

Responses to Reviewers

Reviewer #1:

1. The article used data from the Healthcare Cost and Utilization Project (HCUP) public website, which covers over 97% of the U.S. population. Why were Clinical Modification (ICD-9-CM) and ICD-10-CM used?

The National Inpatient Sample, which is developed under the HCUP, uses international classification of diseases, ninth revision, clinical modification (ICD-9-CM) and international classification of diseases, tenth revision, clinical modification (ICD-10-CM) codes to identify relevant diagnoses, such as heart failure, cerebrovascular disease, and ischemic heart disease, as described in its website (<https://www.hcup-us.ahrq.gov/nisoverview.jsp>) and our methods section. ICD-9-CM codes were used until October 2015, when the new updated ICD-10-CM took over. Many previous studies used the same codes to perform trend analyses over the previous years and gain clinical insights (1-3).

Reviewer #2:

1. Kindly highlight the novelty of the proposed method.

To the best of our knowledge, our study was the first to examine the trend in the number of hospitalizations of people living with HIV using the largest inpatient database in the United States. We have highlighted this by including the following sentence to the beginning of 6th paragraph of the discussion: “To the best of authors’ knowledge, the present study was the first to use the largest inpatient database in the U.S. to examine the trend in the number of hospitalizations, stratified to cardiovascular causes, in people living with HIV.”

2. Sample of U.S. hospital admissions from 2008 to 2018 were used, 2019, 2020 and 2021 data need to be updated.

Thank you for this important suggestion. Unfortunately, however, National Inpatient Sample (NIS) is not available in the years 2020 to 2021 yet. We also do not have access to NIS 2019 since it has only been released very recently. We will keep your suggestion in mind and update our study in the future when data from more recent years become available.

3. Add few more references in 2021 and 2022 years.

We included a study by Delabays et al. (DOI: 10.1093/eurjpc/zwab201), published in the year 2022, in the first sentence of the discussion. Secondly, we included a study by McGettrick et al. (DOI: 10.1097/QCO.0000000000000802), published in the year 2022, in the second sentence of the discussion. Thirdly, we included a study by Poznyak et al. (DOI: 10.3390/ijms23052504), published in the year 2022, in the seventh sentence of the first paragraph of the discussion.

4. The burden of cardiovascular diseases has significantly increased in hospitalizations of PLWH from 2008 to 2018. Please increased up to 2022, why used only 2018?

Thank you for this important suggestion. Unfortunately, however, National Inpatient Sample (NIS) is not available in the years 2020 to 2021 yet. We also do not have access to NIS 2019 since it has only been released very recently. We will keep your suggestion in mind and update our study in the future when data from more recent years become available.

5. Trend of the outcomes from 2008 to 2018 were analyzed using Cochran-Armitage trend test and simple linear regression. How linear regression used?

Linear regression was used for continuous variables, namely the number of hospitalizations. We placed the number of hospitalizations as the dependent variable and the year as the independent variable. Afterwards, we created a line of best fit (simple linear regression) and examined if the increasing or decreasing trend was significant.

6. Kindly give algorithm for propose method.

We used the following model for simple linear regression: $y=a_0+a_1x+\epsilon$, where a_0 is the y-intercept, a_1 is the slope of the regression line, and ϵ is the error term. For our study, y was the number of hospitalizations and x was the year of data in National Inpatient Sample. Line of best fit was drawn using the least squares method, which essentially produces a line of points that minimizes the sum of offsets or residuals. Additional details are shown in https://www.lexjansen.com/wuss/2019/175_Final_Paper_PDF.pdf

7. Kindly compare with existing methods, how proposed method better with existing methods.

We have used Cochran-Armitage trend test for categorical variables and simple linear regression for continuous variables. These methods have been validated for trend analyses in previous studies (1, 4). We used these trend analyses methods for the purposes of simplicity, convenience, and easiness for understanding by readers.

8. Plz refer and cite DOI: 10.3844/jcssp.2020.50.55 DOI: 10.1109/ACCESS.2019.2923707

We cited Mohan et al (DOI: <https://doi.org/10.3844/jcssp.2020.50.55>) at the 3rd sentence of the materials and methods section. We also cited Mohan et al. (DOI: 10.1109/ACCESS.2019.2923707) at the 4th sentence of the discussion section.

Science Editor:

I agree with the comments of esteemed reviewer 1 and 2. Specially novelty of study, recent data inclusion and algorithm for data study should be added in the manuscript.

Thank you for taking the time to go over our paper.

To emphasize the novelty of our study, we have added the following statements to the beginning of the sixth paragraph in the discussion: “To the best of authors’ knowledge, the present study was the first to use the largest inpatient database in the U.S. to examine the trend in the number of hospitalizations, stratified to cardiovascular causes, in people living with HIV. In addition, trends in the in-hospital mortality, length of hospital stay, and total hospital charge were also uniquely examined.”

Unfortunately, we were not able to include data from very recent years as they are currently unavailable. It usually takes several years for the Healthcare Cost and Utilization Project to process data from all the hospitals and upload the national data online. Upon the beginning of our study, the National Inpatient Sample 2018 was the most recent dataset available to the public. Therefore, we performed a trend analysis from 2008 to 2018 to examine the trend of the most recent decade allowed by the database. We will perform updated studies in the future as data from more recent years become available.

Lastly, the algorithm for data study has been illustrated as a new “Figure 1” entitled, “Flow chart of this study” to visually explain the design of our study. The new figure has been called out in the second paragraph of the methods section.

References

1. Tripathi B, Kumar V, Pitiliya A, et al. Trends in Incidence and Outcomes of Pregnancy-Related Acute Myocardial Infarction (From a Nationwide Inpatient Sample Database). *Am J Cardiol.* 2019; 123:1220-1227.
2. Singh J, Dahiya DS, Kichloo A, et al. Hepatorenal syndrome: a Nationwide Trend Analysis from 2008 to 2018. *Annals of Medicine.* 2021; 53:2018-2024.
3. Anantha-Narayanan M, Doshi RP, Patel K, et al. Contemporary Trends in Hospital Admissions and Outcomes in Patients With Critical Limb Ischemia. *Circulation: Cardiovascular Quality and Outcomes.* 2021; 14:e007539.
4. Zimmerman KP, Oderich G, Pochettino A, et al. Improving mortality trends for hospitalization of aortic dissection in the National Inpatient Sample. *Journal of Vascular Surgery.* 2016; 64:606-615.e601.