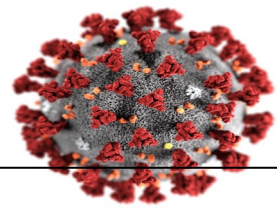


# An audit looking at acute respiratory antibiotic prescribing in COPD patients during the COVID-19 pandemic.

Miss Gabrielle Widdows, Dr Jessica Thompson and Mr Minesh Parbat  
In association with Keele University and North Solihull Primary Care Network (PCN)



## Background

- People with chronic obstructive pulmonary disease (COPD) are more at risk of becoming seriously ill from COVID (NHS, 2020).
- Some people who contract COVID may also develop a secondary infection, this was found to occur in approximately 7% of COVID patients. (Langford et al, 2020; Lansbury et al, 2020)
- Early studies published in 2020 found antibiotics were being prescribed to a much higher proportion of patients. (Seaton et al, 2020; Langford et al, 2020).
- Antibiotic resistance is an ongoing problem across the world, and it is thought that the pandemic will exacerbate the problem (Ventola, 2015).
- The NICE published guidance in April 2020 outlining that antibiotics should not be prescribed for COVID symptoms, viral pneumonia caused by COVID or for the prophylaxis of severe disease caused by COVID (NICE, 2020)

## Aims and Objectives

**Aim:** to provide an insight into the prescribing of antibiotics in patients with COPD during the COVID-19 pandemic within North Solihull.

### Objectives:

- Determine the adherence of antibiotic prescribing across Solihull PCN against national and local guidelines.
- Compare if the overall prescribing rates changed during the Covid-19 pandemic.
- Identify any differences in antibiotic prescribing relating to patient demographics across Solihull

## Key findings

- In 75.3% of cases the correct individual antibiotic was prescribed.
- Amoxicillin was prescribed at the correct dose and frequency 100% of the time, doxycycline 89.2% of the time and clarithromycin at 95.5% of the time.
- The correct duration of 5 days was prescribed in only 32.4% of cases.
- No correlation was found between any of the demographical factors examined and each of the criterions.
- The difference in the number of antibiotics prescribed in March-June 2020 and March-June 2019 was not statistically significant ( $P=0.6449$ ).

## Methods

12 surgeries located within the North Solihull PCN were included in the audit. The following pieces of data were extracted for each surgery:

- Total number of patients registered to the practice
- Total number of patients that had COPD at the practice
- Total number of antibiotics prescribed to people with COPD between March-June 2019 and 2020

For each antibiotic prescribed to a patient with COPD the following data was collected:

- Antibiotic name, dose, quantity
- Indication for the antibiotic

The percentage ethnic make-up, life expectancy and unemployment rates were extracted from local area health profiles for each surgery and plotted against each criteria.

The audit criteria outlined below was agreed with the PCN before the audit was conducted.

Criteria	Standard	Adherence
COPD patients should not be started on prophylactic antibiotics to reduce risk from COVID-19.	100%	100%
COPD patients should not be prescribed antibiotics for COVID-19 symptoms, such as a fever, dry cough or myalgia alone.	100%	99.4%
COPD patients experiencing an exacerbation should be prescribed one of the following oral antibiotics as first-line treatment: amoxicillin 500mg three times a day for 5 days, doxycycline 200mg stat then 100mg once daily for 5 days or clarithromycin 500mg twice daily for 5 days.	90%	28.7%

## Discussion

### Recommendations for future practice

- 1) Practitioners should review the current guidance published by NICE. This includes NG115, NG165, NG15, NG168 and NG114.
- 2) The findings of this audit should be disseminated across the North Solihull PCN.
- 3) Practitioners should be reminded of the importance of antibiotic duration as well as the correct individual medicine and dose.
- 4) Practitioners should be reminded of the importance of inputting indications.
- 5) The findings of this audit could also be disseminated to other PCNs within England.

### Limitations

- It looks at one area in England, so it is difficult to generalise these results to other areas.
- There was a lack of indications listed which made analysis difficult.
- Demographical data was collected from local area health profiles instead of individual patients.

## Conclusions

- The COVID-19 pandemic did not increase the prescribing of antibiotics in patients with COPD.
- Demographical factors did not affect the likelihood of someone being prescribed an antibiotic.
- Prophylactic Antibiotics were not used and antibiotics for COVID symptoms was very rare.
- Adherence to NICE guidance 168 and 114 and the local formulary was not followed; antibiotic duration was the main reason for non-adherence.

## References

1. Langford, B., So, M., Raybardhan, S., Leung, V., Westwood, D., MacFadden, D., Soucy, J. and Daneman, N., 2020. Bacterial co-infection and secondary infection in patients with COVID-19: a living rapid review and meta-analysis. *Clinical Microbiology and Infection*.
2. Lansbury, L., Lim, B., Baskaran, V. and Lim, W., 2020. Co-infections in people with COVID-19: a systematic review and meta-analysis. *Journal of Infection*, 81(2), pp.266-275.
3. Nhs.uk. 2020. *Who's At Higher Risk From Coronavirus (COVID-19)*. [online] Available at: <<https://www.nhs.uk/conditions/coronavirus-covid-19/people-at-higher-risk/whos-at-higher-risk-from-coronavirus/>> [Accessed 25 October 2020].
4. Seaton, R., Gibbons, C., Cooper, L., Malcolm, W., McKinney, R., Dundas, S., Griffith, D., Jeffreys, D., Hamilton, K., Choo-Kang, B., Brittain, S., Guthrie, D. and Sneddon, J., 2020. Survey of antibiotic and antifungal prescribing in patients with suspected and confirmed COVID-19 in Scottish hospitals. *Journal of Infection*.
5. Ventola, C. L., 2015. The antibiotic resistance crisis: part 1: causes and threats. *P & T: a peer-reviewed journal for formulary management*, 40(4), pp.277-283.
6. National Institute of Health and Care Excellence. 2020. *Overview | COVID-19 Rapid Guideline: Antibiotics For Pneumonia In Adults In Hospital | Guidance | NICE*. [online] Available at: <<https://www.nice.org.uk/guidance/ng173>> [Accessed 27 November 2020].
7. National Institute of Health and Care Excellence. 2020. *Overview | COVID-19 Rapid Guideline: Community-Based Care Of Patients With Chronic Obstructive Pulmonary Disease (COPD) | Guidance | NICE*. [online] Available at: <<https://www.nice.org.uk/guidance/ng168>> [Accessed 27 November 2020].