Author's response to reviews

Title: Cost-effectiveness of a health-social partnership transitional program for post-discharge medical patients

Authors:

Frances KY Wong (hsfwong@inet.polyu.edu.hk)
June Chau (jchau@hkucc.hku.hk)
Ching So (jcso@hkucc.hku.hk)
Stanley KF Tam (tamkfs@ha.org.hk)
McGhee Sarah (smmcghee@hkucc.hku.hk)

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Cost-effectiveness of a health-social partnership transitional program for post-discharge medical patients
Frances KY Wong, June Chau, Ching So, Stanley KF Tam and McGhee Sarah

Response to reviewers' comments

The authors would like to thank the reviewers for their valuable comments and help improve our paper. Below please find the responses to the comments and the changes have been highlighted in red in the revised manuscript.

Comments of the editors

E.1 Please provide in your manuscript the specific name of the ethics committee which granted approval.

Response: A statement specifying the names of the ethics committee with reference numbers has been included in the Ethics section under Methods.

E.2 Using the term of 'proper economic evaluation'

Response: The authors have now changed the term 'proper economic evaluation' to 'full economic evaluation' which takes account of both cost and outcomes, referencing the classification of economic evaluation described by Drummond et al (2005).

Comments of Reviewer Shadi Saleh

S.1 The authors should highlight their contribution to the health-social intervention.

Response: The authors have highlighted the contribution of this study in the literature in the Conclusion section. It is explained that health-social partnership is an important trend for post-discharge services, and in some countries there are national policies to support this move. However, there is no study to inform policy makers if health-social partnership is cost-effective. This study fills the knowledge gap.

S.2 Reasons for 28 days and 84 days (12 weeks).

Response: In our study, we go along with the Hong Kong health care management system which uses the 28-day (i.e. 4 weeks) readmission as one of the key performance indicators. In congruent with this counting of days, we chose 84 days (i.e. 12 weeks) to examine the sustained effect of the intervention. As rightly acknowledged by the reviewer, some studies also examined 90 days (around 12 weeks) to examine sustained effects of the programs in addition to the commonly used 30 days.

S.3 Methods – (a) readmissions related to index admission; (b) only hospital days are factored in

Response: (a) Only readmissions related to index admission are counted. We excluded the readmissions with non-medical causes or new problems not related to the original admission. This point has been made clear in the description of 'Healthcare cost'. (b) Hong Kong adopts a system where any citizen admitted to the hospitals in the public system will be charged a standard fee of HK$100 (US$1=HK$7.75/day). The government will provide a block grant to individual hospitals according to the number of beds, population served, and category of beds. In an acute hospital like the study hospital, the unit cost per bed provided by the government is HK$3650, regardless of the treatment and procedures done on the patients. Without a payment schedule for different treatment/procedures, we cannot accurately do the differential cost calculation but have to resolve with the unit cost per hospital day.

S.4 Intervention – further describe the 'social' part

Response: There is now more description in the 'randomized controlled trial' section under 'Methods' section, to explain how the social part is expressed in the transitional care program.

S.5 Abstract

Response: The first two sentences of the abstract are revised to explain that many studies focused on clinical outcomes with scanty studies reported cost nor cost-effectiveness analysis.

S.6 Background – 'rehospitalization place a financial burden' – depends on the payment method

Response: The sentence is revised to state that 'Rehospitalizations place a financial burden on hospitals particularly those using public funding.'

Comments of Reviewer Kylie Wales

K.1 Use of the term 'proper' review of cost effectiveness.

Response: Please refer to response to E.2 above

K.2 Further description of the intervention

Response: The description in the 'randomized controlled trial' section under 'Methods' is now elaborated to provide a fuller description of the interventions.

K.3 Cost and healthcare outcomes – why is age adjusted

Response: As the quality of life (QOL) can be affected by other variables including age, gender and treatment group, we therefore controlled these variables in the regression imputation to replace the missing QOL values.

K.4 Pre-program and program cost – standard time or staff record time

Response: There is standard time to the pre-program training since the training is structured and planned. As for the program cost, the duration of the calls varied. We have recorded the nurse telephone calls so we were able to extract the log and used the exact time spent on each call for our calculation of program cost.

K.5 Healthcare cost – were Accident and Emergency presentations not leading to admission in hospital included?

Response: Since the main study used hospital readmission as the primary outcome, only data on hospital readmission were collected. Other healthcare expenses such as A&E visits, outpatient consultation, drug etc. were not included in this study. We have stated this in the limitations of our study.

K.6 Ethics section – move earlier in the methods section

Response: Done

K.7 Bootstrap methods – why used over others such as Fieller's method, needs referencing

Response: The Fieller's method mentioned by the reviewer is a generic approach for calculating the confidence interval for the ratio of two means (e.g. ICER). This method works on an assumption that the two means are normally distributed and this method may have a limitation when the sampling distribution is unknown. In the current study, we are uncertain about the difference in health outcome and cost between the two groups and Bootstrap is an appropriate method of choice. This is explained in the Cost-effectiveness analysis section and reference is provided.

K.8 Why 28 days and 84 days readmission were used

Response: Please refer to response to S2 above

K.9 Background review of literature – Shepperd et.al. (2010)

Response: The authors thanked the reviewer for acknowledging our thorough overview of the literature. The authors are familiar with the piece of work done by Shepperd et al. (2010) published by the Cochrane Library. We did not include Shepperd et al's work in our paper because our study focuses on transitional care, that is, support for patients after hospital discharge while Shepperd et al's work focuses on discharge planning. In fact, Shepperd et al's explicitly stated that they would exclude studies from the review if those studies did not include an assessment and implementation phase of discharge planning prior to leaving the hospital. Many of the transitional care studies concentrated on post-discharge arrangement with little involvement in pre-discharge intervention would have been excluded from Shepperd et al's review. The authors have to be selective and confine the references of studies that are directly relevant to our study, within the required length of the paper.

K.10 Discussion – whether studies are transitional based or community based and needs to be stronger on how the authors build on the already known

Response: The authors have specified whether the studies were community-based, hospital-based or transitional-based when these studies were discussed and referenced. The first paragraph of the discussion has been re-written to highlight the knowledge gap in the literature. This paper is original and contributes to the literature by providing evidence to show that a health-social partnership transitional care program is cost-effective in reducing healthcare costs and attaining QALY gains. Previous studies on transitional care focused mainly on clinical outcomes and the interventional programs tend to use healthcare professionals as the sole providers. There is no study that could be identified using non-health professionals in transitional care programs. There were programs that used volunteers or lay persons to provide support for patients, but they were either entirely hospital-based or community-based. This study is an original attempt to involve volunteers in a nurse-led transitional care program, and subjected it for empirical testing and cost-effectiveness analysis. Among the studies that have reported cost savings of transitional care programs, very few have conducted a full cost-effective analysis.