

# Health and Social Care Committee briefing, 7 October 2021

Professor Gwyneth Davies, Professor of Respiratory Medicine & Respiratory Consultant  
Population Data Science, Swansea University Medical School.

## Background

### **Lockdown was associated with the largest drop in COPD attacks and severe asthma attacks ever seen in Wales/Scotland/UK**

Early in the pandemic, asthma and COPD were identified as potential risk factors for hospital admission and death from COVID-19, and since the majority of exacerbations are associated with respiratory viral illnesses, it was expected that such exacerbations might increase.

However, our work has recently shown that lockdown was associated with the largest drop on severe asthma attacks ever recorded in the UK (1). There was a drop of 30% in asthma exacerbations resulting in emergency hospital admission in Wales and a 41% drop in Scotland (Figure 1), compared with national averages from the last 5 years (pooled reduction 36%, incidence rate ratio, IRR: 0.64, 95% CI: 0.49 to 0.83, p value 0.001). Reassuringly there was no significant change in asthma deaths. In Wales, a large spike in GP prescriptions for inhaled and oral steroids was seen in the week leading up to the first national lockdown (March 23 2020), suggesting that improved self-management may provide one explanation for the reduction in asthma attacks (spikes of 120% and 130% prescriptions for inhaled and oral steroids). In England, Shah and colleagues report a significant drop in severe exacerbations managed in primary care with oral steroids following lockdown (2).

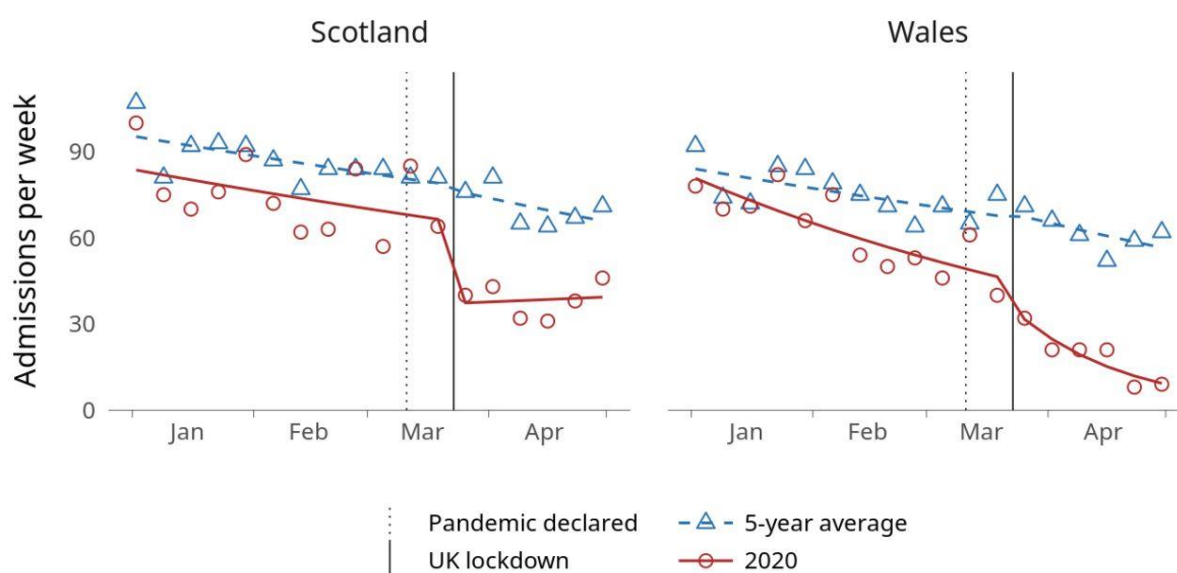


Figure 1: Weekly count of emergency asthma admissions in Scotland and Wales in 2020 and 5-year average (points) in addition to modelled trend lines.

We also showed that lockdown was associated with the largest drop in COPD attacks ever seen across Wales and Scotland (3). We found a 39% reduction in GP consultations and a 48% reduction in hospital admissions for COPD following the introduction of the first national lockdown (Figure 2). Reassuringly, we also found no evidence that deaths due to COPD have increased during lockdown.

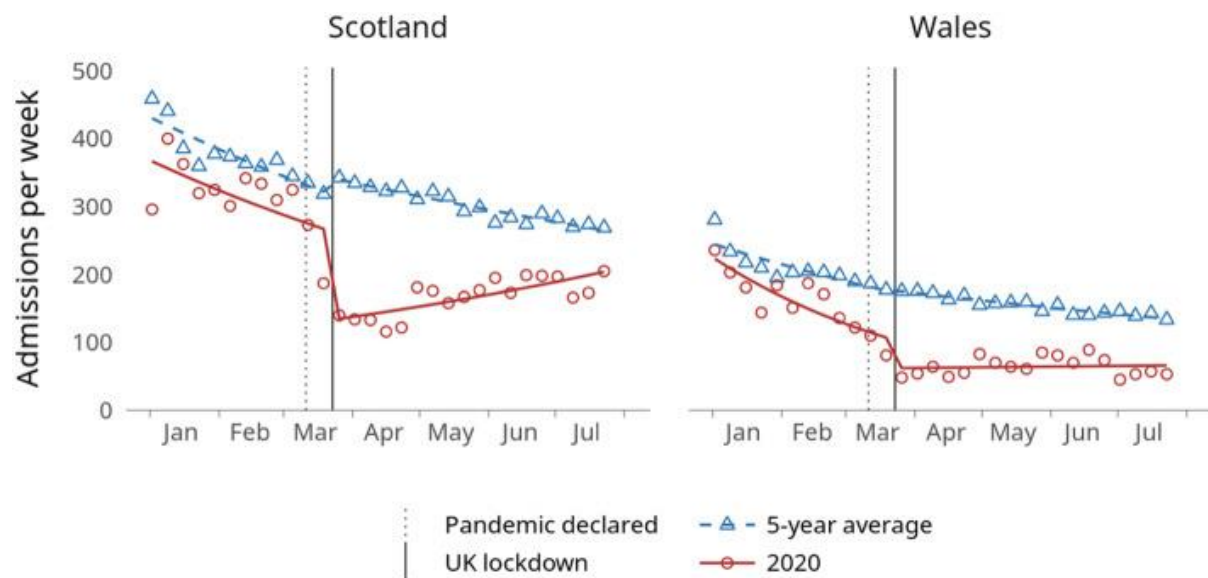


Figure 2: Weekly count of emergency COPD admissions in Scotland and Wales in 2020 and the corresponding 5-year averages (2015–2019, points) in addition to modelled trend lines.

Our research team at Swansea University Medical School worked in partnership with researchers at the University of Edinburgh’s Usher Institute to access data from the SAIL databank and Public Health Scotland. We performed interrupted time series analyses and compared weekly trends of events for the first 18 weeks of 2020 with the national averages over 2015–2019. We looked at a single change point at week 13 (when the first UK lockdown was announced on 23 March) to see how trends changed.

These are observational studies, and as such, can’t establish cause. However, there are several potential explanations for the substantial reduction in exacerbations seen in lockdown. These factors include changing behaviour due to lockdown measures leading to reduced circulation of respiratory viruses - the most common triggers for acute exacerbations of COPD and asthma - and reduced outdoor air pollution. Other factors include improved self-management and treatment adherence, driven by patient concerns during the pandemic and shielding by a subset of patients. Avoidance of healthcare settings due to fear of COVID-19 is likely to have played a part but it is reassuring to note that there was no increase in asthma or COPD deaths that would be feared if those with severe attacks were avoiding seeking the urgent treatment they needed. A study in South Korea – where there was thorough social distancing, personal hygiene, and universal use of face masks – showed a significant decrease in hospital admissions for influenza, pneumonia, COPD, and asthma as an unintended benefit of these measures (4).

These findings have far-reaching implications because a reduction in COPD and asthma-related admissions increases healthcare capacity and resources to treat people with COVID-19. Further investigation based on these results could also support the drive to reduce pollution levels. Beyond the pandemic, it is hoped that the findings will support an improved public health message to facilitate effective self-management of asthma and COPD and to reduce the transmission of respiratory infections through better hygiene and other precautionary measures.

The key question now is how can we harness any positives on reduced viral transmission and better self-management?

### **Key Priorities**

Here I outline key priorities based on my roles as a Respiratory Consultant directly involved in COVID-19 care, and on my academic research.

Need to address the following immediate challenges:

1. Covid, flu & RSV cases will all rise. Predicted higher rate of flu cases (lower immunity, less data for optimal flu vaccine) and a huge increase in RSV. There will be insufficient hospital beds for adequate segregation and infection control of these infections. Therefore, hospital acquired infection will rise.
2. Significant staff gaps (due to self-isolation) will jeopardise the delivery of safe care.
3. Care homes are shutting doors so hospital patients cannot be discharged to care homes.

### **Immediate Autumn/Winter Health & Social Care priorities**

1. **Reduce respiratory hospitalisations** – prioritise flu vaccination and COVID booster programmes; see also Winter plan (in preparation, Respiratory Health Implementation Group, RHIG) re implementation of existing pathways (COPD exacerbations, intravenous antibiotics in community), widespread adoption of POCT for COVID/Flu and CRP in primary care to help determine care pathways and appropriate referrals.
2. Injection of resource to **prioritise adequate bed numbers and staffing.**
3. **Coherent social care strategy** to ensure flow of patients from hospital to care homes/supported care, following clear criteria on COVID negative status.
4. Use the current all Wales digital platform to introduce the new winter specific digital interventions which can be actively disseminated across all Health Boards.

## Medium to longer term priorities

1. Harnessing any positive effects seen in lockdown, on reduced transmission of viruses and improved self-management
2. Public health messaging to **reduce viral transmission long-term** in vulnerable groups (targeted messaging, avoidance of high-risk environments, improved infection control measures, avoid patient mixing, masks)
3. **Improved self-management** – public messaging (role for Asthma UK BLF), **self-management apps** in asthma & COPD (already implemented) linked to national platform and develop personalised management via apps, care component delivered via app (e.g., annual review)
4. **Diagnostic hubs** – right patients on right treatment, stop unnecessary inhaler treatment (potentially saving up to £20 million), lung function testing unlikely to resume in primary care for foreseeable future
5. Long COVID – self-management apps, rehab programmes, future emerging treatments,
6. **Data gaps** – need disaggregated data by deprivation index in particular. The pandemic is likely to have far-reaching effect in widening existing disparities e.g., large inequalities in asthma care & outcomes (5). We need to address specific impacts on health and care of most **deprived groups**. Also, data gaps on outcomes in long COVID (particularly non-hospitalised).

## References

1. Davies GA , Alsallakh MA , Sivakumaran S , et al . [Impact of COVID-19 lockdown](#) on emergency asthma admissions and deaths: national interrupted time series analyses for Scotland and Wales. *Thorax* 2021;76:865–71.doi:10.1136/thoraxjnl-2020-216380
2. Shah SA , Quint JK , Nwaru BI , et al . [Impact of COVID-19 national lockdown](#) on asthma exacerbations: interrupted time-series analysis of English primary care data. *Thorax* 2021;76:858–64.doi:10.1136/thoraxjnl-2020-216512
3. Alsallakh M, Sivakumaran S, Kennedy S, Vasileiou E, Lyons RA, Robertson C, Sheikh A, Davies GA. [Impact of COVID-19 lockdown on the incidence](#) and mortality of acute exacerbations of chronic obstructive pulmonary disease: national interrupted time series analyses for Scotland and Wales. (accepted *BMC Medicine*, May 2021)
4. Huh K , Kim Y-E , Ji W , et al . [Decrease in hospital admissions](#) for respiratory diseases during the COVID-19 pandemic: a nationwide claims study. *Thorax* 2021;76:939–41.doi:10.1136/thoraxjnl-2020-216526
5. Alsallakh MA, Rodgers SE, Lyons RA, Sheikh A, Davies GA. [Association of socioeconomic deprivation](#) with asthma care, outcomes, and deaths in Wales: A 5-year national linked primary and secondary care cohort study. *PLoS Med.* 2021 Feb 12;18(2):e1003497. doi: 10.1371/journal.pmed.1003497