Response to the reviewers

Thank you for considering our manuscript. We are very grateful for the reviewers' valuable comments and suggestions, and we have much learned from them to revise and improve our manuscript.

Please watch the revised documents. The amendments are clarified with the track change option of MS Word in the revised ones. Our responses to all of the comments by the reviewers are written below.

We hope that this revision will meet with your approval.

Sincerely yours,

On behalf of authors,
Akihiro Shiina MD, PhD
Chiba University Center for Forensic Mental Health

Reviewer's code: 03887097
- Please change "by a grant to the corresponding author from the Japanese Ministry of Health" to "by a grant awarded to the corresponding author by the Japanese Ministry of Health".
We amended the text according to the reviewer's suggestion.

- "On July 26, 2016, an ex-employee intruded a residence for people with disabilities and killed 19 residents; this act was motivated by his prejudiced ideology." A citation to a news article should be provided here.
We added an article in newspaper about this incident for reference.

- More information should be provided in the introduction section regarding the provided treatment and services. What rehabilitation programmes are there? Are there any psychology-based correctional programmes, family programmes, skills training and religious services etc.?
According to the reviewer's suggestion, we added some description regarding the treatment for patients under involuntary hospitalization.
Actually, religious service is very scarce in Japan. Family support is not regulated in Japan

legislation. Such kind of care is provided by limited practitioners who are personally concerned about them, we guess.

- What exactly does "discussion with specialists external to the hospital" entail? Does this often result in changes in the the medication or treatment plan for these patients? Are these mental health specialists or internal medicine specialists? If psychiatric specialists do already exist in the hospital these patients are admitted to, are the authors contending that they provide inadequate services or assessment (hence poorer outcomes) compared to external specialists?
In this context, external specialists mean mental health specialists, mostly skilled psychiatrists. We did not gather the data of the content of collaborative discussion with external specialists in this study. In general, medical practitioners sometimes call for advice to a local mental health and welfare center in which an experienced psychiatrist is the administrator.
We do not mean that psychiatrists in a psychiatric hospital are not skilled enough. But, in some complex cases, collaborative discussion can effectively produce better care approaches, we believe. Also, the planed bill of Mental Health and Welfare Act mentioned it.
We amended the paragraph for better explanation.

- There are several limitations to the present study which should be discussed in the manuscript. The criteria used to determine "good" vs "poor" prognosis is highly contentious. Authors considered "patients who had regularly visited an outpatient clinic" as having a good prognosis. These could be frequent relapsers or non-responders whose symptoms were not severe enough to warrant hospitalization. The next issue concerns the validity of the study sample, i.e. the stage in the course of the illness at which patients were recruited into the study. As this was a retrospective study, it was unclear how long the patients had been ill before inclusion in the study. It is likely that the future course of the illness will be highly influenced by the preceding course—so how can a clinician derive a useful estimate for the individual patient in front of them? To be clinically useful, the study needs to recruit patients at a uniform point in the course of the illness—this will usually be at the onset, or a very early stage, of the disorder—or at a defined point in the condition. Unless prognostic factors have been adequately adjusted for confounding and revalidated in an independent sample of patients, then the clinician should be cautious about relying on them. It is usually better to rely mainly on the overall estimate of prognosis for the full cohort (with the CI). I think overall these results provide little new insight to the effectiveness of administrative involuntary hospitalization. Perhaps it could be argued that as a whole, these patients were often sicker and hence had (unsurprisingly) poorer prognoses.

We accept the suggestion that this dichotomy we adopted has several issues of argument. The grand aim of this study was to examine the extent to which mental health service providers could track the prognoses of ex-inpatients who had been hospitalized under order of the prefectural governor. We added the mentioning that logistic regression analysis was conducted as an exploratory analysis.

The reviewer suggests that outpatients regularly visiting the hospital include relapsers and non-responders. This opinion is reasonable. But, in real, there are very few psychiatric patients get fully recovered so that they never need to visit hospital again. For many patients, withdrawal from regular hospital visit is a risk of relapse. Therefore, we think that maintaining daily life with receiving mental health support in the community is relatively good prognosis for patients experienced involuntary hospitalization many of which have schizophrenia.

As the reviewer mentions, we did not gather information of each patient's past medical history. Recruiting patients as a uniform point to follow them up prospectively is superior as a study design. As well, full cohort would be more valuable as a study design to examine the relationship between treatment and outcome, as the reviewer suggested. It was difficult for us to conduct full cohort study mainly for limited budget and time. It is a limitation of this study protocol. We added this issue in the discussion section.

Reviewer's code: 00784262

This is a study on an important topic - the outcome of psychiatric patients who are involuntariy hospitalized and, therefore, assumed to be more severely ill than other patients. In this case, the target population had also committed a crime, but not a major crime and were, therefore, governed by specific legislation in Japan. The study tried to ascertain whether any specific treatment while involuntarily detained led to better outcome at one and two years. Patients were not examined but administrative data were collected (hospitalizations, deaths etc) I have several questions: I know the study was ethically, but were the patients told in advanced that they might be tracked in this way after discharge? What is the legal/ethical justification?

In this study, any patients were not been informed about this survey. We did not contact with any patients themselves. We only received the data which had been storage before the survey started in each hospital. We never gather personal information of each patient. In addition, since many patients have lost connection with hospitals, nobody can contact with them. Considering these conditions, we have submitted the whole protocol of this study to the Ethics Committee in Chiba University Graduate School of Medicine, to get the permission of performing this study. In addition, we have registered this study to a national database

administered by UMIN Clinical Trial Registry. Therefore, we believe this study has no ethical issues.

It seems logical to think that ongoing treatment rather than past hospital treatment would be the determinant of outcome. Why couldn't the patients and/or their families be interviewed?
As the reviewer mentions, it is important to investigate the current or nearly past treatment in detail for examine the factors influencing the clinical outcome. However, direct contact was not applied in this study, as written above. In addition, our primary purpose was to clarify the current situation of following up the patients who had been hospitalized by the prefectural governor's order. Therefore, we prioritized to gather the outcome data as many as possible with limited resource.

The one item that was associated with better outcome was outside consultation prior to discharge. The authors state: "In cases where such consultation was received, the patient and practitioners may wish to ensure the patient adapts to life in the community. However, careful consideration is necessary before consultation with external specialists. In such cases, dismissal of the prefectural governor's hospitalization order may be considered with various conditions." I don't understand what this means. When and why are such consultations carried out? Why do the authors think that such consultations improve outcome?
We admit the vagueness of the description about external consultation of the original manuscript. We amended the description for better explanation.

Reviewer's code: 02989927
WJP 02989927 - Outcomes of administrative involuntary hospitalization: A national retrospective cohort study in Japan, by Shiina et al., 2019. This a retrospective study on involuntary hospitalization in Japan. Questionnaires were distributed to 939 facilities across Japan, covering data for involuntary hospitalization cases and the treatment provided for them in 2010, 2011, and 2012. The authors examined the relationship between treatment and prognosis for 394 patients with valid data. The study found that (1) Japanese facilities have limited ability to track the prognoses of patients who were hospitalized involuntarily; (2) external discussion with specialists is associated with a good prognosis. The low response rate is a concern to the representativeness of the data and results.
As the reviewer mentions, the response rate of this study looks not high. In practice, however, similar results are reported in many surveys in Japan. Approximately 90% of psychiatric hospitals are administered by the private sector in Japan, and some of them are not

collaborative to this kind of survey. Also, we gave no reward to participating hospitals. We believe this result is reasonable for limited budget of this survey. We added a couple of sentences into the original manuscript to mention this issue.

This is a under-researched topic in the Asian countries. However, data is limited to the outcome, without a greater description of the type of crime, recurrence of criminal practice and better characterization of the patients (demographics). These data are much in need, but the study has to provide meaningful outcomes in relation to predictors.
As this is a retrospective survey referring medical records saved in each hospital, we could not gather the data of each patient in detail. Also, we did not ask for personal information with risk to identify them. Therefore, findings from this survey is limited. Nonetheless, we believe this survey was fruitful for concerning people.

I missed the regression analyses in a Table for this study.
We pretermit expressing the data of dismissed items in the regression analysis because there was only one factor was extracted as statistically significant. Instead, we have described the formula of the result in the main text regarding regression analysis.

I would recommend to expand the details required to understand the problem of involuntary hospitalization in Japan.
According to the reviewer's suggestion, we added some sentences to mention the issue of involuntary hospitalization in Japan especially the lack of standard of treatment in the Mental Health and Welfare Act juxtaposing the Medical Treatment and Supervision Act.