

12/10/22

**Re: Manuscript revision - World Journal of Orthopedics Manuscript NO: 77602 - "Utilising the impact of covid-19 on trauma throughput to adapt elective care models for more efficient trauma care" (new title - previously entitled "Benefits of an elective mindset for trauma patients: learning from the impact of covid-19")**

Dear Editor,

Thank you for your comments and advice. We have now amended the manuscript as per your recommendations.

Individual points have been highlighted in the table below.

We hope you now find the manuscript suitable for publication.

Many thanks for reviewing our work.

Kind regards,  
Rohi Shah (on behalf of all authors)

#### Response to Reviewer 1

Comments	Response/Amendments
The authors present an observational study on the changes that a major orthopedics center underwent during the COVID-19 pandemic. The manuscript is well-written and easy to read, highlighting the major conclusions and aspects of patient management during the pandemic that the authors feel could be incorporated to the normal workflow of this center. The study spans almost the entire period of the pandemic, allowing for the comparison of different phases of virus circulation in the local population, as well as comparing these phases with the pre-pandemic period.	Thank you for your comments.
Some aspects need to be addressed by the authors: there are few references for the manuscript, and there is little information in the introduction on how other centers in the United Kingdom and other countries dealt with the COVID-19 pandemic. A paragraph briefly exposing articles published by other orthopedic centers on this subject could add context for the reader of the manuscript	The introduction has now been updated as per our recommendations. Additional references have been incorporated into the introduction, highlighted below.  ... With the NHS slow to effect change, these COVID-19 necessitated adaptations may serve the driver for landmark changes to the way healthcare is provided (2). Should these changes prove successful, they may yield more sustained differences to the way we deliver care in the future. Hospitals across the UK have implemented strategic changes, with shifting of resource management (3) and implementation of novel methods of practice (such as virtual consultations) (4, 5). This provided an ideal opportunity to drive much needed technological

	<p>upgrades into the healthcare ecosystem. The pandemic environment is full of opportunities to capitalise upon to improve the flexibility of care provision for the benefits of both patients, and providers, with an ultimate aim to create a long-term self-sustaining care model.</p> <p>References:</p> <p>3. Murphy T, Akehurst H, Mutimer J. Impact of the 2020 COVID-19 pandemic on the workload of the orthopaedic service in a busy UK district general hospital. <i>Injury</i>. 2020;51(10):2142-7.</p> <p>4. Madanipour S, Iranpour F, Goetz T, Khan S. COVID-19: lessons learnt and priorities in trauma and orthopaedic surgery. <i>Ann R Coll Surg Engl</i>. 2021;103(6):390-4.</p> <p>5. Gibbons JP, Forman S, Keogh P, Curtin P, Kiely R, O'Leary G, et al. Crisis change management during COVID-19 in the elective orthopaedic hospital: Easing the trauma burden of acute hospitals. <i>Surgeon</i>. 2021;19(3):e59-e66.</p>
The discussion and conclusion sections are very interesting, as the authors were able to explore the results in a meaningful way to propose permanent improvements in healthcare organization.	Thank you for your comments.
Another issue that should be mentioned is whether the authorization of an institutional review board or ethics committee was obtained for this study.	<p>The following statement has been added to the manuscript: "This study was formally registered and approved by the University Hospitals of Leicester Clinical Audit and Quality Improvement Team".</p> <p>No ethical approval was required in view of this being a service evaluation project (this has been stated in the disclosures at the end of the manuscript)</p>

## Response to Reviewer 2

Comments	Response/Amendments
The paper with the title: BENEFITS OF AN ELECTIVE MINDSET FOR TRAUMA PATIENTS: LEARNING FROM THE IMPACT OF COVID-19 has been viewed. I appreciate the study team's efforts in the paper, and I have several observations: - Work on modifying the title to reflect the study's goal. - Including an introductory section on the study at the start of the abstract.	<p>Thank you for your comments.</p> <p>The title has now been amended to:</p> <p>"Utilising the impact of COVID-19 on trauma throughput to adapt elective care models for more efficient trauma care"</p> <p>The abstract introduction has also been amended:</p> <p>COVID-19 has necessitated adaptations in local trauma services, with implementation of novel methods of practice, of strategic changes, and shifting of resource management. Many of these changes may serve the driver for landmark changes to future healthcare provision. By analysing the impact of COVID-19 on service provision, we</p>

	sought to compare throughput and productivity metrics with preceding years to identify differences in practice that were successful, cost-effective, and sustainable.
The results portion of the study abstract should emphasize only the most important findings of the investigation.	<p>Thank you for your comments.</p> <p>The results section has been reduced to include the pertinent findings only, with the remained in the main body of the manuscript. It now reads:</p> <p>1,704 cases were admitted in 2020, 11.9% and 12.4% fewer than 2019 and 2018, respectively. During Phase 1, hip fractures encompassed the majority (48.8%) of trauma throughput, with all other subspecialties seeing a reduction. Mean length of stay was shorter during Phase 1 (5.7days); however, the time in theatre was longer (144.3mins). Both, Charlson (0.90) and Elixhauser (1.55) Comorbidity Indices, indicated the most co-morbid admissions during 2020 Phase 1.</p>
Rewrite the paper's introduction better than it is presently, using more modern references and in a more concise manner, with making the last paragraph of the introduction relevant to highlighting the goal of the study.	<p>Thank you for your comments</p> <p>The references have been updated (in line with Reviewer 1) to highlight practice in different hospitals in the UK.</p> <p>The introduction has now been updated as per our recommendations. Additional references have been incorporated into the introduction, highlighted below.</p> <p>... With the NHS slow to effect change, these COVID-19 necessitated adaptations may serve the driver for landmark changes to the way healthcare is provided (2). Should these changes prove successful, they may yield more sustained differences to the way we deliver care in the future. Hospitals across the UK have implemented strategic changes, with shifting of resource management (3) and implementation of novel methods of practice (such as virtual consultations) (4, 5). This provided an ideal opportunity to drive much needed technological upgrades into the healthcare ecosystem. The pandemic environment is full of opportunities to capitalise upon to improve the flexibility of care provision for the benefits of both patients, and providers, with an ultimate aim to create a long-term self-sustaining care model.</p> <p>References:</p> <p>3. Murphy T, Akehurst H, Mutimer J. Impact of the 2020 COVID-19 pandemic on the workload of the orthopaedic service in a busy UK district general hospital. <i>Injury</i>. 2020;51(10):2142-7.</p> <p>4. Madanipour S, Iranpour F, Goetz T, Khan S. COVID-19: lessons learnt and priorities in trauma and orthopaedic surgery. <i>Ann R Coll Surg Engl</i>. 2021;103(6):390-4.</p> <p>5. Gibbons JP, Forman S, Keogh P, Curtin P, Kiely R, O'Leary G, et al. Crisis change management during COVID-</p>

	<p>19 in the elective orthopaedic hospital: Easing the trauma burden of acute hospitals. Surgeon. 2021;19(3):e59-e66.</p> <p>We have highlighted the goal of the study in the last paragraph and adjusted it to highlight the pertinent points:</p> <p>With this in mind, we sought to gain an in-depth view of the impact of COVID-19 on our local trauma service provision, by comparing our trauma throughput and other key productivity metrics with the preceding years to identify any key differences and adaptations that had occurred within the department to sustain clinical practice. By evaluating changes to practices implemented due to COVID-19 at our trauma unit, our goal was to evaluate those changes that were successful, cost-effective, easily adapted by clinicians, and deemed sustainable for the future, with a view to sharing our learnings more widely.</p>
<p>Please refrain from displaying any outcomes in the material and methods section. - As far as possible, avoid writing in points in the results and discussion sections.</p>	<p>Noted; we have checked and confirm that no outcomes are stated in materials or methods.</p>
<p>I'd like you to modify the study conclusion such that it demonstrates whether or not the study's purpose was met.</p>	<p>Thank you for your comments</p> <p>The conclusion has now been amended to read:</p> <p>The impact of the COVID-19 pandemic on healthcare systems globally cannot be underestimated. As the growing body of evidence and best-practice advice during the pandemic evolves, clinical practices will undoubtedly need to adapt accordingly. Our study allowed us to evaluate, analyse, and compare local trauma throughput variation during the pandemic, thus developing targeted interventions utilising an 'elective care model'. This culminated in a more streamlined trauma patient care pathway from admission to discharge. By incorporating these modifications to clinical practice into our 'new normal' of clinical practice, we hope to build on this opportunity from adversity to improve patient care going forward.</p>
<p>As much as feasible, update references.</p>	<p>All the references have been updated.</p>
<p>Has publishing approval been obtained for figures 2 and 6? In addition, their source(s)/reference(s) should be acknowledged by include a citation in the study.</p>	<p>Both Fig 2 and 6 have been exclusively designed and created by the authors.</p> <p>Images for Figure 2 were obtained online using the standard licence agreement - acceptable for publication. This has been referenced for completeness. Icons in figure 6 were obtained using free-source websites. We have added an attribution line with an added refence for both images.</p>

<p>Some minor typographical and grammatical issues were discovered during the paper's review; please attempt to correct them. Best wishes,</p>	<p>The paper has been proofread and these errors have now been corrected, thank you!</p>
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**Response to Revision reviewer**

Comments	Response/Amendments
<p>Thanks for making all the needed adjustments.</p>	<p>Thank you for your comments.</p>