PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Factors Associated with Inpatient Length of Stay among Hospitalized Patients with Chronic Obstructive Pulmonary Disease, China, 2016-2017: a retrospective study
AUTHORS	Dong, Fen; Huang, Ke; Ren, Xiaoxia; Qumu, Shiwei; Niu, Hongtao; Wang, Yanyan; Li, Yong; Lu, Minya; Lin, Xinshan; Yang, Ting; Jiao, Jianjun; Wang, Chen

VERSION 1 – REVIEW

REVIEWER	Jing Zhang Zhongshan Hospital of Fudan University, Shanghai, China
REVIEW RETURNED	08-Sep-2020

GENERAL COMMENTS	In general, this paper is easy to follow. The title and abstract cover the main content. This study provided clinical epidemiological data on LOS in COPD patients in developing countries, adding something knew into the current studies that were mainly restricted to developed countries. Moreover, the primary data analysis was based on a conceptual model using DAG, which is a graph in which unidirectional arrows are used to present known causal effects. The authors drew the DAG based on prior knowledge in published literatures. Thus, the findings were theoretical model driven and the assumptions about effects of exposures on LOS were transparent and explicit, which is recommended for observational studies by the American Thoracic Society. The findings also showed that longer hospitalization cost more, suggesting that COPD is a burdensome disease. Overall, this is a nice analysis. However, LOS is a complex issue and highly heterogeneous across diverse countries and health systems, which was admitted by the authors in the discussion. Anyway, this study enriches the studies on hospital stay in COPD patients. As this is a retrospective study and the analyzed data were sourced from medical records in daily clinic practice, the associations of potential factors with LOS might need to be validated in prospective studies in the future.

REVIEWER	Jose Bordon Washington Health Institute, www.dc-whi.org USA
REVIEW RETURNED	17-Sep-2020

GENERAL COMMENTS	Dr. Fen Dong et al. examined the factors associated with LOS among patients with COPD in a tertiary hospital in China by doing a retrospective study. Overall, this study brings up some interesting data in particular the trend of COPD outcome in China.

	The following are some comments to address improvement of this manuscript. 1. Clarity is critical for optimal communication and this manuscript use of redundancy makes not the most clear text and it goes against logical. Authors did great efforts to communicate their research approach however redundancy was a negative effect, e.g. the last paragraph of introduction should provide a clear indication of the study objective/s. This paragraph is far from acceptable. 2. Table 2. Characteristic "Married and local resident" shouldn't result in outcomes therefore married status and local residents shouldn't be pertinent to indicate in the table. If the authors believe that these two items are important factors in the characterization, they authors should educate the value of these two items in the characterization of the patients. 3. Pulmonary encephalopathy sounds not very clear, the authors are recommended to use the term "hypoxic-hypercarbic encephalopathy" 4. The conclusion is very expected. Comorbidities predicted the long LOS of COPD patients. However, there is/are not clear comments how to address the problem of long LOS of COPD patients due to comorbidities.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Jing Zhang
Institution and Country: Zhongshan Hospital of Fudan University, Shanghai, China
Competing interests: None declared.

Comments to the Author
In general, this paper is easy to follow. The title and abstract cover the main content. This study provided clinical epidemiological data on LOS in COPD patients in developing countries, adding something knew into the current studies that were mainly restricted to developed countries. Moreover, the primary data analysis was based on a conceptual model using DAG, which is a graph in which unidirectional arrows are used to present known causal effects. The authors drew the DAG based on prior knowledge in published literatures. Thus, the findings were theoretical model driven and the assumptions about effects of exposures on LOS were transparent and explicit, which is recommended for observational studies by the American Thoracic Society. The findings also showed that longer hospitalization cost more, suggesting that COPD is a burdensome disease. Overall, this is a nice analysis.

However, LOS is a complex issue and highly heterogeneous across diverse countries and health systems, which was admitted by the authors in the discussion. Anyway, this study enriches the studies on hospital stay in COPD patients. As this is a retrospective study and the analyzed data were sourced from medical records in daily clinic practice, the associations of potential factors with LOS might need to be validated in prospective studies in the future.
Response:
Thanks for your kindly comment. Given the inherent methodological limitation of retrospective study, there is a necessity to perform prospective studies to validate the factors associated with LOS. Our team are conducting some longitudinal studies on COPD inpatients, which might be used to validate our findings in the future.

Reviewer: 2
Reviewer Name: Jose Bordon
Institution and Country:
Washington Health Institute, www.dc-whi.org
USA
Please state any competing interests or state ‘None declared’: None

Comments to the Author
Dr. Fen Dong et al. examined the factors associated with LOS among patients with COPD in a tertiary hospital in China by doing a retrospective study.
Overall, this study brings up some interesting data in particular the trend of COPD outcome in China.

The following are some comments to address improvement of this manuscript.
1. Clarity is critical for optimal communication and this manuscript use of redundancy makes not the most clear text and it goes against logical. Authors did great efforts to communicate their research approach however redundancy was a negative effect, e.g. the last paragraph of introduction should provide a clear indication of the study objective/s. This paragraph is far from acceptable.
Response:
Sorry for the unclear information due to redundancy in the last paragraph of introduction. We have removed the redundant content to make it clearer and succinct. At meantime, we have checked through the whole paper and removed redundancy in other sections to make the paper as clear as possible. Please see the highlighted in red in the last paragraph of Introduction and other sections.

The last paragraph of introduction: Thus, we conducted a retrospective longitudinal study to analyze factors associated with hospital stay. Study population were COPD patients who were newly admitted to National Clinical Research Center for Respiratory Diseases (NCRCRD), a 354-bed, medical and clinical research center in a tertiary hospital in Beijing, China.

2. Table 2. Characteristic "Married and local resident" shouldn't result in outcomes therefore married status and local residents shouldn't be pertinent to indicate in the table. If the authors believe that these two items are important factors in the characterization, they authors should educate the value of these two items in the characterization of the patients.
Response:
Thanks. We agree that marital status and residency did not result in lengthy LOS, which had been demonstrated in our data. Per your suggestion, we have removed the two variables and updated RR estimates of age and gender. Please see the highlighted in red in table 2. We just kept the two variables in table 1 to characterize our study patients.

3. Pulmonary encephalopathy sounds not very clear, the authors are recommended to use the term "hypoxic-hypercarbic encephalopathy"
Response:
Thanks for your careful review and recommendation. We have replaced pulmonary encephalopathy with the term “hypoxic-hypercarbic encephalopathy” throughout the manuscript.

4. The conclusion is very expected. Comorbidities predicted the long LOS of COPD patients. However, there is/are not clear comments how to address the problem of long LOS of COPD patients due to comorbidities.
Response:
Thank you for this insightful comment. To stress the importance of comorbidity management in LOS reduction, we have added the following comments how to address the issue of long LOS. Please see the highlighted in red in Discussion section:
As shown in our study, COPD complications, (venous thromboembolism and hypoxic-hypercarbic

encephalopathy) and comorbidities (respiratory infection and osteoporosis) increased risk of prolonged hospital stay. These comorbid conditions are potentially preventable and treatable. For instance, early thromboprophylaxis like anticoagulation or mechanical prophylaxis are adopted when COPD patients are admitted to prevent thrombotic events during hospitalization; provide respiratory support promptly when patients present hypoxic-hypercarbic syndrome; and recommend patients pneumococcal and influenza vaccination to avoid respiratory infection. These tailored interventions are expected to help shorten LOS and save healthcare cost of COPD patients.