P23: Change in Healthcare Utilisation and Inpatient Mortality in Patients Hospitalised with Heart Failure during the Coronavirus Pandemic in England: A Retrospective Cross-Sectional Study Utilising HES

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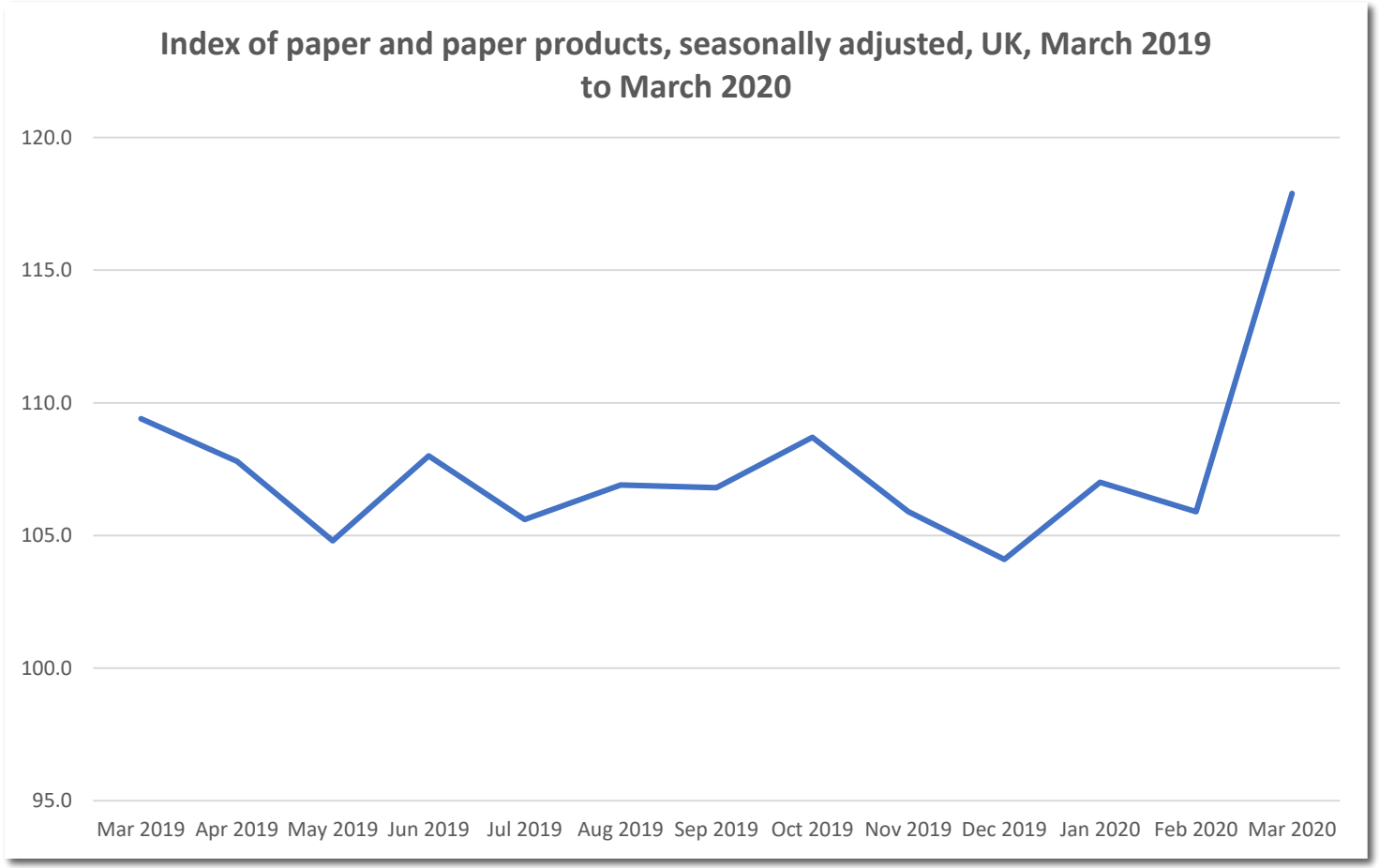
COVID-19 Pandemic Toilet paper sales on a roll…



Office for national statistics (2020) Coronavirus and the impact on output in the UK economy: March 2020 Available at: https://www.ons.gov.uk/economy/grossdomesticproductgdp/articles/coronavirusandtheimpactonoutputintheukeconomy/march2020 (Accessed 28.10.2021)

The Guardian (2020) eBay urged to clamp down on coronavirus profiteering Available at https://www.theguardian.com/uk-news/2020/mar/16/ebay-urged-to-clamp-down-on-coronavirus-profiteering (Accessed 28.20.2021)

The Zombie Church (2020) Happy Tuesday Flockers! Face with tears of joy #coronavirus #ToiletPaperPanic #ToiletPaperApocalypse Available at: https://twitter.com/Thezombiechurch/status/1237352695641628678/photo/1 (Accessed 28.10.2021)

INTRODUCTION

- The world is currently in the grip of a global pandemic caused by the COVID-19 Virus.
- The direct health impact of COVID-19 has been pronounced. As of 18th June 2021, COVID-19 was attributed to 153,767 deaths in the UK.[1]
- National lockdowns were effective at reducing the direct impact of the COVID-19.
- However, barriers to accessing healthcare for conditions other than COVID-19 were introduced.
- A scoping review of emerging literature identified no literature on the national impact on acute heart failure healthcare utilisation across all three national lockdowns.

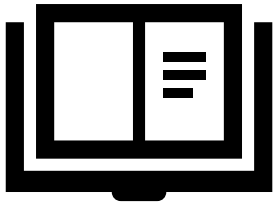
1 UK Government (2021) Deaths in United Kingdom Available at: https://coronavirus.data.gov.uk/details/deaths (Accessed 5 July 2021)C

OBJECTIVES

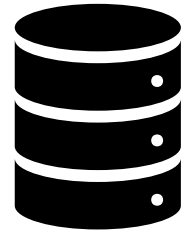
To identify and quantify whether COVID-19 has impacted admissions, bed day utilisation, and inpatient deaths for patients admitted to English hospitals for heart failure.

- Primary Endpoint
- H0: There has been no change in admissions for heart failure to English hospitals in 1/3/2020 28/2/2021 Vs 1/3/2019 - 29/2/2020.
- Secondary Endpoints
- H0: There has been no change in total bed days for heart failure admissions to English hospitals in 1/3/2020 - 28/2/2021 Vs 1/3/2019 - 29/2/2020.
- H0: There has been no change in heart failure inpatient deaths in English hospitals in 1/3/2020 - 28/2/2021 Vs 1/3/2019 - 29/2/2020.

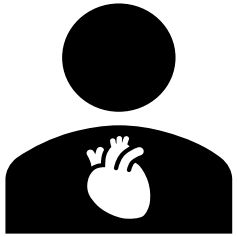
METHODS



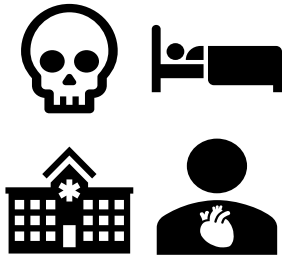
A scoping review was performed to inform the methodology of and contextualise the findings of the research.



A retrospective cross-sectional study using the Hospital Episode Statistics (HES) database was performed.



All adults admitted to an English hospital with a primary diagnosis of heart failure consistent with the national discharge audit (NICOR 2021) in the observational period were included.

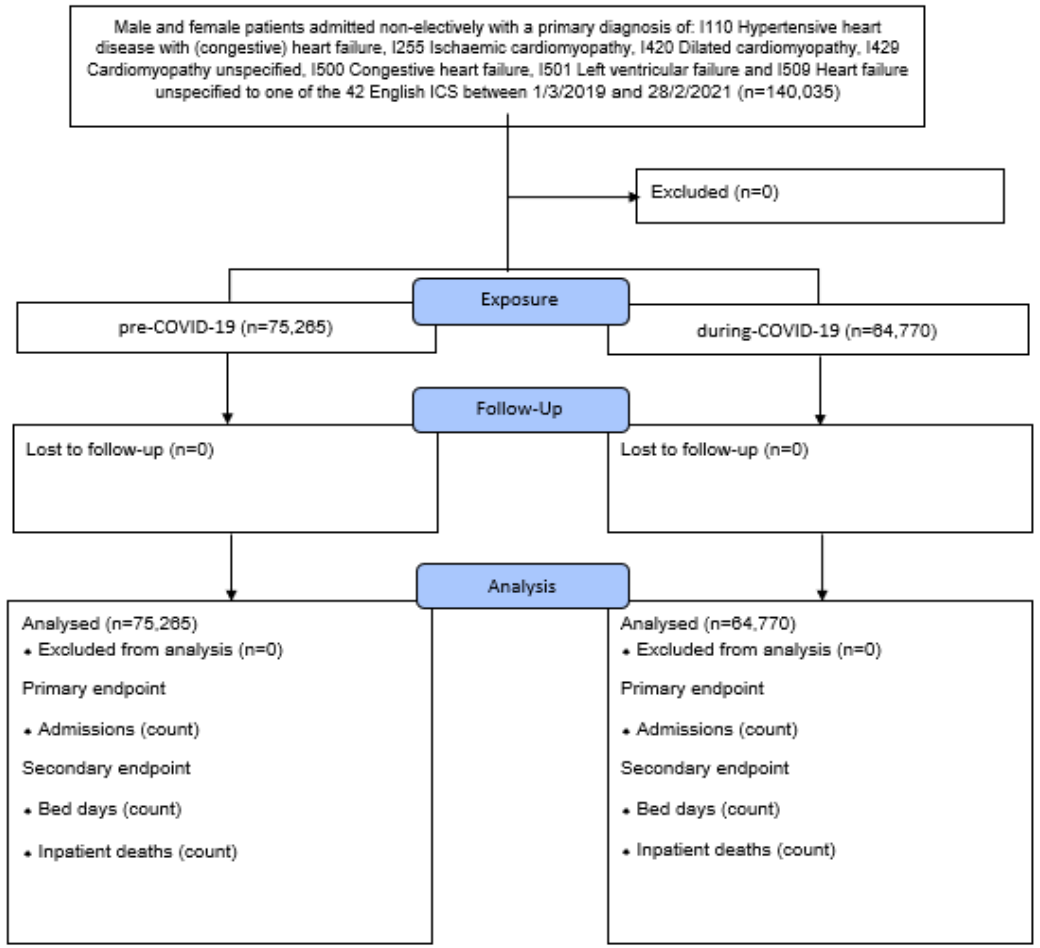


The admission count, bed days count and inpatient deaths of patients admitted in the pre-COVID-19 period were compared with those in the during-COVID-19 period**.
The difference in event count with a P-value of ≤0.05 was used to test significance.

* 1/3/2020 - 28/2/2021
** 1/3/2020 - 28/2/2021

RESULTS

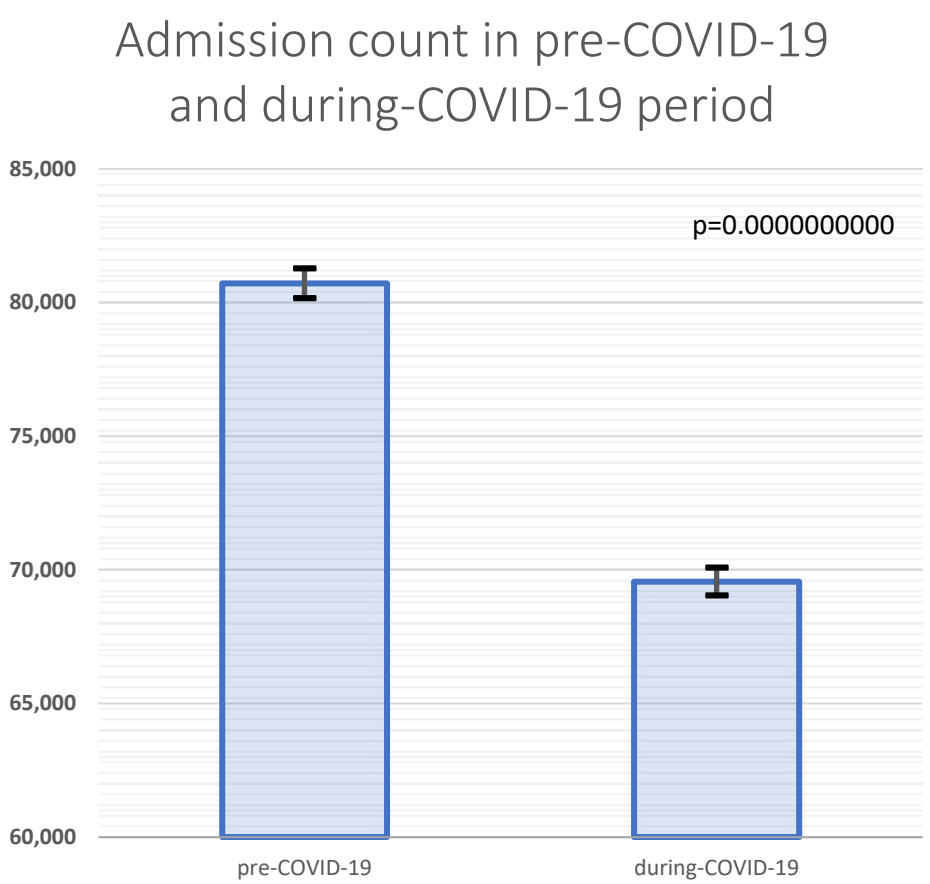
Adapted Consort flow diagram[1]



There were 140,035 patients with a heart failure admission between 1/3/2020 and 28/2/2021, 64,770 patients during the pandemic and 75,265 patients prior to the pandemic, all data were analysed.

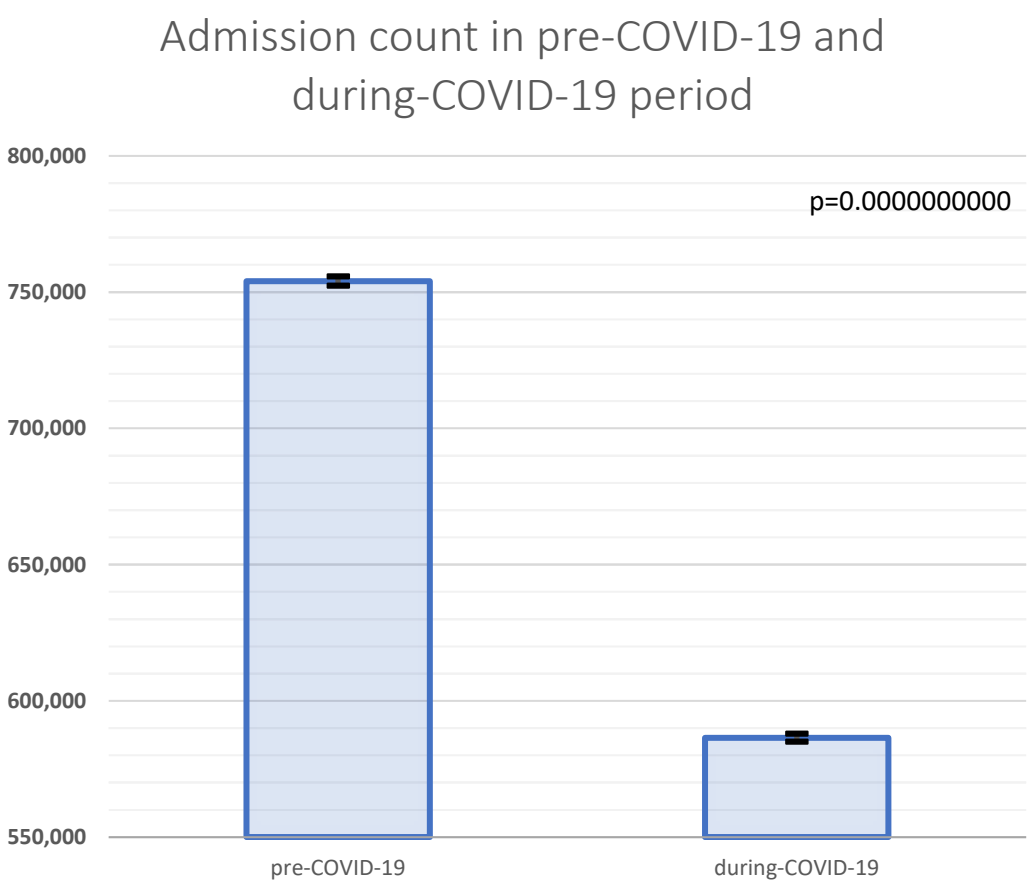
1 Schulz KF, Altman DG, Moher D, for the CONSORT Group. (2010) 'CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials.' *Journal of Clinical Epidemiology*, 63(8), pp. 834-40

RESULTS- Admissions



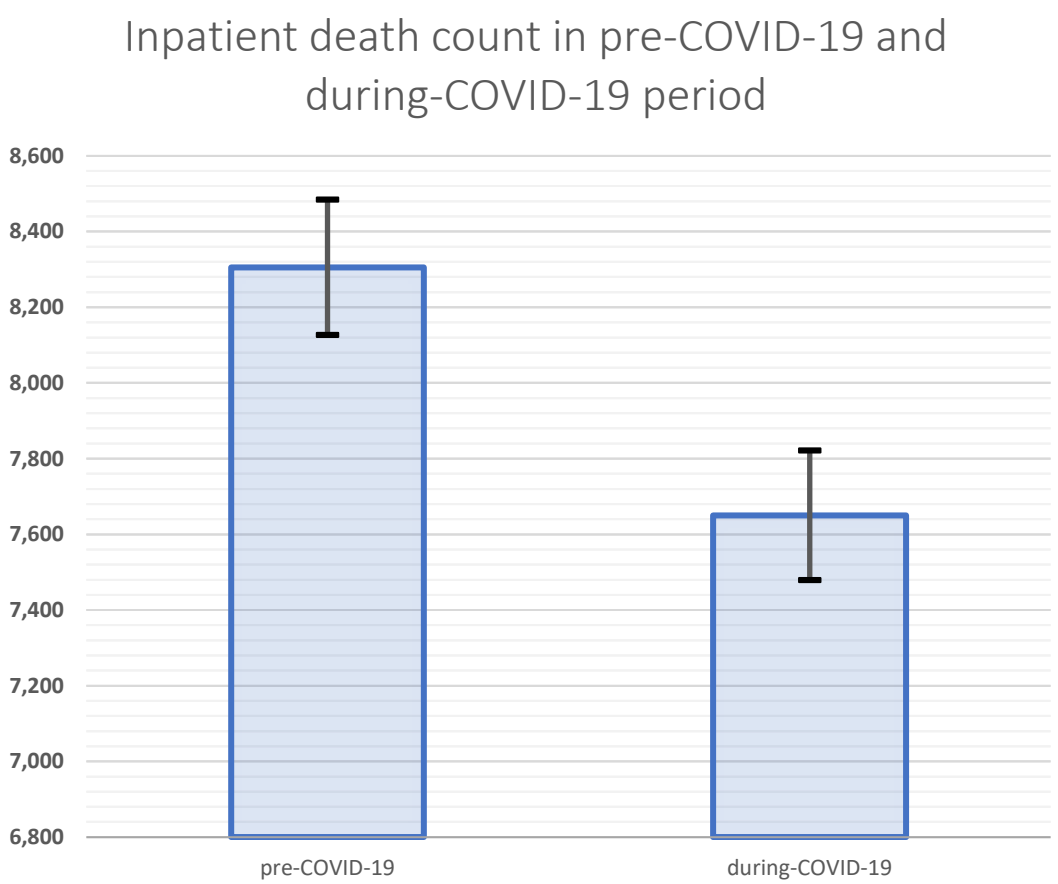
Nationally there was a 13.83% decrease in annual admissions for patients admitted for heart failure during the pandemic.

RESULTS- Length of stay



Nationally there was a 22.22% decrease in bed day utilisation for patients admitted for heart failure during the pandemic.

RESULTS- Inpatient Mortality



Nationally there was a 7.89% decrease in inpatients deaths for patients admitted with heart failure during the pandemic.

LIMITATIONS

- Like any observational data, potential for bias and confounding that limit causal inferences.
- This research was not able to explore the impact in out of hospital healthcare settings due to time and resource constraints so cannot comment on what other care may have changed (i.e. could primary care have done more?)
- The research also does not provide insight into the resultant morbidity caused by reduced activity for heart failure and conditions that may increase its incidence, such as myocardial infarction.
- Multiple hypotheses were tested in this research; however the observed P-values were extremely small and false positive (type 1 errors) are unlikely.
- The reason for observed changes is also not captured, and qualitative and quantitative research, particularly concerning the reasons for reduced admissions reductions in healthcare-seeking behaviour, is available,[1] [2] [3] but qualitative research is warranted.

1Mafham, M. M., Spata, E., Goldacre, R., Gair, D., Curnow, P., Bray, M., Hollings, S., Roebuck, C., Gale, C. P., Mamas, M. A., Deanfield, J. E., de Belder, M. A., Luescher, T. F., Denwood, T., Landray, M. J., Emberson, J. R., Collins, R., Morris, E., Casadei, B., & Baigent, C. (2020). 'COVID-19 pandemic and admission rates for and management of acute coronary syndromes in England'. Lancet (London, England), 396(10248), pp. 381–389.

2Bromage, D. I., Cannatà, A., Rind, I. A., Gregorio, C., Piper, S., Shah, A. M., & McDonagh, T. A. (2020). 'The impact of COVID-19 on heart failure hospitalization and management: report from a Heart Failure Unit in London during the peak of the pandemic'. European journal of heart failure, 22(6), pp. 978–984.

3Gittins, M., Ashton, C., Holden, N., Cross, S., Meadipudi, S., Kawafi, K., Burger, I., Rickard, S., Vail, A., Molloy, J., & Smith, C. J. (2020). 'Environmental Factors and Hyperacute Stroke Care Activity During the COVID-19 Pandemic: An Interrupted Time-Series Analysis'. Journal of stroke and cerebrovascular diseases: the official journal of National Stroke Association, 29(11), pp. 105229.

CONCLUSIONS

Nationally in the **UK** there were **significantly fewer admissions, bed days and inpatient deaths** for patients admitted with **heart failure** during the coronavirus **pandemic**.

A concern for the future?

- **The reduction in healthcare utilisation may reflect unmet health needs that can result in latent and excess morbidity and mortality that will require additional healthcare utilisation in the future, and further research is indicated to study this.**
- **Further research is required to describe the change in out of hospital healthcare utilisation, deaths in other settings and the potential excess and latent morbidity and mortality that may result from reduced access to hospital services.**