Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

See Online for appendix

should be endorsed. If this is not feasible, then we propose that future community vaccination programmes support and promote vaccines that can be used by the high-risk cohort of patients with IBD.

MJB has received grants and travel expenses from Vifor International and Tillotts Pharma, outside of the submitted work. All other authors report no competing interests.

*Aditi Kumar, Mohammed Nabil Quraishi, Jonathan P Segal, Tim Raine, Matthew J Brookes
aditikumar@nhs.net

Royal Wolverhampton Trust, New Cross Hospital, Wolverhampton WV10 0QP, UK (AK, MJB); Faculty of Science and Engineering, University of Wolverhampton, Wolverhampton, UK (AK, MJB); University of Birmingham Microbiome Treatment Centre, University of Birmingham, Birmingham, UK (MNQ); Department of Gastroenterology, Queen Elizabeth Hospital Birmingham, University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK (MNQ); Department of Gastroenterology and Hepatology, St Mary's Hospital London, London, UK (JPS); and Department of Gastroenterology, Cambridge University Hospitals, Cambridge, UK (TR)

Published Online September 17, 2020 https://doi.org/10.1016/S2468-1253(20)30305-8

1 Fiorino G, Peyrin-Biroulet L, Naccarato P, et al. Effects of immunosuppression on immune response to pneumococcal vaccine in inflammatory bowel disease: a prospective study. *Inflamm Bowel Dis* 2012; **18:** 1042–47.
2 Surveillance Epidemiology of Coronavirus (COVID-19) Under Research Exclusion. Coronavirus and IBD reporting database: current data. https://covidibd.org/current-data/ (accessed Aug 24, 2020).
3 Pan D, Sze S, Minhas JS, et al. The impact of ethnicity on clinical outcomes in COVID-19: a systematic review. *EClinicalMedicine* 2020; **23:** 100404.
4 Folegatti PM, Ewer KJ, Aley PK, et al. Safety and immunogenicity of the ChAdOx1 nCoV-19 vaccine against SARS-CoV-2: a preliminary report of a phase 1/2, single-blind, randomised controlled trial. *Lancet* 2020; **396:** 467–78.
5 Melmed GY, Ippoliti AF, Papadakis KA, et al. Patients with inflammatory bowel disease are at risk for vaccine-preventable illnesses. *Am J Gastroenterol* 2006; **101:** 1834–40.
6 Rahier JF, Magro F, Abreu C, et al. Second European evidence-based consensus on the prevention, diagnosis and management of opportunistic infections in infalmmatory bowel disease. *J Crohns Colitis* 2014; **8:** 443–68.
7 Huth K, Benchimol EI, Aglipay M, Mack DR. Strategies to improve influenza vaccination in pediatric inflammatory bowel disease through education and access. *Inflamm Bowel Dis* 2015; **21:** 1761–68.
8 Apte M, Reich J, Farraye FA. Vaccinations for patients with inflammatory bowel disease: an updated review. *Pract Gastroenterol* 2018; **XLII:** 64–74.
9 Stoffel NU, Uyoga MA, Mutuku F, et al. Iron deficiency anemia at time of vaccination predicts decreased vaccine response and iron supplementation at time of vaccination increases humoral vaccine response: a birth cohort study and a randomized trial follow-up study in Kenyan infants. *Front Immunol* 2020; **11:** 1313.
10 Zhang C, Zhou D. Adenoviral vector-based strategies against infectious disease and cancer. *Hum Vaccin Immunother* 2016; **12:** 2064–74.

Effect of the COVID-19 pandemic on viral hepatitis services in sub-Saharan Africa

The global response to limit the spread of COVID-19 has diverted attention and resources from existing local health priorities, particularly in countries of low and middle income (LMICs).[1] As highlighted in a Comment in *The Lancet Gastroenterology & Hepatology* by Neil Gupta and colleagues,[2] the collateral damage on efforts to address the viral hepatitis epidemic in sub-Saharan Africa is of high concern. However, the potential effect of COVID-19 on viral hepatitis services has been poorly documented.[2]

We have recorded a striking decrease in use of outpatient services by patients with chronic hepatitis in three countries in sub-Saharan Africa. We retrospectively counted the number of new and known cases of chronic hepatitis B virus (HBV) or hepatitis C virus (HCV) infection seen at the main referral hospitals in Burkina Faso (Yalgado-Ouédraogo Hospital and Bodogodo Hospital, Ouagadoudou; and Souro-Sanou Hospital, Bobo-Dioulasso), Tanzania (Muhimbili National Hospital, Dar es-Salam), and The Gambia (Medical Research Council Clinical Services, Fajara) from Jan 1 to April 30, 2020, a period covering the time before and during the COVID-19 pandemic. We also asked a doctor in charge of hepatitis services at each centre about the type of clinical and laboratory services that were disrupted, and plausible reasons for such disruption, using a standardised questionnaire (appendix pp 1–3).

The number of patients reviewed monthly at the hepatitis clinics fell substantially from January to April, 2020, by 71% in Burkina Faso, 95% in Tanzania, and 83% in The Gambia for new cases, and by 73% in Burkina Faso, 77% in Tanzania, and 89% in The Gambia for patients in follow-up (appendix p 4). To exclude any annual seasonal effects, we compared the number of viral hepatitis cases (new patients and patients in follow-up) in 2020 against those seen during the same period last year (Jan 1 to April 30, 2019) in The Gambia and found no significant fluctuation in cases (data not shown).

Across these countries, doctors consistently cited the patient's fear of contracting severe acute respiratory syndrome coronavirus 2 at clinics as a primary reason for the drop in patient numbers. The decrease in number of outpatient visits seems to have started in February, 2020, preceding confirmation of the first COVID-19 cases in these countries (from the second to third week of March, 2020) and implementation of public health measures limiting social contacts by the respective governments (in March and April, 2020). In Burkina Faso, the number of patients regularly monitored for chronic viral hepatitis steadily fell over this period, even though clinics were maintained and treating doctors encouraged patients to be retained in care. By contrast, in Tanzania and The Gambia, hepatitis clinics were temporarily closed at the end of March, 2020, to prepare for the COVID-19 epidemic, and staff at hepatitis services were relocated to support COVID-19 preparedness, to receive patients who were febrile with a suspicion of COVID-19, and to mitigate COVID-19 outbreaks. Of the essential diagnostic tests to manage chronic hepatitis, rapid tests for HBsAg, alanine aminotransferase, and haematology were available without any disruption throughout

this period in these countries. However, there was a severe shortage of nucleic acid tests for HBV DNA or HCV RNA. Moreover, in Burkina Faso, direct-acting antivirals for HCV were temporarily unavailable because of disrupted supply secondary to suspension of international flights. Nevertheless, during this period, none of the doctors surveyed witnessed a health-care system collapse attributable to overwhelming demand for COVID-19 care.

The disrupted use of viral hepatitis services in sub-Saharan Africa might have a long-term clinical effect: people newly identified as having HBsAg or anti-HCV antibody could have lost their opportunity to be linked to care, assessed for viral load, and eventually treated, and those who had been receiving antiviral therapy might have had their treatment interrupted. Moreover, in the three countries we investigated, the relative reduction in outpatient visits was substantial (>70%) when comparing the period just before the COVID-19 pandemic (January, 2020) with a period during the pandemic (April, 2020). This decline was far more pronounced than was the reduction in use of routine health-care services recorded during the 2014 Ebola outbreak in west Africa (mean reduction 18·0%, 95% CI 9·5–26·5).[3] An economic analysis showed that the indirect effect of the 2014 Ebola outbreak on deaths from non-Ebola causes was greater than its direct effect on Ebola-related deaths,[4] indicating the importance of maintaining routine health services in LMICs.

Efforts to address viral hepatitis in sub-Saharan Africa have been remarkable in recent years. The growing availability of simple point-of-care tests and antiviral therapies at low cost make elimination of viral hepatitis a realistic goal in LMICs, as set out in a *Lancet Gastroenterology & Hepatology* Commission.[5] Yet, these encouraging prospects also need to be balanced by the reminder that a large proportion of these viral hepatitis services are not supported by national programmes in most LMICs and, in the midst of further resource limitation, remain incredibly fragile. The COVID-19 pandemic vividly highlights this fragility and the urgent need for innovative and sustainable hepatitis programmes in sub-Saharan Africa. In the face of the COVID-19 pandemic, viral hepatitis services are at great risk of being neglected.

ML has received consultancy fees and research funding from Gilead. GN holds a Gilead public health award fellowship. YS and RS have received consultancy fees from Gilead. All other authors report no competing interests.

**Maud Lemoine, Jin Un Kim, Gibril Ndow, Sulayman Bah, Karen Forrest, John Rwegasha, Marielle Bouyou, Delphine Napon, Sosthene Somda, Appolinaire Sawadogo, Roger Sombie, Yusuke Shimakawa*
m.lemoine@imperial.ac.uk

Department of Metabolism, Digestion and Reproduction, Section of Hepatology and Gastroenterology, Imperial College London, St Mary's Hospital, London W2 1NY, UK (ML, JUK, GN); Medical Research Council Unit, The Gambia at London School of Hygiene and Tropical Medicine, Fajara, The Gambia (GN, SB, KF); Department of Hepatology and Gastroenterology, Muhimbili National Hospital, Dar es-Salaam, Tanzania (JR); Department of Parasitology, Mycology and Tropical Medicine, Université des Sciences de la Santé, Libreville, Gabon (MB); Département de Médicine, CHU Bodogodo, Ouagadougou, Burkina Faso (DN); Département d'Hépato-gastroentérologie, CHU Yalgado Ouédraogo, Ouagadougou, Burkina Faso (SS, RS); Département de Médicine, CHU Souro Sanou, Bobo-Dioulasso, Burkina Faso (AS); and Unité d'Épidémiologie des Maladies Émergentes, Institut Pasteur, Paris, France (YS)

1 Roberton T, Carter ED, Chou VB, et al. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. *Lancet Glob Health* 2020; **8:** e901–08.

2 Gupta N, Desalegn H, Ocama P, et al. Converging pandemics: implications of COVID-19 for the viral hepatitis response in sub-Saharan Africa. *Lancet Gastroenterol Hepatol* 2020; **5:** 634–36.

3 Wilhelm JA, Helleringer S. Utilization of non-Ebola health care services during Ebola outbreaks: a systematic review and meta-analysis. *J Glob Health* 2019; **9:** 010406.

4 Huber C, Finelli L, Stevens W. The economic and social burden of the 2014 Ebola outbreak in west Africa. *J Infect Dis* 2018; **218:** S698–704.

5 Cooke GS, Andrieux-Meyer I, Applegate TL, et al. Accelerating the elimination of viral hepatitis: a *Lancet Gastroenterology & Hepatology* Commission. *Lancet Gastroenterol Hepatol* 2019; **4:** 135–84.