

Impact of the COVID-19 pandemic on antibiotic use in Scotland

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Aim

To evaluate trends in antibiotic use in the community in Scotland during the COVID-19 pandemic.

Method

Data Source

- PIS electronic prescription data
- Available two days after Rx generated

Antibiotic Grouping

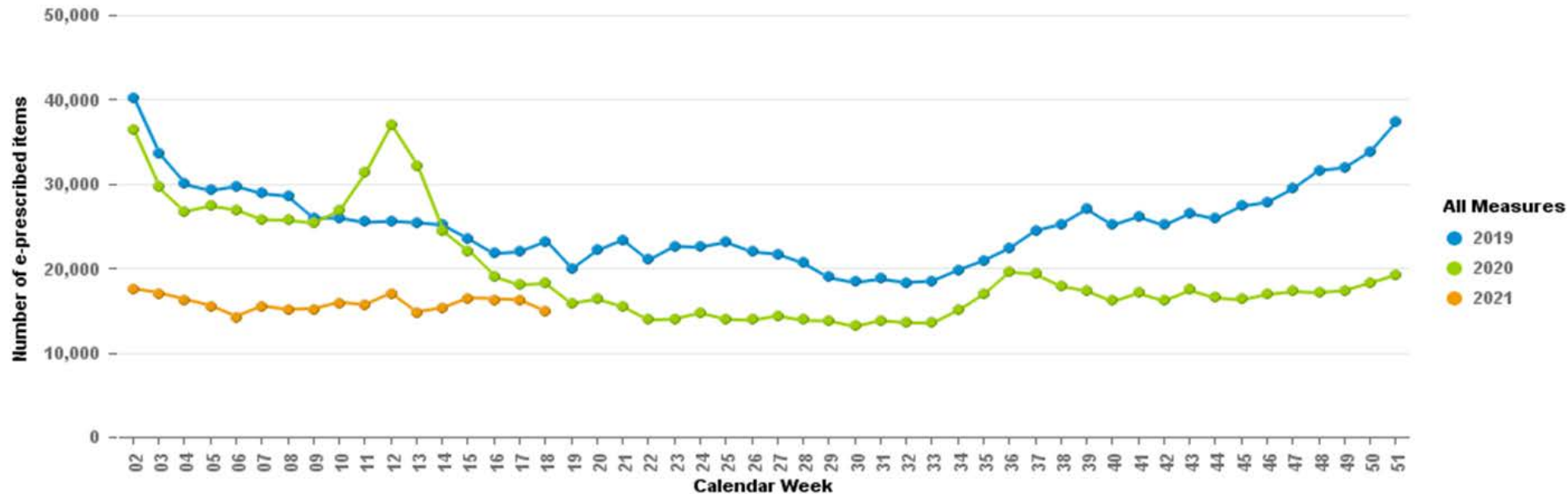
Respiratory antibiotics

- Amoxicillin
- Azithromycin
- Clarithromycin
- Co-amoxiclav
- Doxycycline

Key Outcome Measure

- Weekly number of prescriptions for antibiotics in 2021 compared with number in 2019 and 2020

Results: Respiratory antibiotics



Method

Data Source

- PIS data on dispensed (paid) prescriptions (all primary except dental)
- Available 3 months in arrears

Total antibiotics

Respiratory antibiotics

- Amoxicillin
- Azithromycin
- Clarithromycin
- Co-amoxiclav
- Doxycycline

Key Outcome Measure

- Monthly number of prescriptions for antibiotics in 2021 compared with number in 2019 and 2020

Aim

To evaluate trends in antibiotic use in COVID assessment centres in Scotland during the COVID-19 pandemic.

Method

Data Source

- PIS data on all dispensed (paid) prescriptions
- HMUD data on antibiotic use issues to COVID assessment centres (CAC)
- Available 3 months in arrears

Total antibiotics

Key Outcome Measure

- Monthly antibiotic DDD in CAC as percentage of primary care (ex dental) antibiotic DDD

Results: 2020 Total antibiotic use Primary Care and Covid Assessment Centres (CACs)



2020 Month	Primary Care	DDDs		Percentage CACs
		CACs	Combined	
Mar	3,120,379	13,457	3,133,836	0.43%
Apr	2,620,204	28,966	2,649,170	1.09%
May	2,304,807	8,324	2,313,131	0.36%
Jun	2,301,699	359	2,302,058	0.02%
Jul	2,409,322	480	2,409,802	0.02%
Aug	2,365,356	1,720	2,367,076	0.07%
Sep	2,562,381	3,885	2,566,265	0.15%

Results: Total antibiotic use comparison, 2019 Primary Care against 2020 Primary Care and Covid Assessment Centres (CACs)



Month	DDD's / 1,000 Pop / Day		
	2019 Primary Care	2020 PC + CACs	Percentage Difference
Mar	17.19	18.50	7.6%
Apr	17.51	16.16	-7.7%
May	16.89	13.66	-19.1%
Jun	16.74	14.05	-16.1%
Jul	16.72	14.23	-14.9%
Aug	16.42	13.98	-14.9%
Sep	17.22	15.66	-9.1%

Method

Data Source

- PIS data on dispensed (paid) GP14 dental prescriptions
- Available 3 months in arrears

Total antibiotics

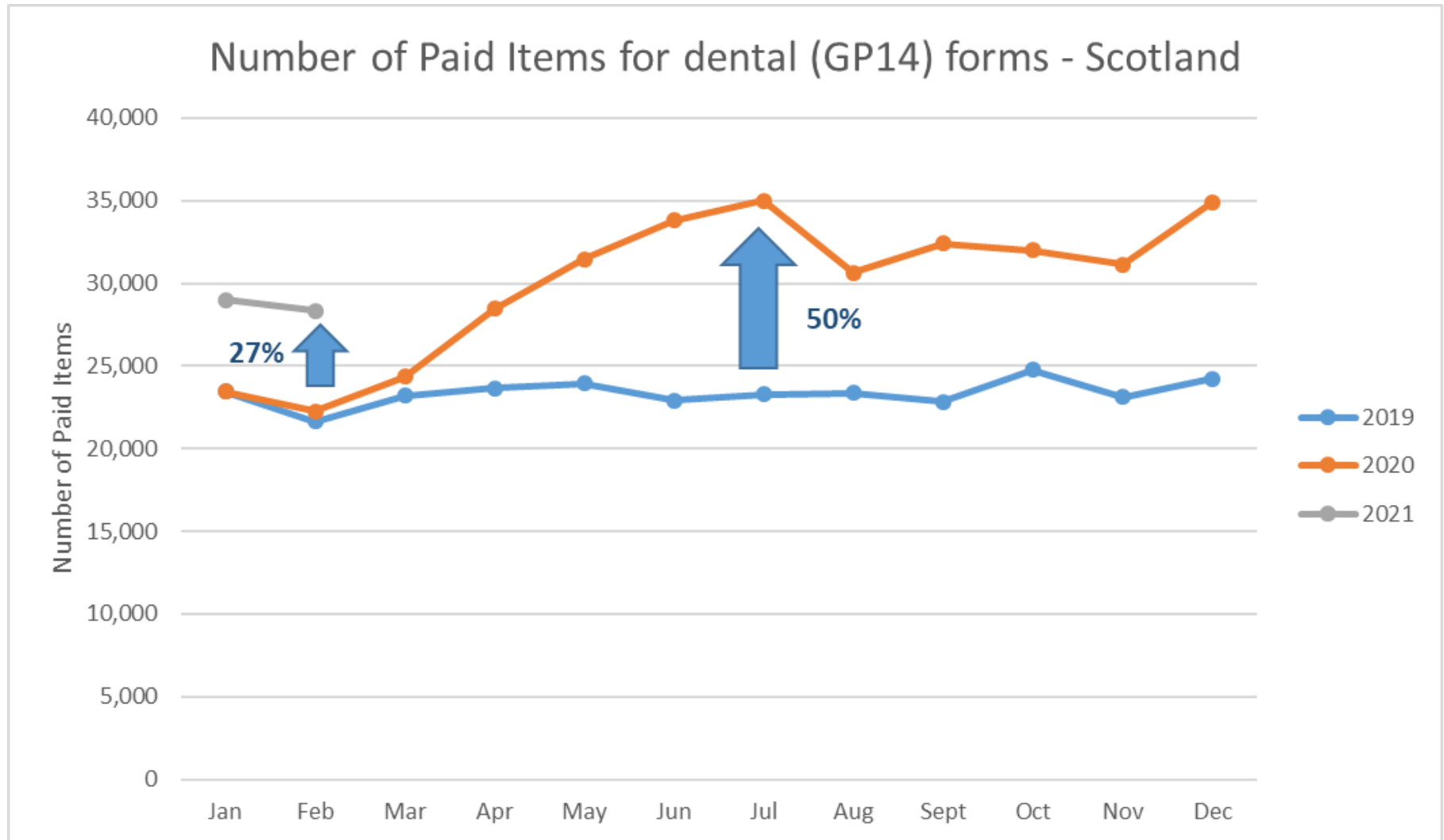
Specific antibiotics

- Amoxicillin
- Metronidazole
- Phenoxymethypenicillin

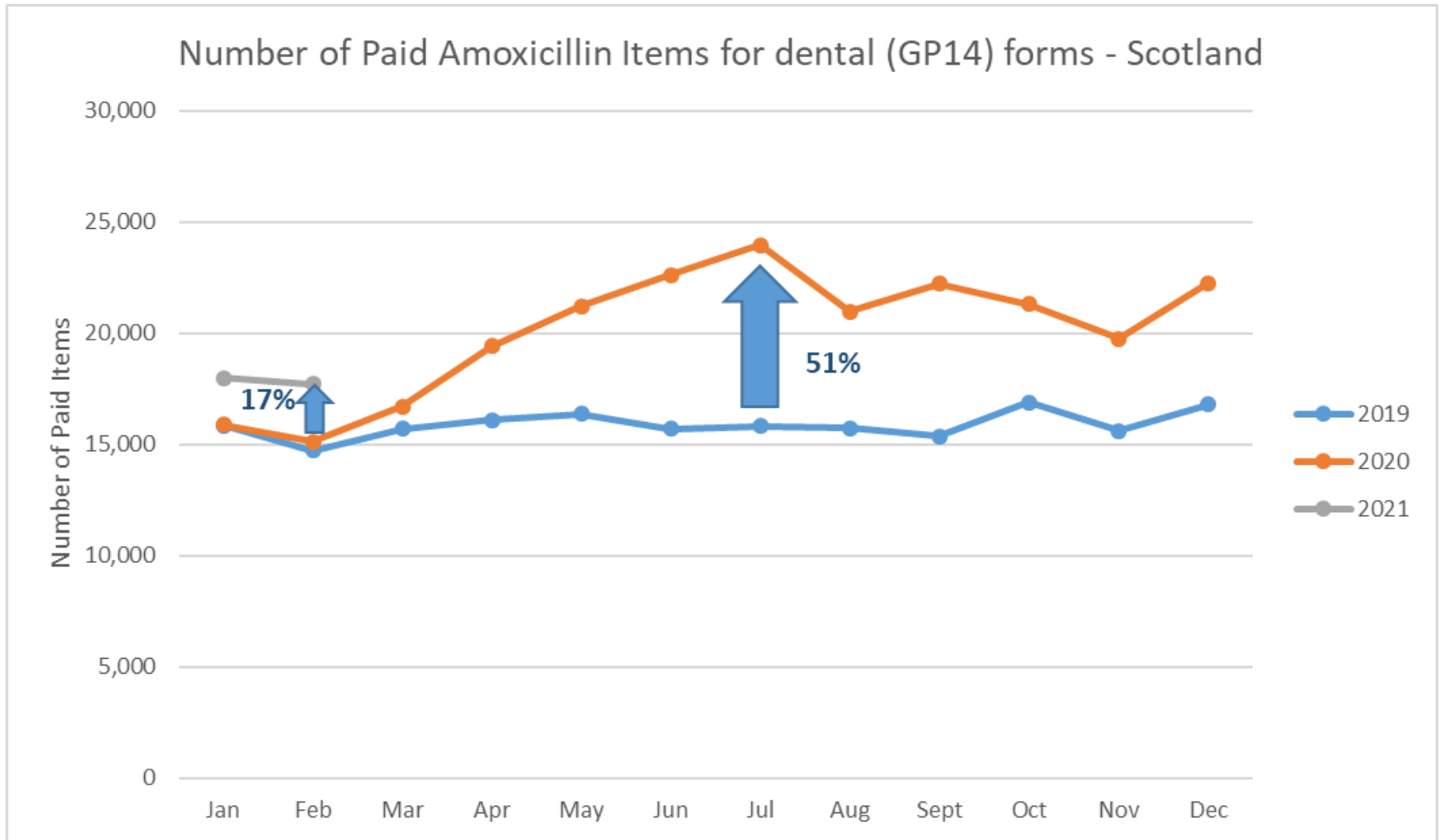
Key Outcome Measure

- Monthly number of prescriptions for antibiotics in 2021 compared with number in 2019 and 2020

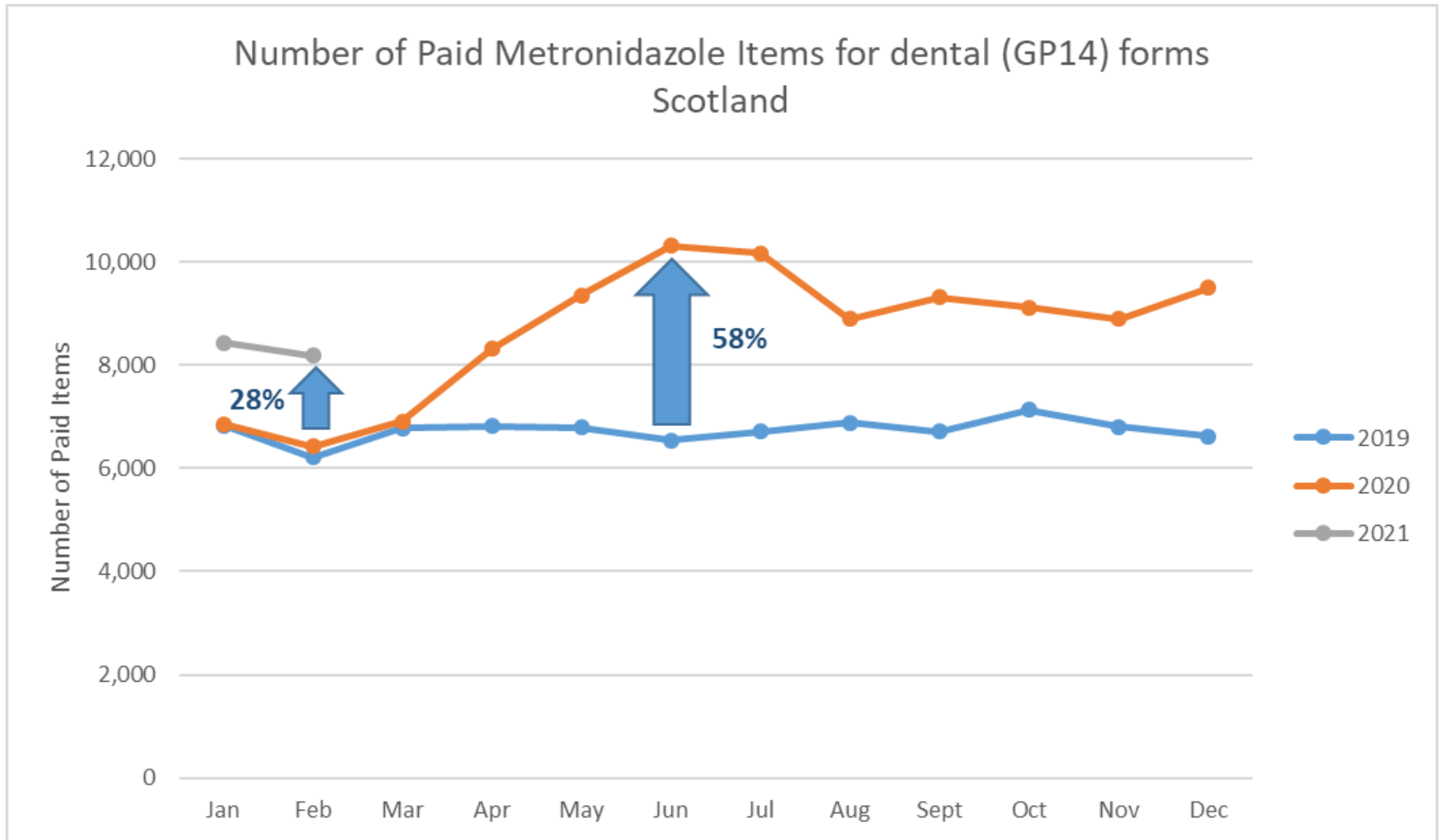
Results: dental antibiotic use



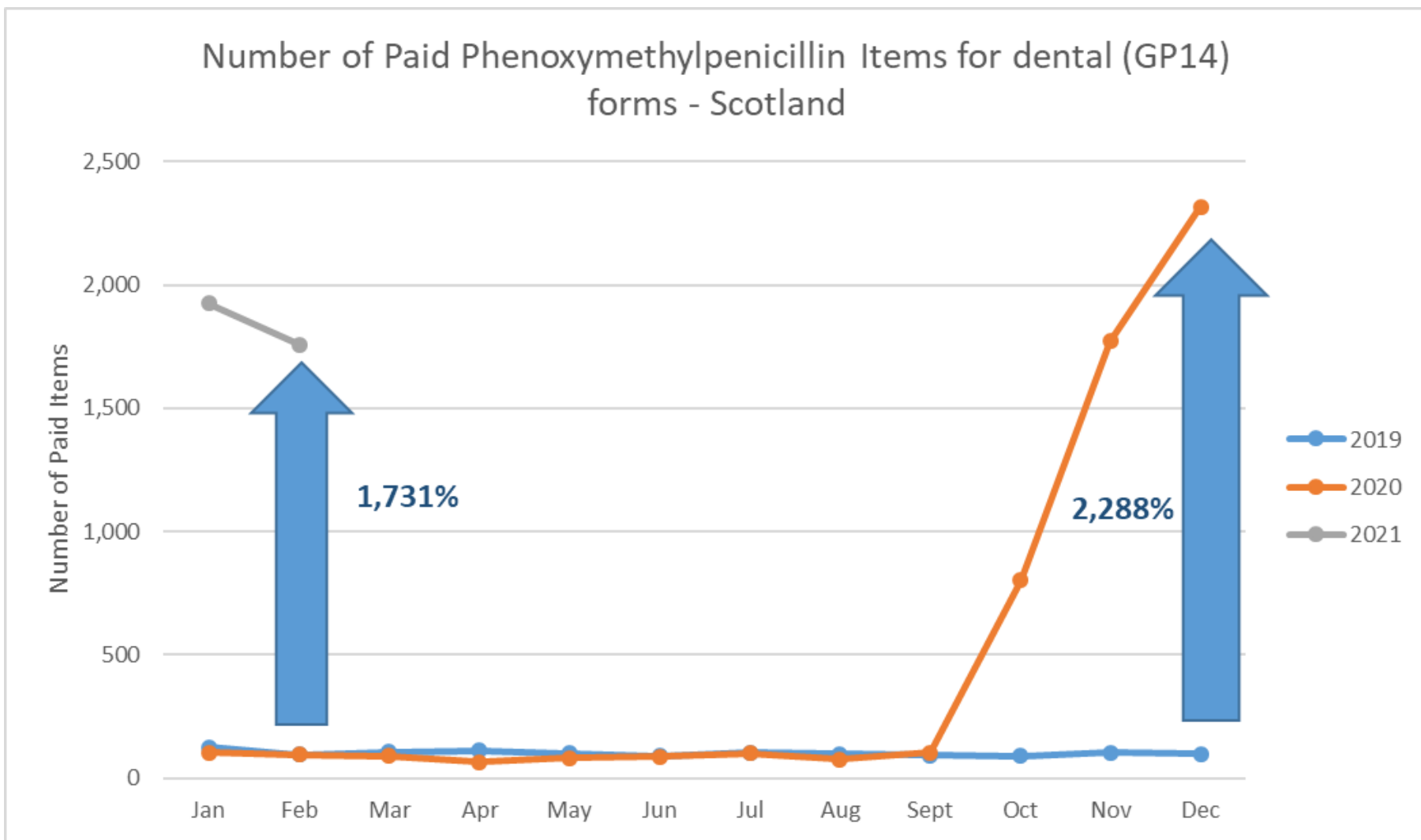
Results: dental amoxicillin use



Results: dental metronidazole use



Results: dental phenoxymethylpenicillin use



Aim

To evaluate trends in antibiotic use in acute hospitals in Scotland during the COVID-19 pandemic.

Method

Data Source

- Hospital Medicines Utilisation Database (HMUD)

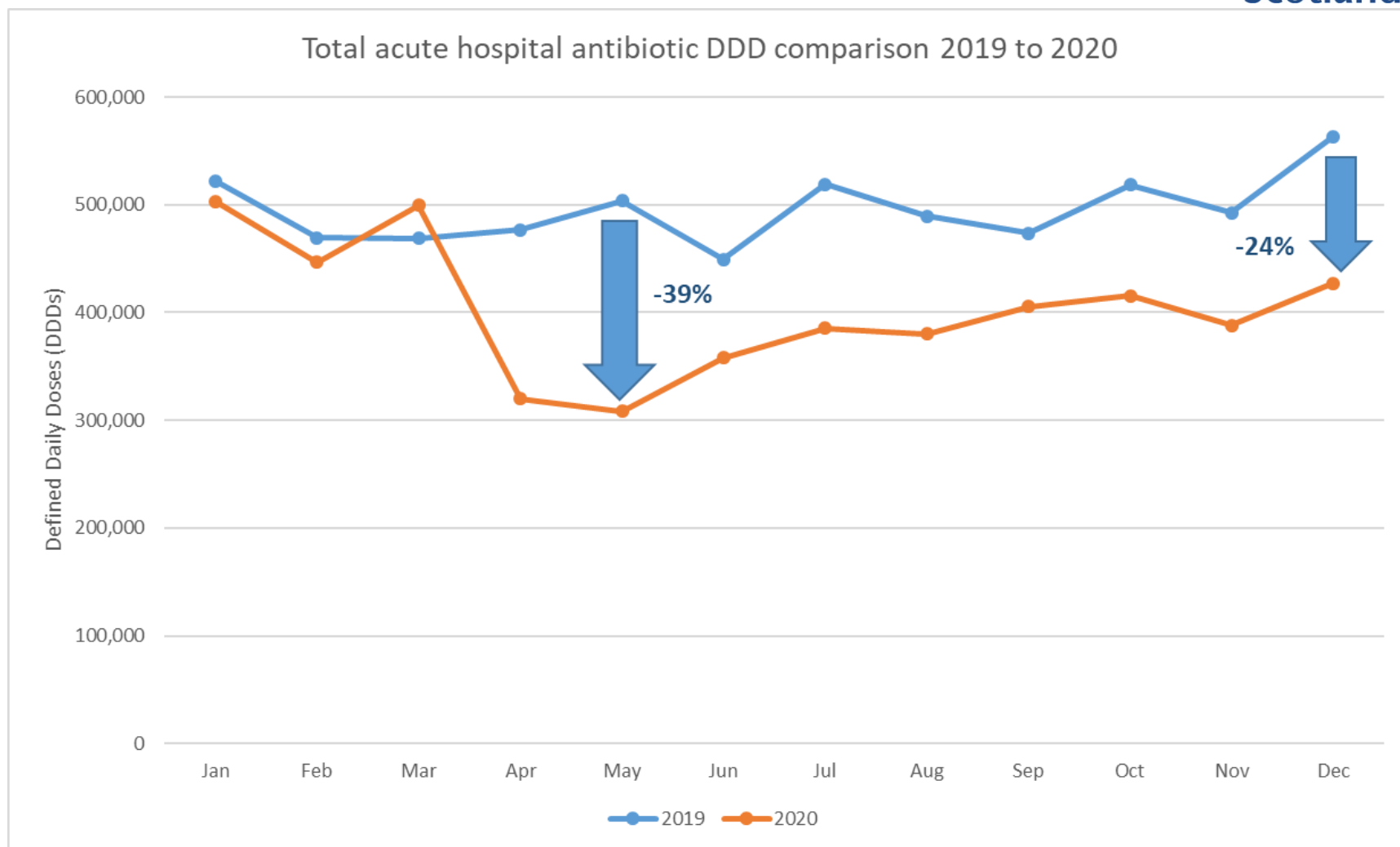
Total Antibiotics

Amoxicillin
Azithromycin
Ceftriaxone
Cefuroxime
Clarithromycin
Co-amoxiclav
Co-trimoxazole
Doxycycline
Meropenem
Piperacillin + Tazobactam

Key Outcome Measure

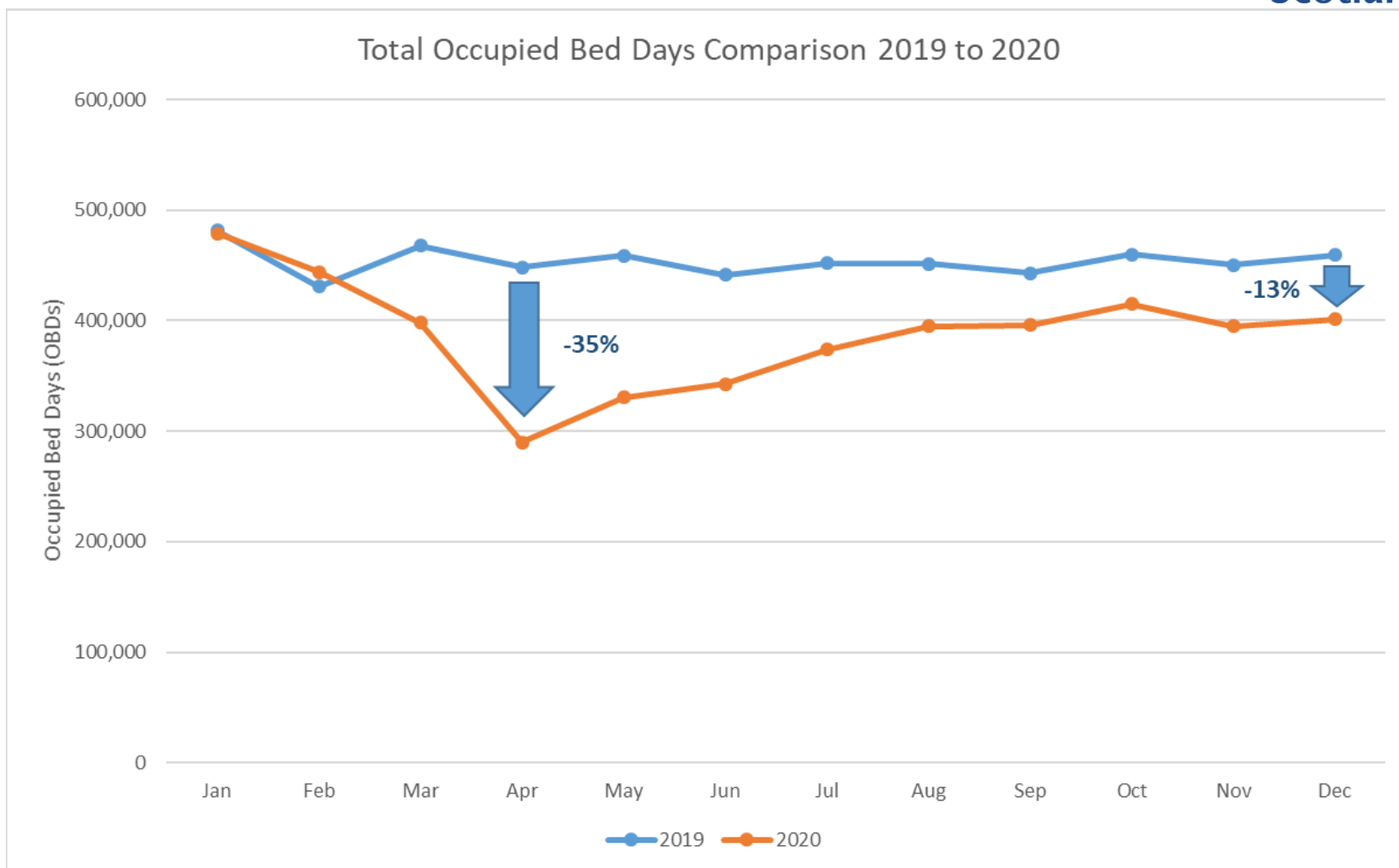
- Number of antibiotic DDD in 2020 compared with 2019

Results: total antibiotic use



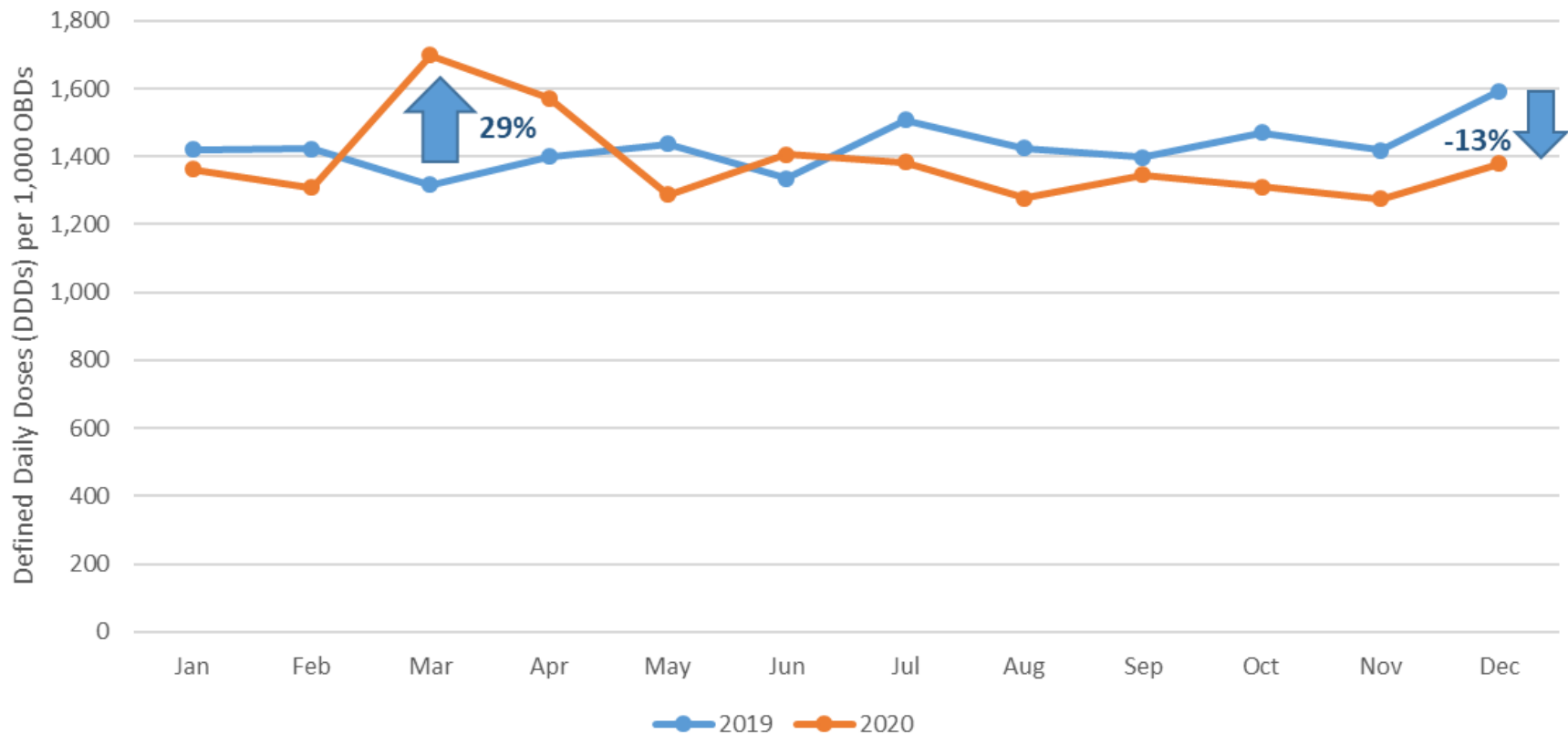
Excludes NHS Borders, NHS Dumfries & Galloway NHS Shetland, NHS Western Isles

Results: Occupied Bed Days



Results: total antibiotic use

Total acute hospital antibiotic DDD per 1,000 Occupied Bed Days comparison
2019 to 2020



Results: specific antibiotics

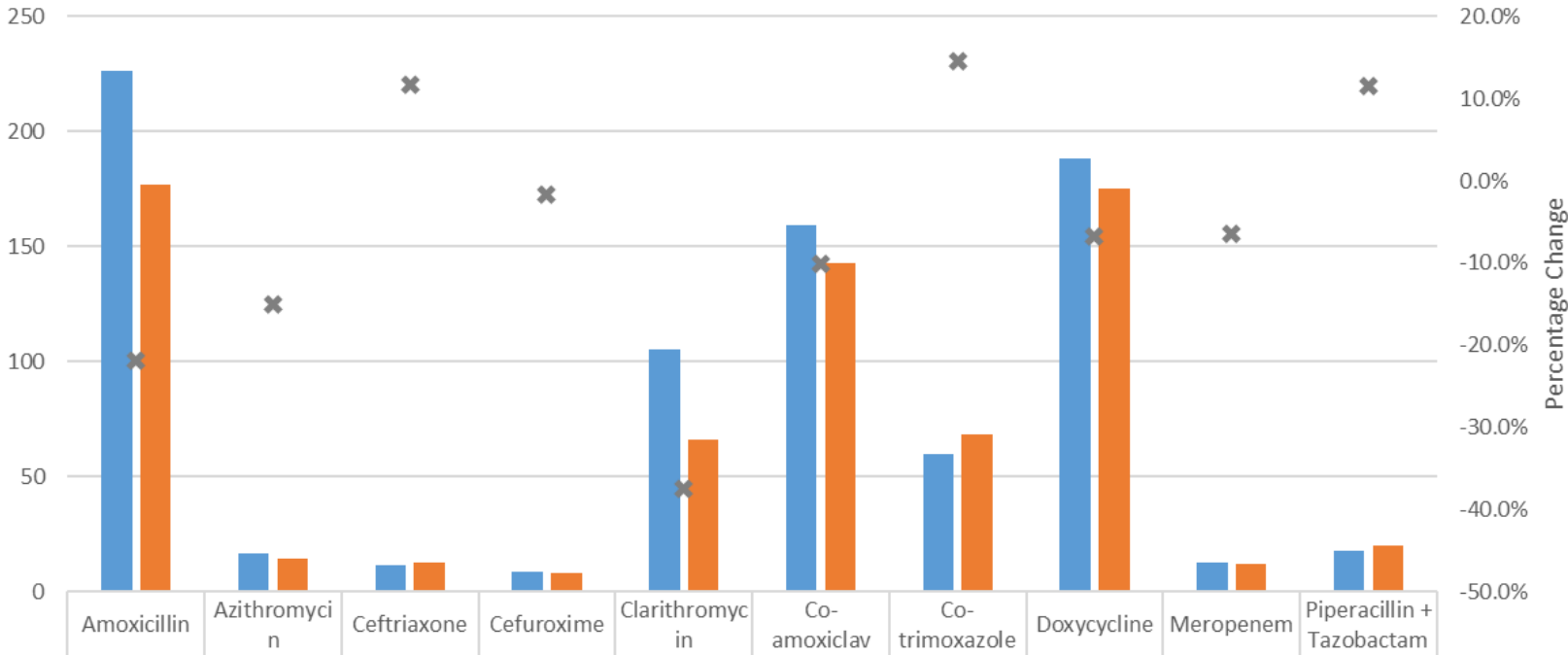
Quarter 4 2019 v 2020



DDDs per 1,000 OBDs Comparison between 2019 and 2020 (Q4)

■ 2019 ■ 2020 ✕ Percentage Change

Defined Daily Doses (DDDs) per 1,000 OBDs

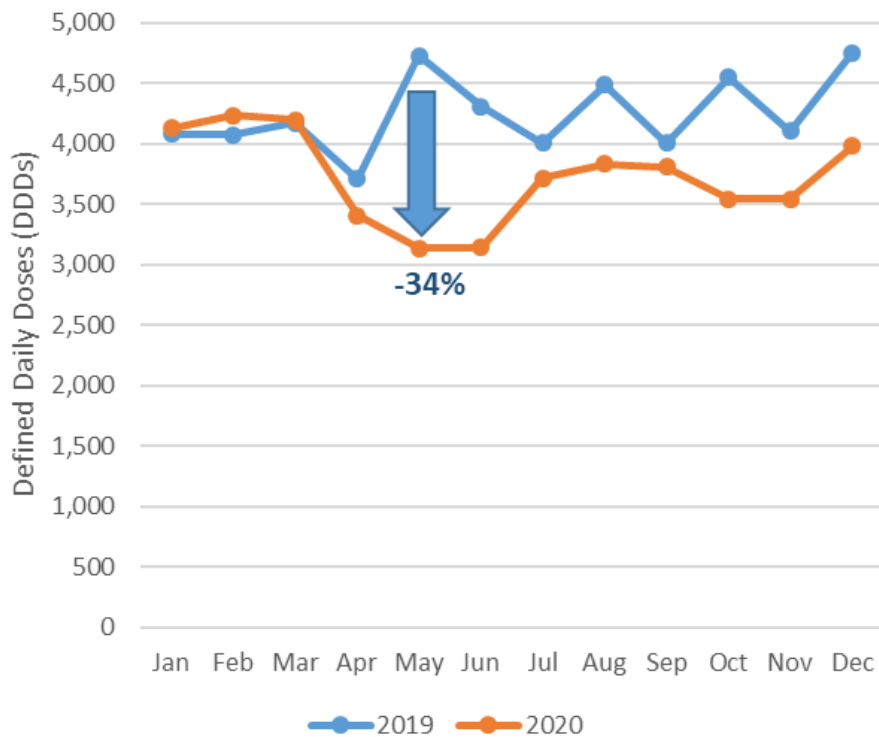


■ 2019	226.29	16.49	11.33	8.23	105.47	159.01	59.50	188.09	12.71	17.89
■ 2020	176.81	14.02	12.66	8.09	65.92	142.91	68.15	175.32	11.88	19.94
✕ Percentage Change	-21.9%	-15.0%	11.7%	-1.7%	-37.5%	-10.1%	14.5%	-6.8%	-6.5%	11.5%

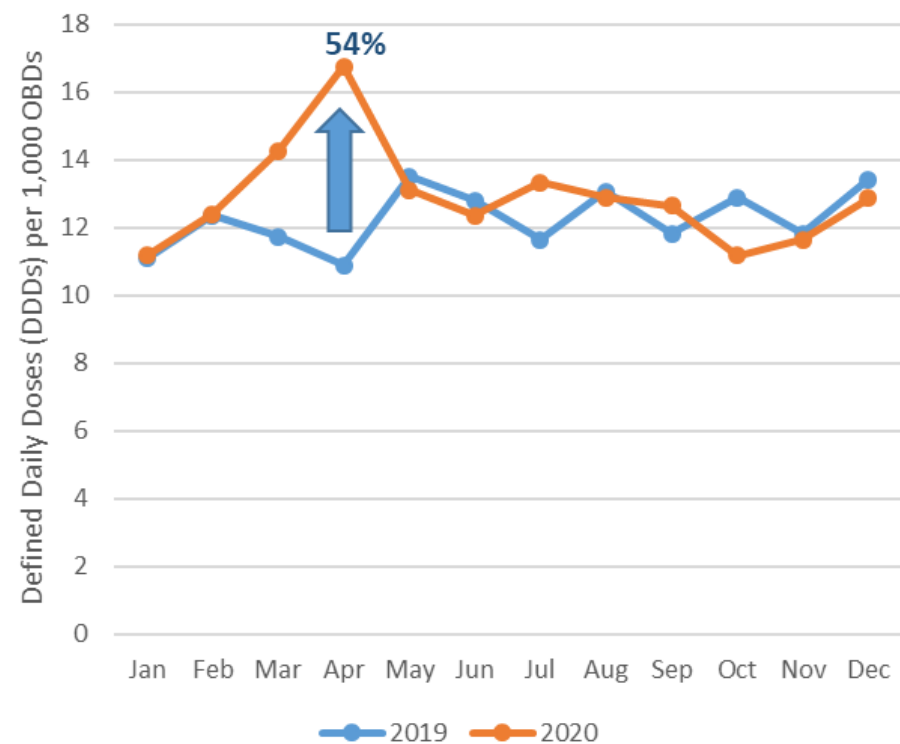
Excludes NHS Borders, NHS Dumfries & Galloway NHS Shetland, NHS Western Isles

Results: Meropenem

Meropenem DDD comparison 2019 to 2020

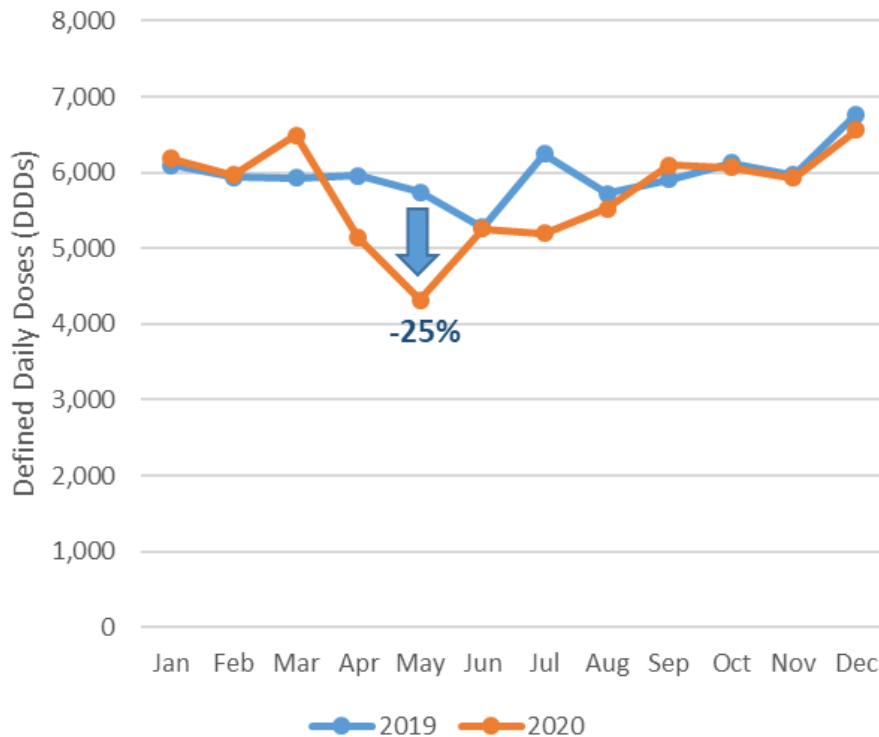


Meropenem DDD per 1,000 Occupied Bed Days comparison 2019 to 2020

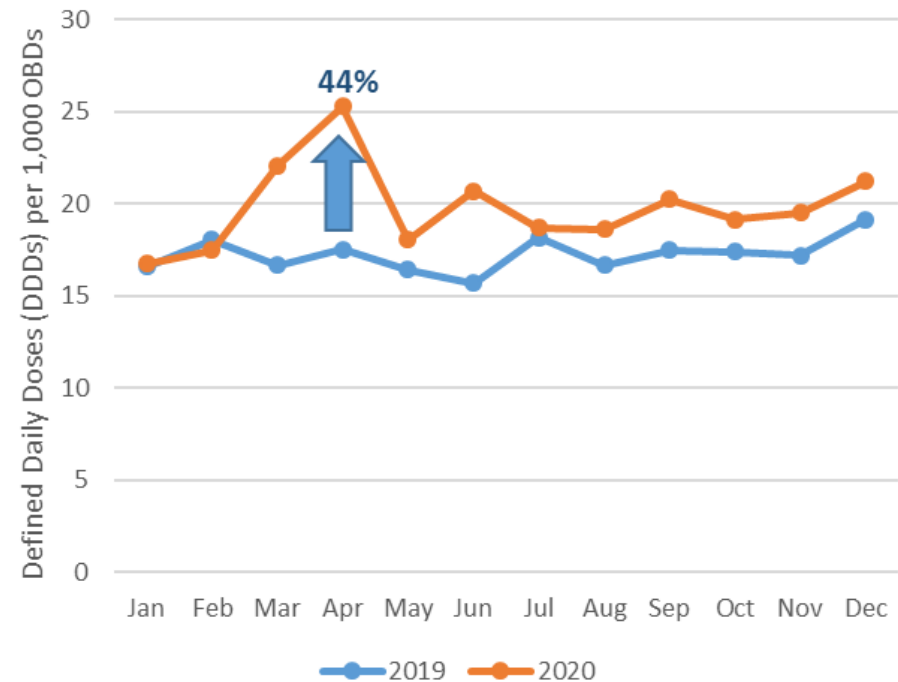


Results: Piperacillin + Tazobactam

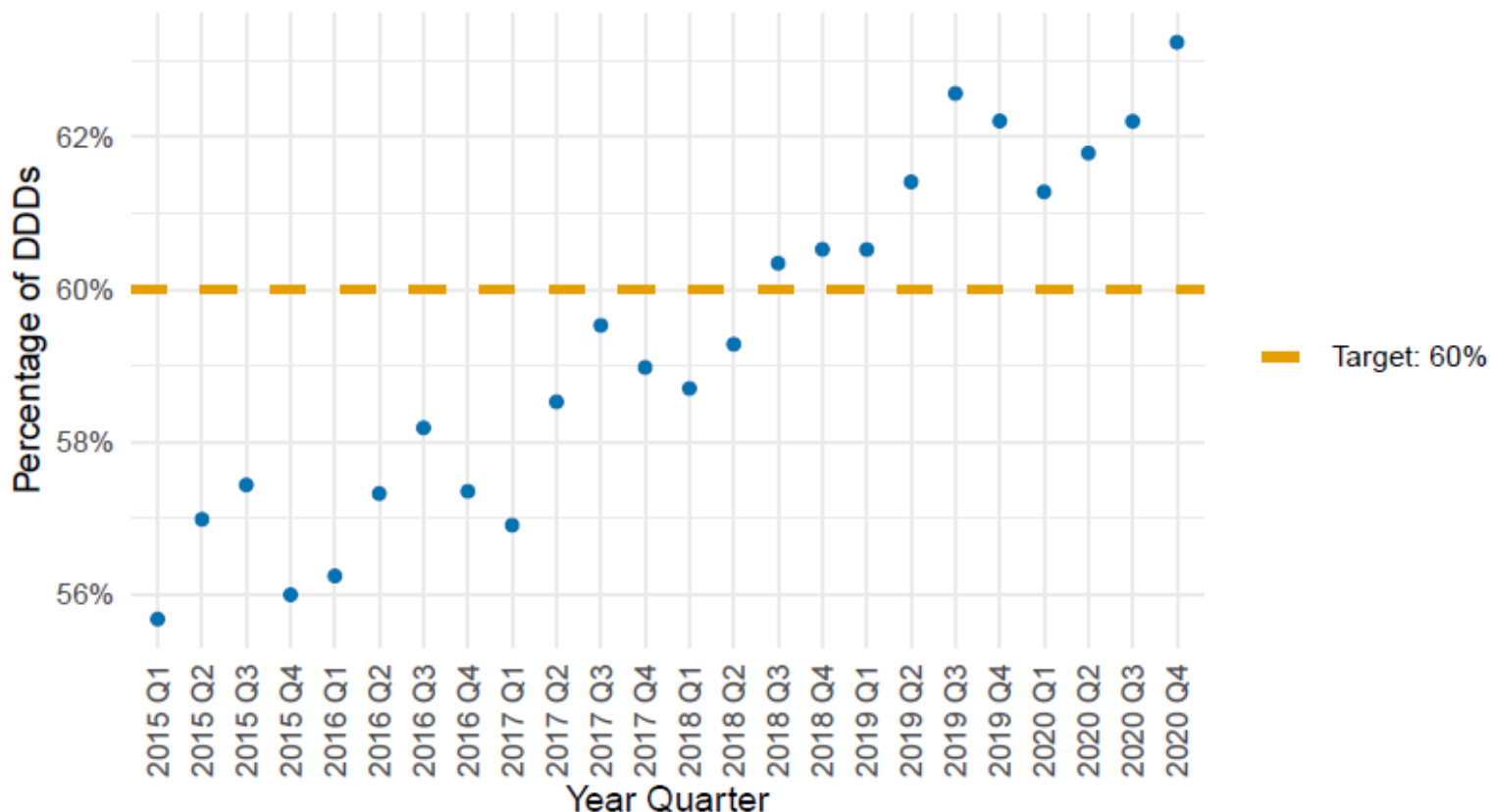
Piperacillin + Tazobactam DDD comparison 2019 to 2020



Piperacillin + Tazobactam DDD per 1,000 Occupied Bed Days comparison 2019 to 2020



Use of WHO Access antibiotics in Acute hospitals



2020 Q3 includes only partial data for NHS Borders (2% of Scottish Population), 2020 Q4 contains no data for NHS Borders (2% population), and NHS Dumfries & Galloway (3% of population), and 2020 Q4 contains only partial data for NHS Western Isles (0.5% population), and NHS Shetland (0.4% population).

Aim

To evaluate trends in antifungal use in acute hospitals in Scotland during the COVID-19 pandemic.

Method

Data Source

- Hospital Medicines Utilisation Database (HMUD)

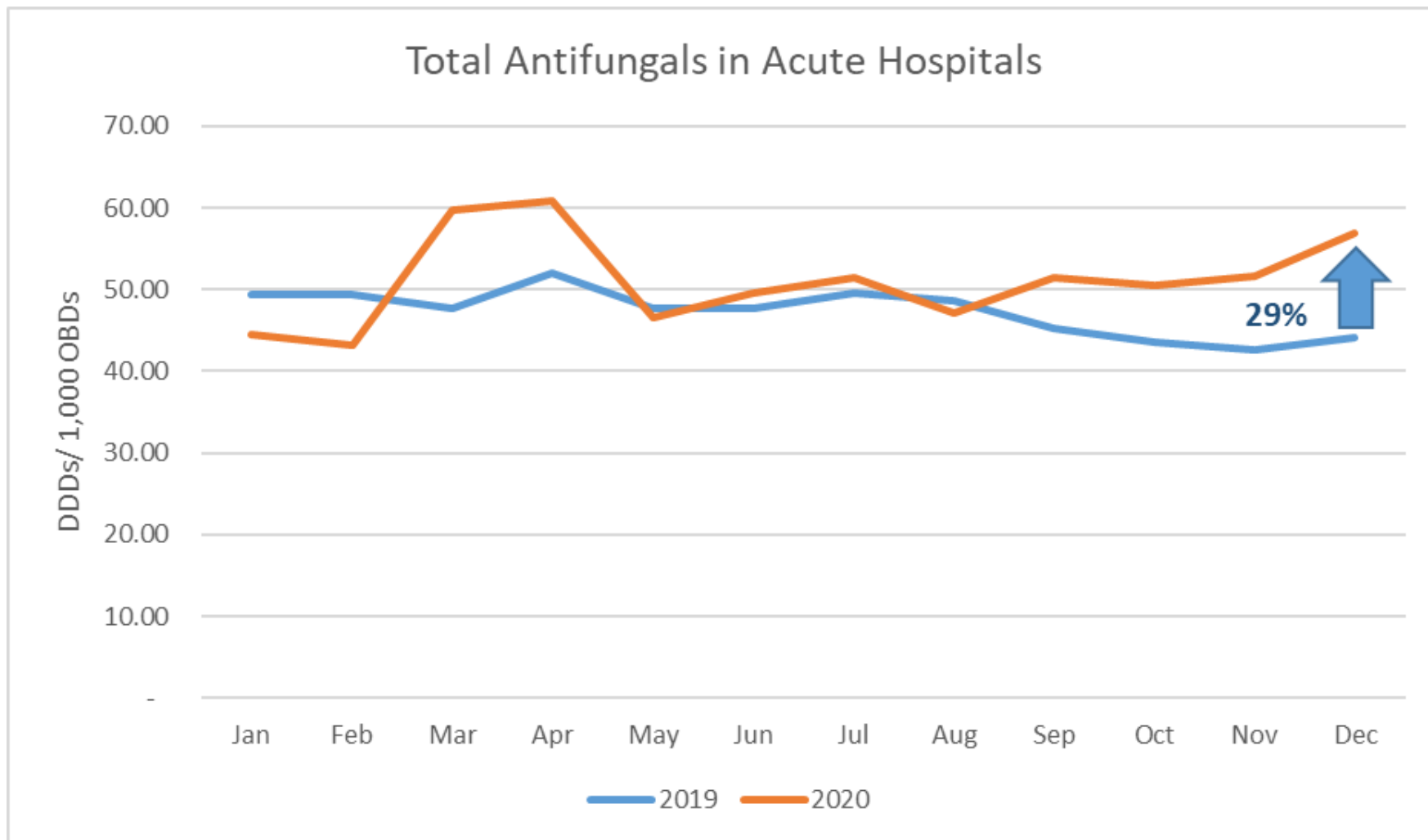
Total Antifungals

Azoles
Fluconazole
Other Azoles
Echinocandins

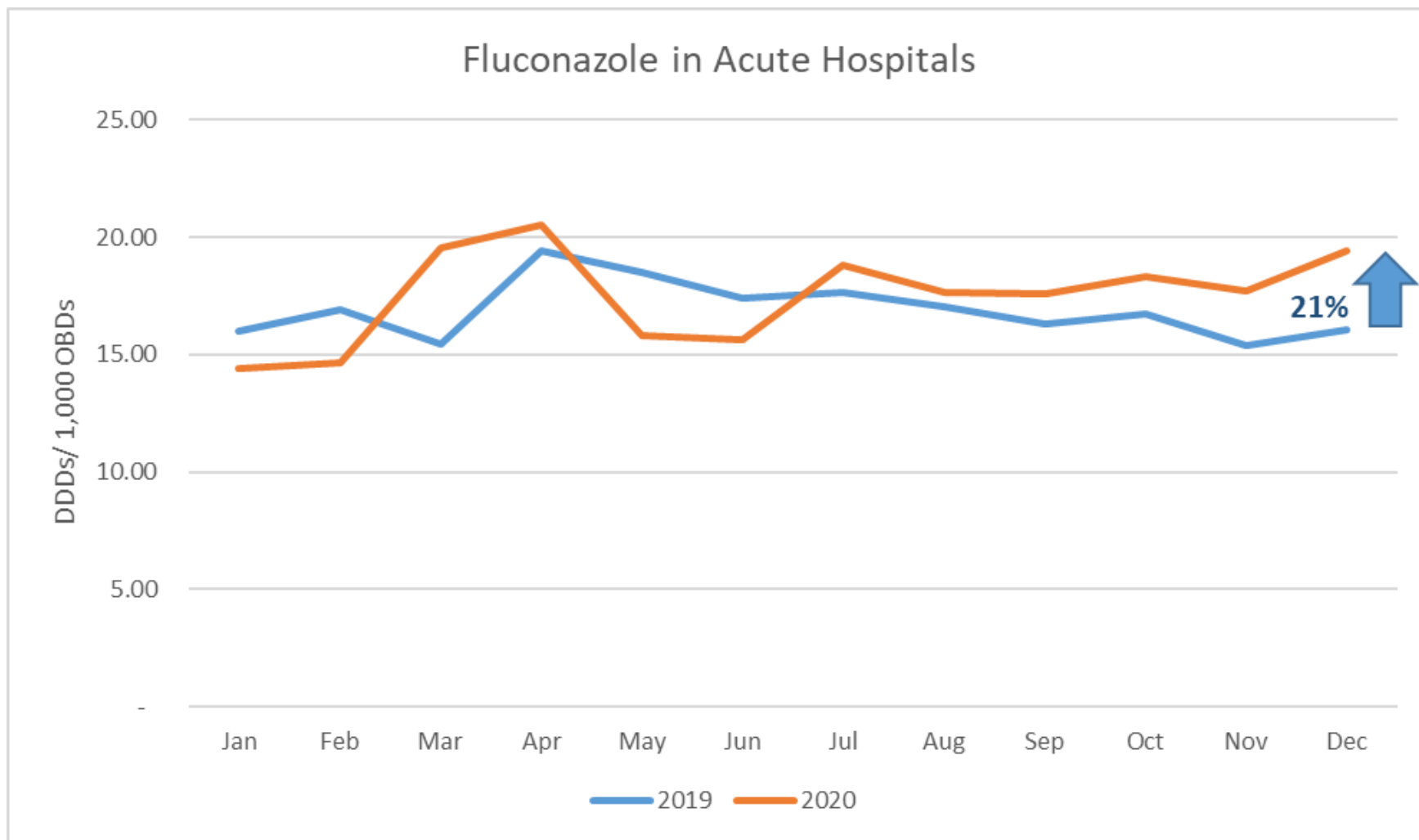
Key Outcome Measure

- Number of antibiotic DDD in 2020 compared with 2019

Results: total antifungal use

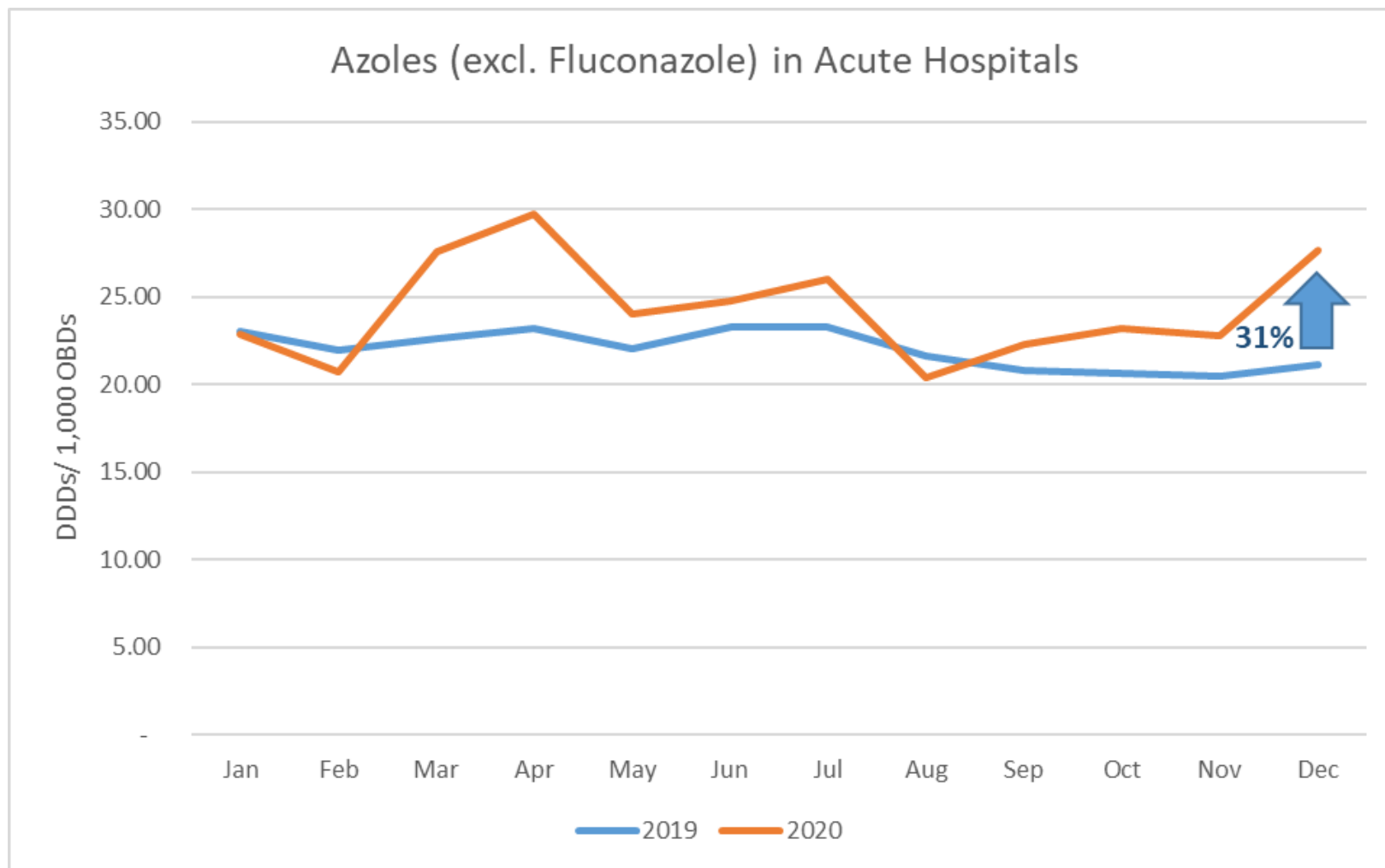


Results: fluconazole use

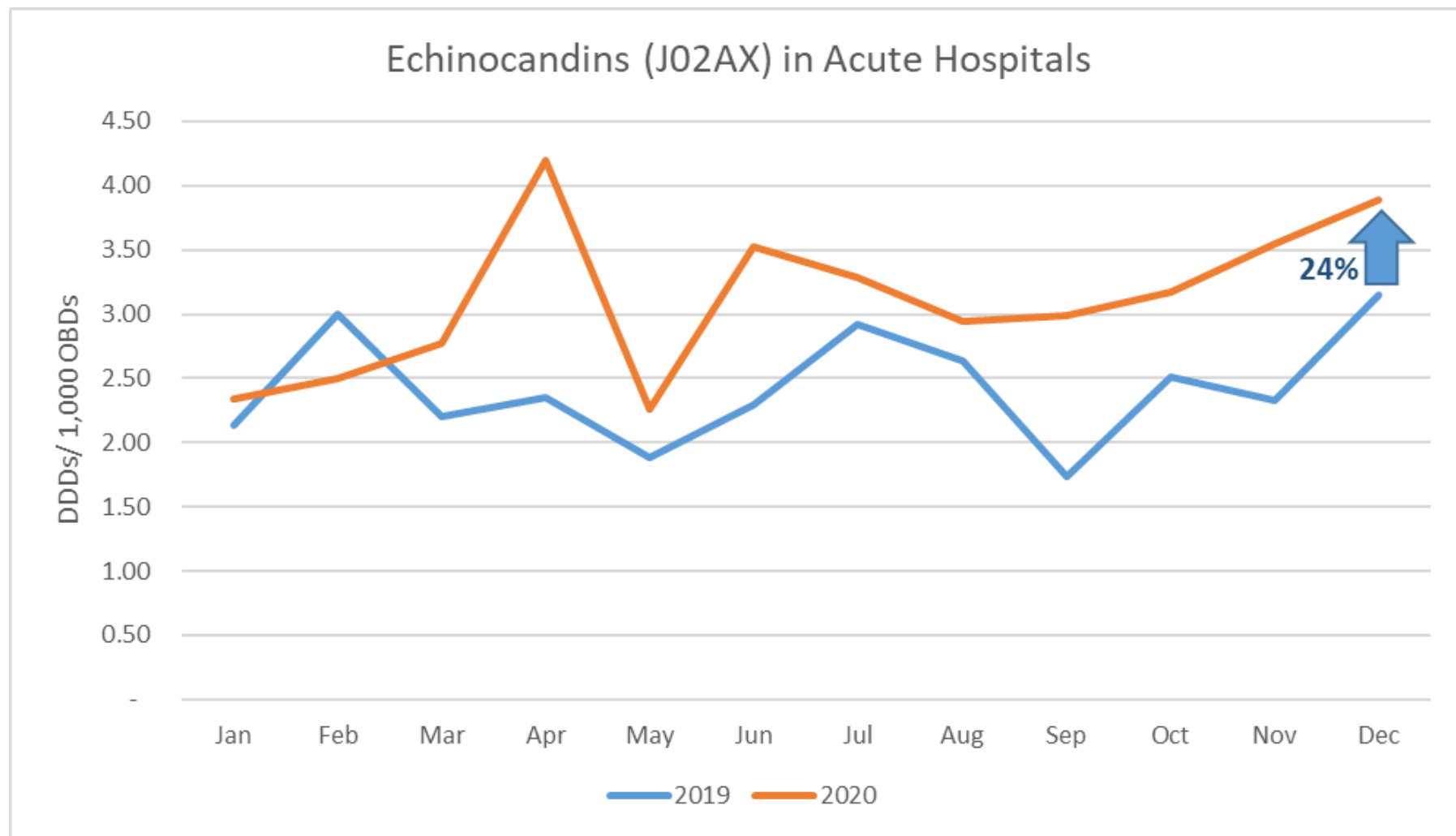


Excludes NHS Borders, NHS Dumfries & Galloway NHS Shetland, NHS Western Isles

Results: azoles (other) use



Results: Echinocandin use



Aim

To evaluate trends in total antibiotic use in humans in Scotland during the COVID-19 pandemic.

Method

Data Source

- PIS data on all dispensed (paid) prescriptions
- HMUD data on all secondary care antibiotic use
- Available 3 months in arrears

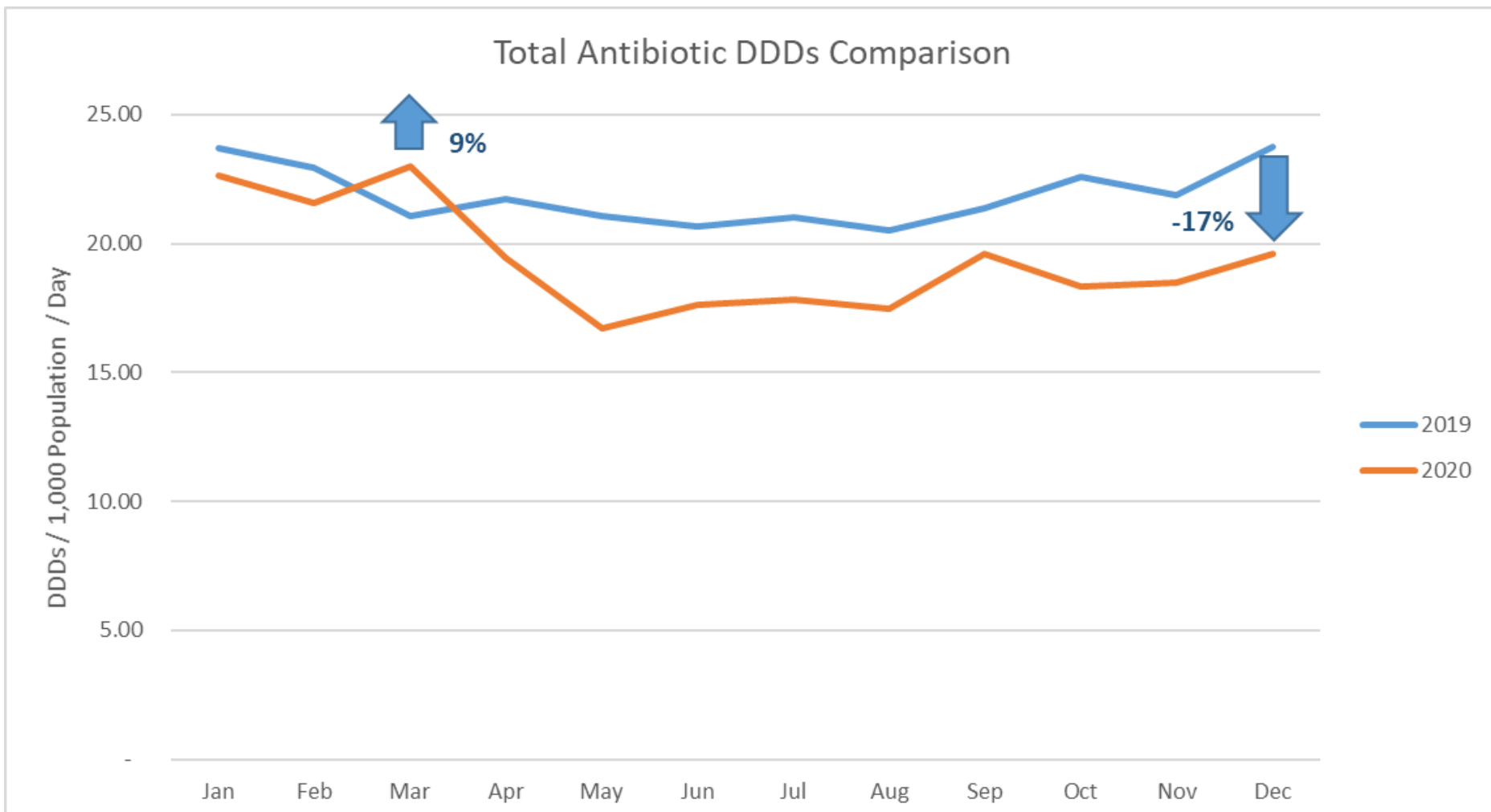
Total antibiotics

Key Outcome Measure

- Monthly antibiotic DDD/1000 patients/day in 2020 compared with 2019

Results:

Total antibiotic use in humans



Acknowledgements

Thanks to Polly Russell