Evidence Based Library and Information Practice

Evidence Summary

Morning Report Presentation with Literature Search Associated with Decreased Length of Hospital Stay

A Review of:

Banks, Daniel E., Runhus Shi, Donna F. Timm, Kerri Ann Christopher, David Charles Duggar, Marianne Comegys, and Jerry McLarty. "Decreased Hospital Length of Stay Associated with Presentation of Cases at Morning Report with Librarian Support." Journal of the Medical Library Association 95.4 (Oct. 2007): 381-87.

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Abstract

Objective – To determine whether hospital charges, length of stay or 30-day re-admission rates were affected by case discussion at residents' morning report (MR), accompanied by librarian-provided literature search results, within 24 hours of admission.

Design – Case-control study and survey.

Setting – Louisiana State University School of Medicine.

Subjects – MR cases presented during the study period August 2004 to March 2005 matched with one to three cases (controls) of patients who were hospitalised in the period January 2000 to July 2005. House officers who presented the MR cases during the study period were the subjects for the survey.

Methods – MR cases were presented between 8:00am and 9:00am, five days a week, and only one case was presented at each MR. During the study period, August 2004 to March 2005, the presenting house officer selected independently a case for

presentation at MR from patients admitted during the previous 24 hours. The selection was made without guidance as to which cases or illnesses to choose and without the knowledge or involvement of the attending physician or investigators. The term "house officer" is not defined in the article so it is not clear whether this refers to medical residents only, or if it includes interns.

The faculty librarian, with clinical input from the chief resident or the chair of the Department of Medicine, conducted a search of the medical literature immediately following the MR to identify articles or citations that would answer two questions posed at the end of the presentation. The chair of the department or chief resident selected the articles that provided the most clinically sound answers to the questions. By 10:00 am, copies of the selected articles were hand-delivered to the presenting house officer and shared with members of the ward team.

For the case-control component, the MR cases presented during the study period were matched against a comparison group of patients who were hospitalised in the period January 2000 to July 2005. Matching of controls to the MR cases was made on the basis of the primary International Classification of Diseases (ICD-9) diagnostic code, patient age and concomitant secondary diagnosis. MR cases with no matching control case were excluded from analysis of length of stay, costs or readmission rates. A maximum of three control cases were randomly selected where a MR case matched with more than three control cases.

Data regarding demographic information of the patient (age, sex, race, insurance coverage, marital status and number of diseases diagnosed), the length of stay, total hospitalisation charges and readmission rates within 30 days of initial discharge were extracted from the medical records of matched MR and control cases.

Statistical tests (Student T or chi-squared tests) were used to compare differences between the demographic details of patients in the MR group and the control cases. Wilcoxon signed rank test and Sign test were used to analyse nonparametric data such as length of stay and hospital charges. Median values, rather than the mean, were used for the outcome measures to reduce the influence of any extreme or outlier values. The researchers considered a p value less than $p = 0.05$ to be statistically significant.

For the survey component of the study, each presenting house officer was asked to complete a questionnaire for each MR case they presented during the study period, which asked them to comment on the quality of the articles located in response to the questions posed at the MR and to say whether the information would influence their treatment of the patient. A copy of the questionnaire is accessible online via a link within the article; however it is not stated who analyzed the results or how this was done.

Main Results – Of the 105 cased presented at MR during the study period, 55 cases could be matched with at least one control up to a maximum of three cases, resulting in a total of 136 control cases.

Statistical analysis of the MR cases and the control cases showed no significant difference in the demographic details between the groups.

MR cases had a median length of stay of three days compared to five days for control cases. This difference was statistically significant ($p = 0.0238$). A logarithmic plot comparing length of stay between MR cases and controls showed a positive association

that was statistically significant (p = 0.012) between presentation at MR and a reduced median length of stay.

Median hospitalisation charges were $7,045 for the MR cases and $10,663 for the control cases; however, the difference was not statistically significant (p = 0.24). A logarithmic plot for total charges showed that, in most cases, charges for MR cases were lower than controls; however, the differences did not reach statistical significance (p = 0.18).

Readmission rates within thirty days of initial discharge were 16.4% for MR cases and 16.8% for controls. There was no statistically significant difference in readmission rates between the groups (p > 0.88).

Analysis of the survey responses found that the house officers commented on the quality of the articles for 60 of the 105 MR cases presented. In 43 cases, the house officer commented that the articles had a positive influence on patient management. Comments for a further ten cases indicated that, although they did not alter the management of MR patient cases, the house officers believed that the articles provided good background information which may be helpful in the future. Seven other comments indicated that the articles had not influenced their patient management in any respect.

Conclusion – Presentation of cases at MR accompanied by dissemination of literature search results resulted in a statistically significant shortened median length of stay and lower hospital charges compared to matched control cases. Readmission rates within 30 days of first diagnosis showed no differences between MR cases and control cases.

Supplementary survey results found that the 41% of the presenting house officers believed that the literature search information provided following the MR presentation positively influenced patient management.

Commentary

This is an interesting study that attempts to quantify an issue of importance to all clinical librarians. One of the strengths of this study is the use of objective outcome measures, such as length of stay and readmission rates, which help demonstrate the contribution that clinical librarians can make to patient care.

The authors chose to use a case-control study design. They did not discuss why they used this methodology in preference to alternatives, such as a prospective study design. A common problem with case-control studies is the difficulty in trying to account for all possible areas of variation between the control and intervention groups. As the control cases were drawn from in-patients admitted over a five-year period, there were many aspects that were difficult to define and outside the researchers' control that, as they said, could have accounted for the variation between MR and control cases. These included the introduction of new therapies, more effective interventions or changes in medical practice. There may have been differences in the quality of care provided by the house officers, and year to year variability or seasonal differences in the date of admission could also have generated variability in patients and diseases.

The researchers have made every effort to limit any differences. Selection of MR cases was made independently thereby limiting selection bias, and MR and control cases were closely matched by diagnosed conditions and demographic details.

Established statistical techniques were used to compare the outcomes between the groups and also for checking that the demographic characteristics of the groups were similar. It is therefore more likely that the outcomes reported are valid and that they are a result of the MR intervention.

Owing to the complexity of the cases and differing co-morbidities, the researchers had difficulty matching controls to the MR cases and were unable to match 50 of the 105 MR cases despite having access to over 19,000 potential control cases. The researchers do suggest that a greater statistical power (i.e., more matched cases) may have allowed them to detect a significant effect on charges, although no power calculation was included in the paper.

The method of identifying the articles was not described in detail, only that they were "identified as providing the most clinically sound answers to the questions" (382) by the chair of the department of medicine or the chief resident. No criteria were given on which the choice of articles was based.

It is helpful that a copy of the questionnaire is included in the supplementary online content to the article. However it is not clear who created or distributed the questionnaire, although it seems to be implied that it was the librarians based at the School of Medicine where the study took place. It is also unclear who analysed the survey data or the basis on how this was

done. As the researchers have pointed out, the house officers may not have acted upon nor even read the literature research results and there was no compulsion for them to do so. Comments on the quality of the literature results were made for 57% of the MR cases; however, we do not know if it was the same house officers who responded or indeed, how many house officers were surveyed.

The researchers have used an interesting approach (case control and survey) to investigate whether MR with librarian support makes a significant difference to patient care. As such, it may be worth continuing the study using a longitudinal or prospective study design.

The intervention (MR with librarian support) was studied only as to whether it affects clinical outcomes for those presented at MR, which is a relatively small proportion of cases, and these might not be representative of the population. As suggested by the survey results, this type of intervention may have more overall effect on physicians' knowledge and skills, but the article does not assess this. It is disappointing that the use of the literature search results were not reported more fully in the article. Although outside the remit of this study, a further study to investigate the relative contributions of the MR presentation and the literature search conducted by the librarian in affecting clinical outcomes would be of interest.