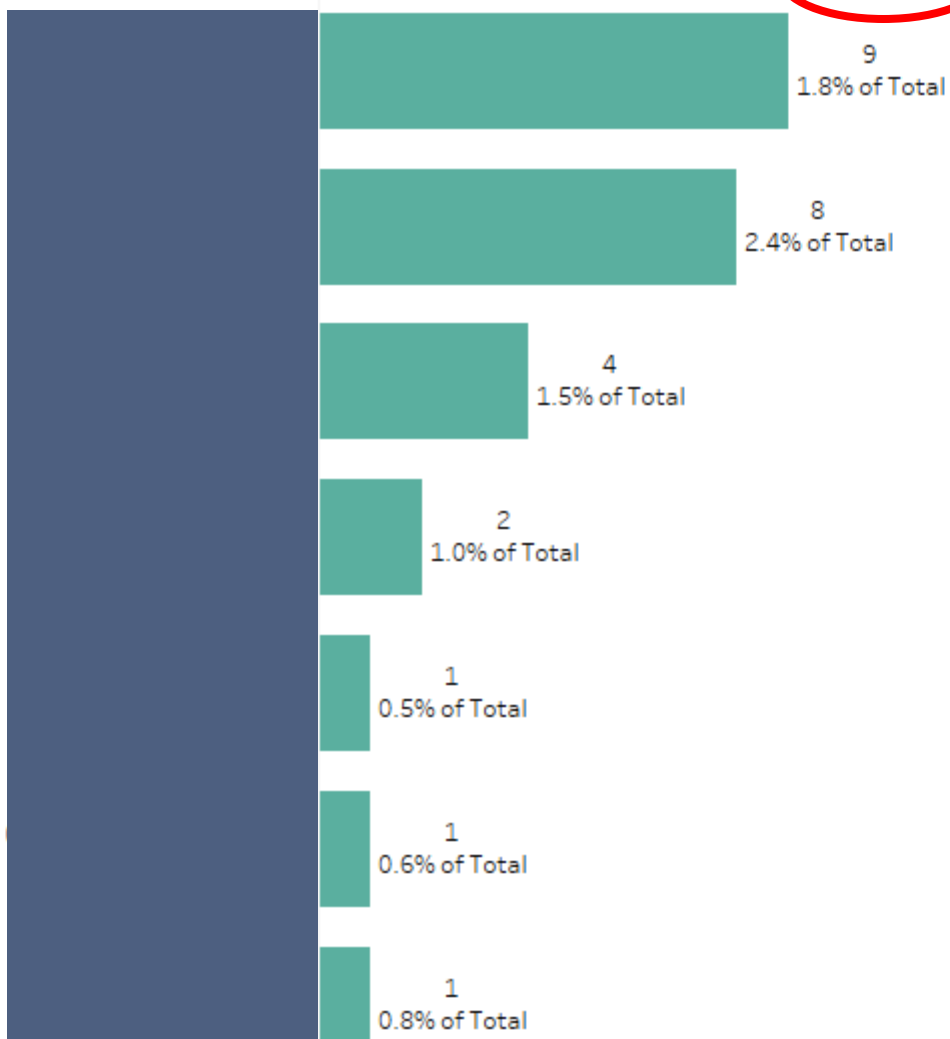


Number of Prednisolone Prescriptions over Time

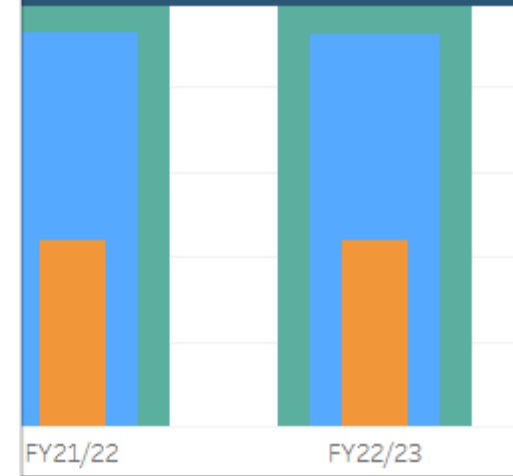


Date: FY22/23 Quarter 3
Number of Prednisolone Prescriptions: 26

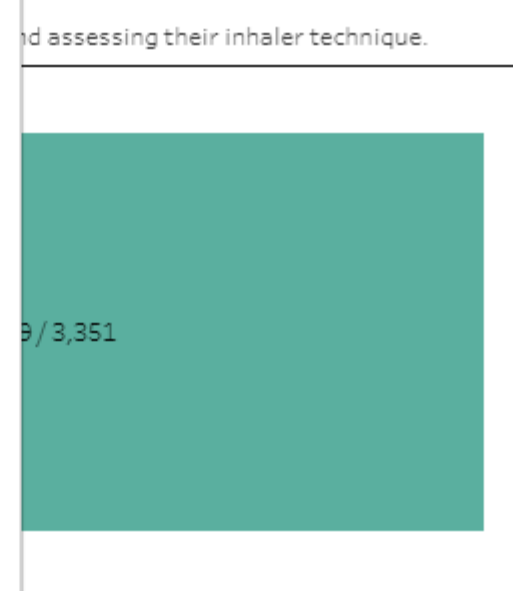
Number of Prednisolone Prescriptions over time by Practice



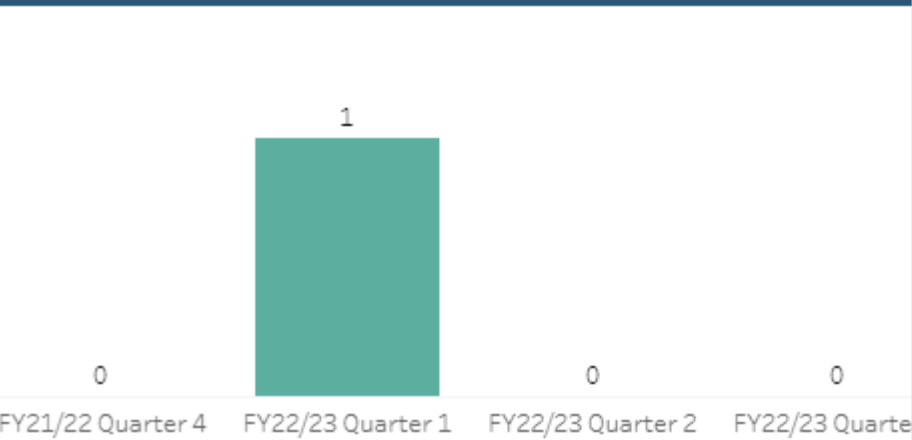
Share



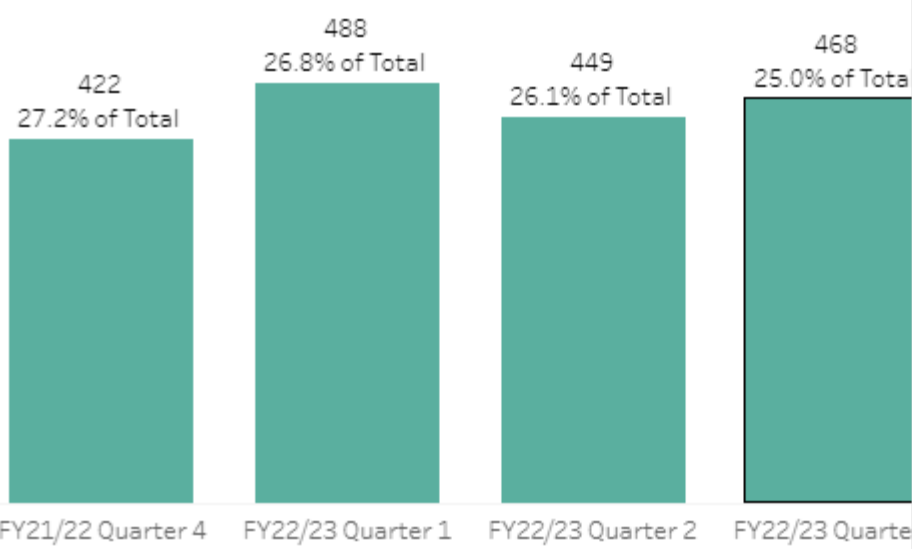
Coloured by # MDIs



View: Original



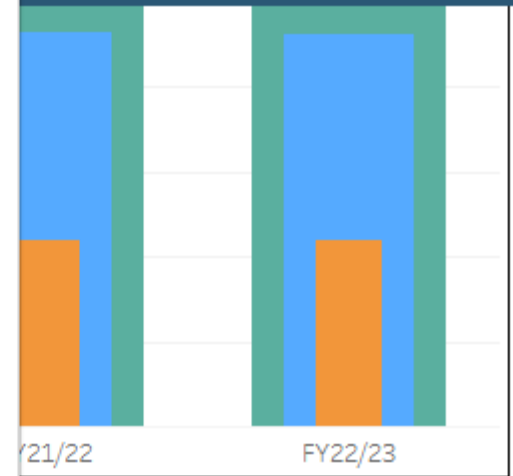
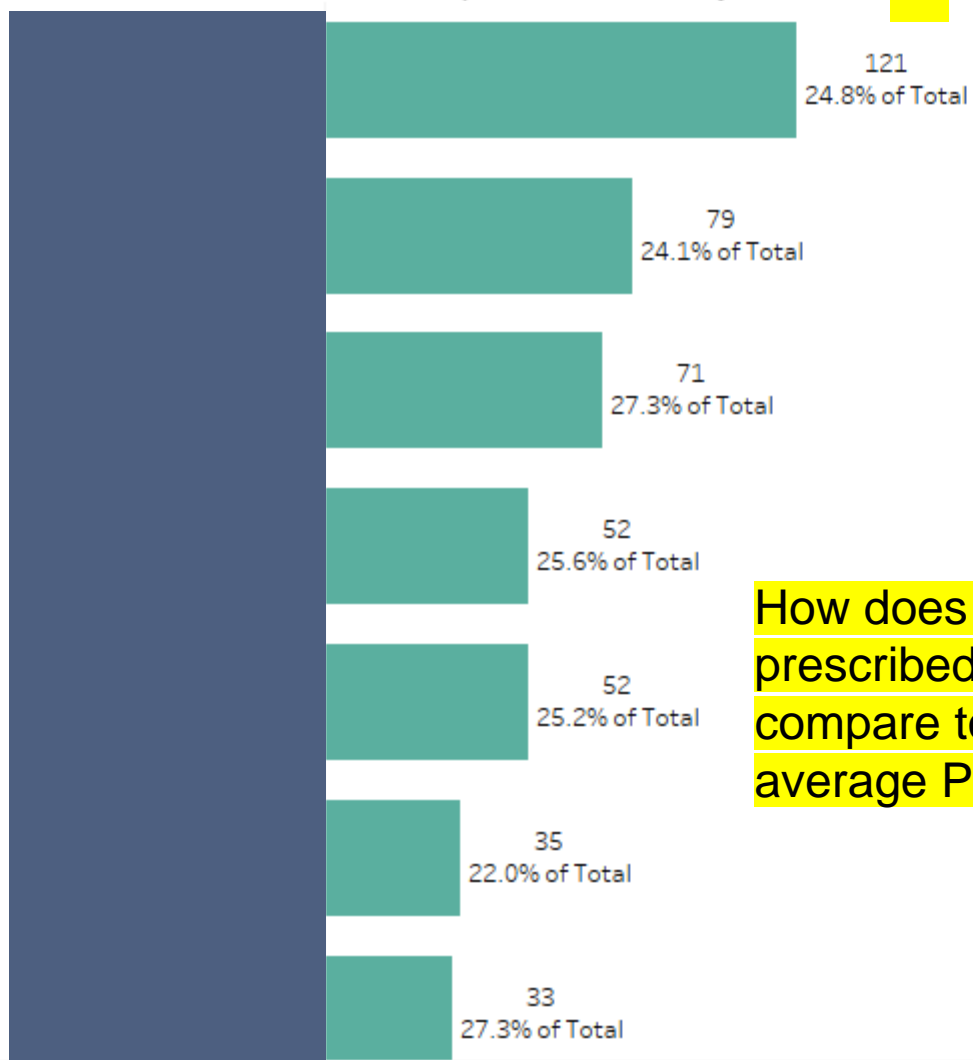
Number of ICS Prescriptions over Time



Date: FY22/23 Quarter 3
Number of ICS Prescriptions: 468

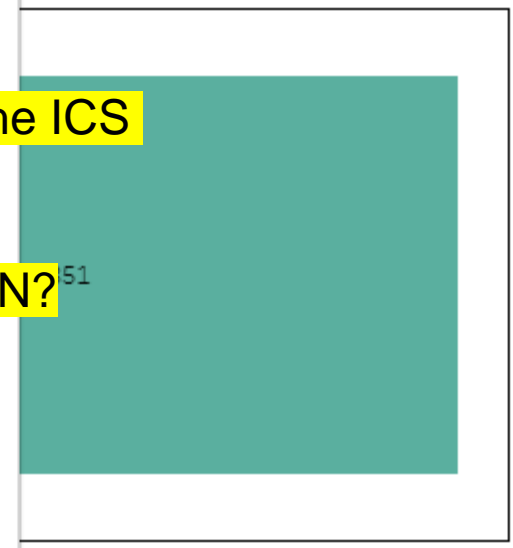
Number of ICS Prescriptions over time by Practice

R



Coloured by # MDIs

How does the ICS prescribed compare to average PCN?



General Population of Asthmatic Patients

Analysis of the population of asthmatic patients



Use the filters or click on a chart to update the others accordingly

Reset All Filters

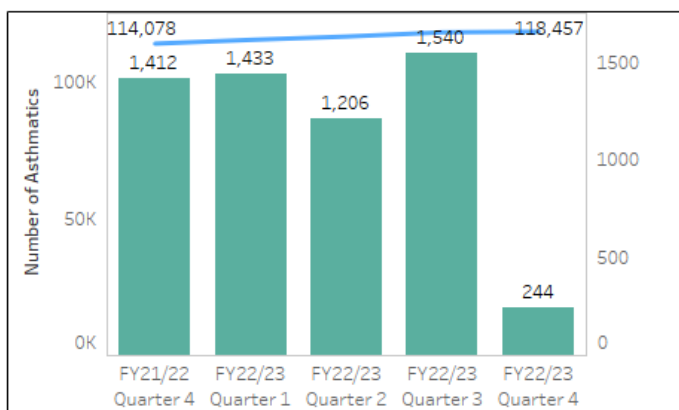
Refresh Date: 10/02/2023 16:41:05

Latest Data Date: 21/01/2023

ICS	Health Borough	PCN	Practice	Gender	Age Band	Deprivation	Ethnicity
All	All	All	All	All	All	All	All
Population in Cohort	Asthma Patients in Cohort	Adult Asthma Patients in Cohort	CYP Asthma Patients in Cohort	Patients with QOF Co-Morbidities in Cohort	Patients under Secondary Care in Cohort	A&E Patients under Secondary Care in Cohort	Inpatients under Secondary Care in Cohort
2,787,875	118,457	103,106	15,351	64,392	9,289	756	9,289

Number of Asthma Patients over time

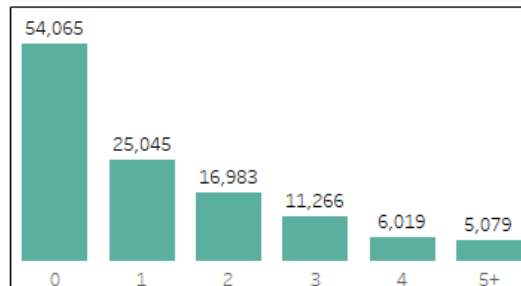
Diagnosis
■ Total Number of Asthmatics
■ New Asthma Diagnoses



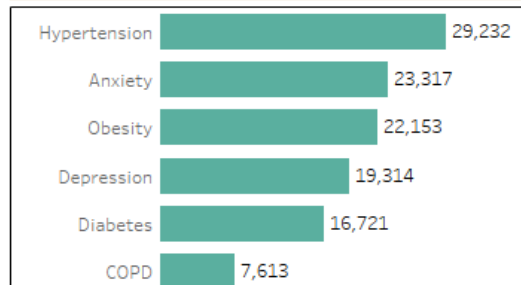
Asthma Patients by Age and Gender

Age Band	Male	Female
1 - 5	1	
6 - 12	5,053	3,053
13 - 17	4,281	2,962
18 - 24	3,801	4,149
25 - 34	7,014	8,777
35 - 44	6,619	9,229
45 - 54	7,434	10,319
55 - 64	7,981	11,310
65 - 79	7,548	11,671
80+	2,578	4,674

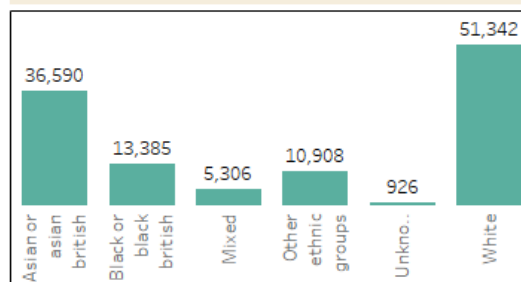
Asthma Patients with Co-Morbidities



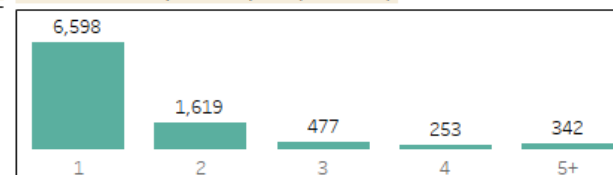
of Patients with Key Comorbidities



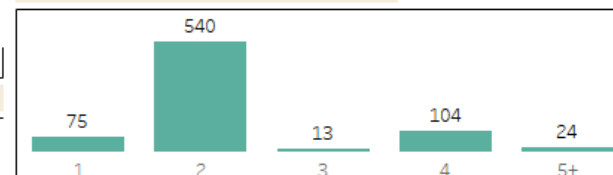
Asthma Patients by Ethnicity



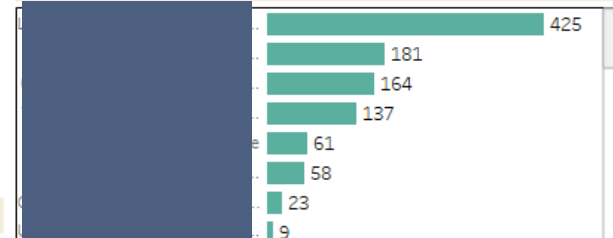
Patients with Inpatient Spells (Last 12m)



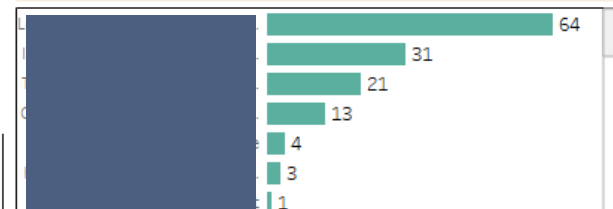
Patients with ED Visits (Last 12m)



Patients with ED Visits but no Primary Care Visit in last 12 Months



Patients with Asthma related GP appointments within 2 weeks of Asthma ED Visit



General Population of Asthmatic Patients

Analysis of the population of asthmatic patients



Use the filters or click on a chart to update the others accordingly

Reset All Filters

Refresh Date: 2/10/2023 4:41:05 PM

Latest Data Date: 1/21/2023

All ICS All Health Borough All PCN All Practice All Gender All Age Band Multiple values All Deprivation All Ethnicity

Population in Cohort Asthma Patients in Cohort Adult Asthma Patients in Cohort CYP Asthma Patients in Cohort Patients with QOF Co-Morbidities in Cohort Patients under Secondary Care in Cohort A&E Patients under Secondary Care in Cohort Inpatients under Secondary Care in Cohort

491,951

15,351

0

15,351

427

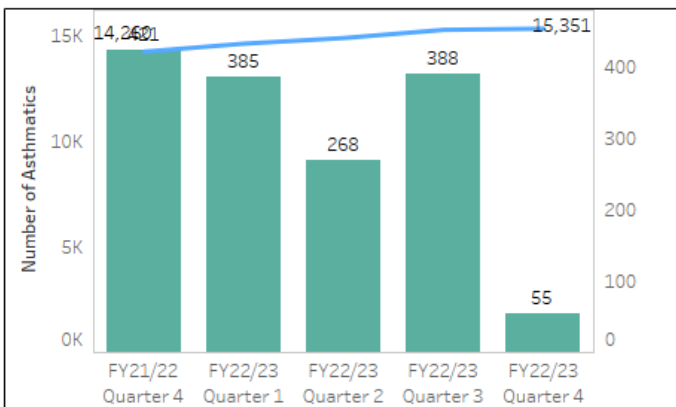
849

235

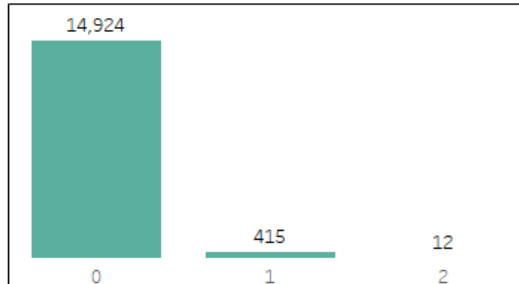
849

Number of Asthma Patients over time Diagnosis

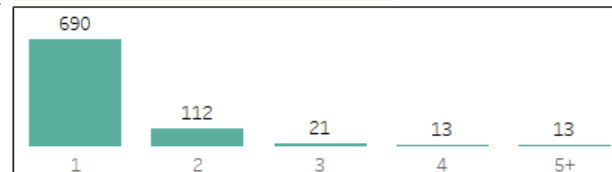
Total Number of Asthmatics New Asthma Diagnoses



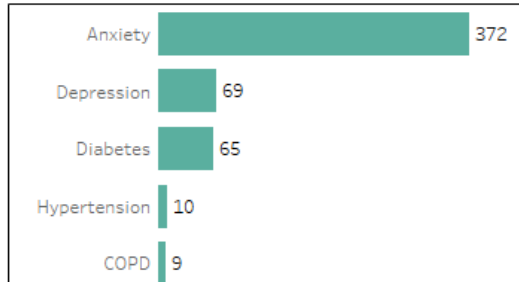
Asthma Patients with Co-Morbidities



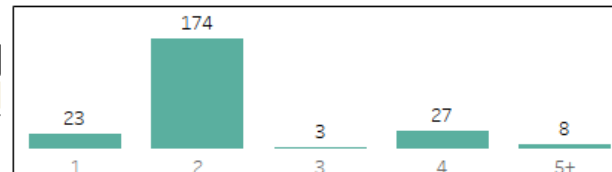
Patients with Inpatient Spells (Last 12m) [Tooltip Detail](#) [Health Borou..](#)



of Patients with Key Comorbidities



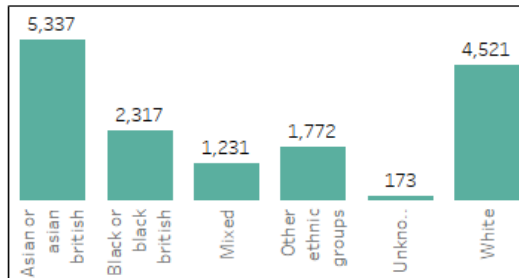
Patients with ED Visits (Last 12m) [Tooltip Detail](#) [Health Borou..](#)



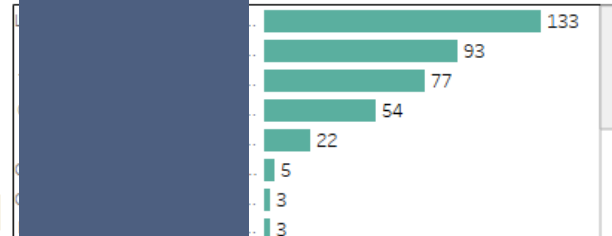
Asthma Patients by Age and Gender

Age Band	Male	Female
1 - 5	1	1
6 - 12	5,053	3,053
13 - 17	4,281	2,962

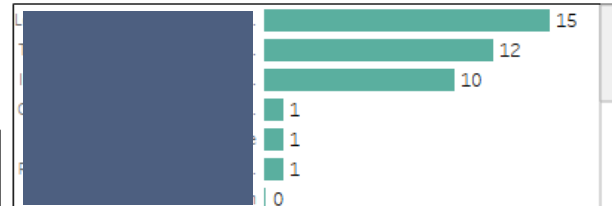
Asthma Patients by Ethnicity



Patients with ED Visits but no Primary Care Visit in last 12 Months [Tooltip Detail](#) [Health Borou..](#)



Patients with Asthma related GP appointments within 2 weeks of Asthma ED Visit [Tooltip Detail](#) [Health Borou..](#)



Wider Determinants of Asthmatic Patients

Analysis of wider determinants affecting asthmatic patients



Use the filters or click on a chart to update the others accordingly

Reset All Filters

Refresh Date: 10/02/2023 16:41:05

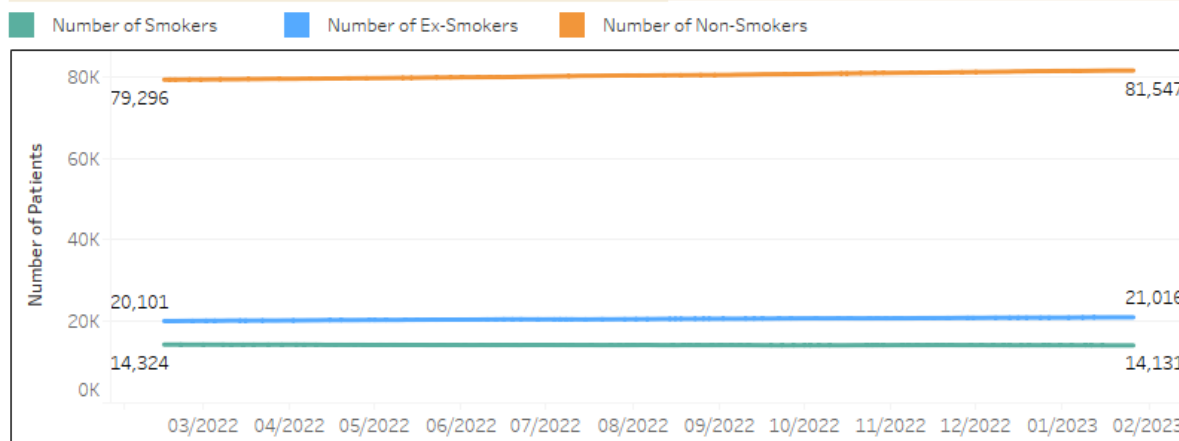
Latest Data Date: 21/01/2023



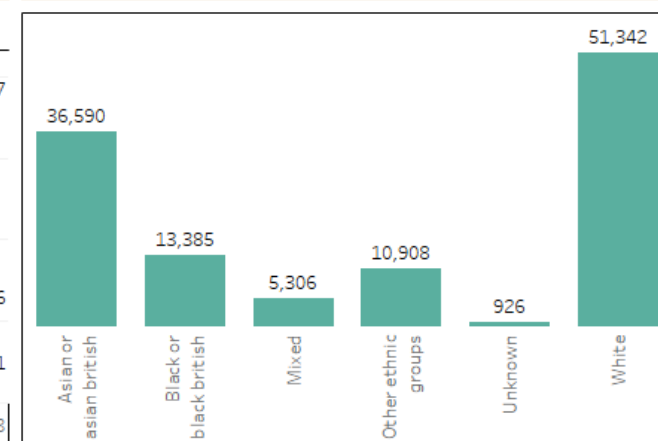
All ICS Health Borough All PCN All Practice All Gender All Age Band All Deprivation All Ethnicity

# of Smokers	% of Patients who are smokers	# of Ex-Smokers	% of Patients who are ex-smokers	# of Patients Prescribed Anti-Smoking Products	% of Patients prescribed Anti-Smoking Products	# of Patients Overweight or Obese	% of Patients Overweight or Obese	# of Patients Living in Highly Polluted Areas	% of Patients Living in Highly Polluted Areas
14,444	12%	21,219	18%	282	0%	65,674	55%	2,839	2%

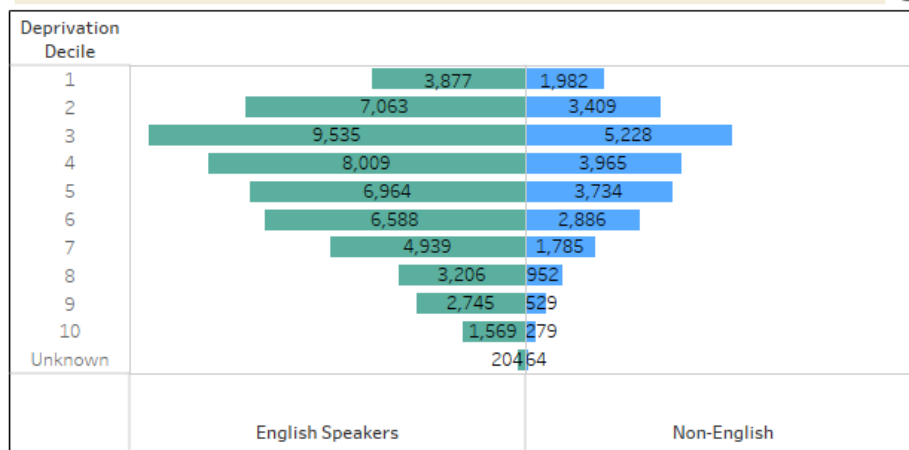
Asthma Patients by Smoking



Asthma Patients by Ethnicity



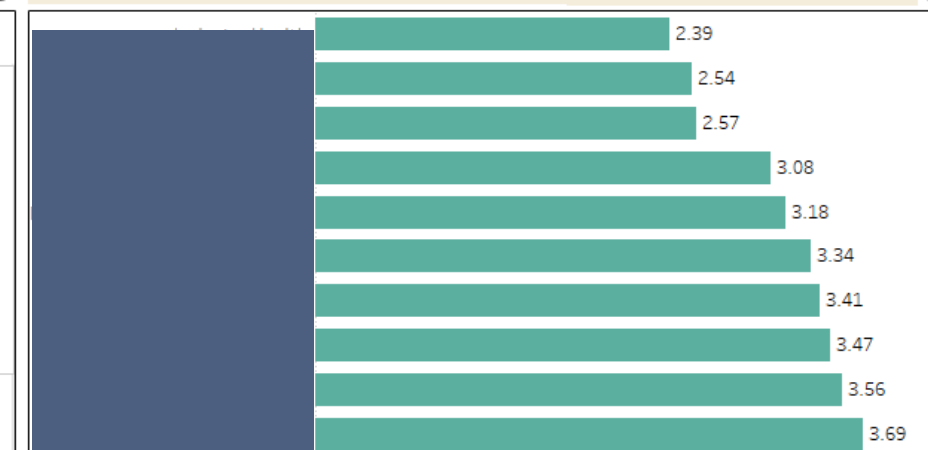
Asthma Patients by Deprivation and First Language



10 Most Deprived

PCN's

by Avg. Deprivation Decile



F

Questions?



Thank you

Contacts:

Dr Sarah Elkin - Consultant in integrated respiratory medicine & Co-Clinical Director, Respiratory, NHSE/
sarah.elkin@nhs.net

Dr Irem Patel - Consultant in respiratory medicine & Co-Clinical Director, Respiratory NHSE/
irempatel@nhs.net

Darush Attar-Zadeh - Clinical Fellow Imperial College Health Partners, NWL CYP Asthma Network
d.attar-zadeh@nhs.net

Clare Thomson - Innovation Lead, Imperial College Health Partners
clare.thomson@imperialcollegehealthpartners.com

For LADS troubleshooting - nhsnw1.wsicsupport@nhs.net