

Patients' Experience of Emergency Admission and Discharge Seven Days a Week

Abstract

Purpose: Data from the 2014 Adult Inpatients Survey of acute trusts in England was analysed to review the consistency of patients' experiences of emergency admission and discharge seven days a week.

Methodology: Results were derived from secondary analysis of 2014 patient survey data for 59,083 adult inpatients. The questions for comparing experiences of emergency admission and discharge were selected using discriminant function analysis and logistic regression on a wide set of questions from the survey. Analysis was conducted to compare the percentage of top-box responses, the most positive answer options, for each of the selected questions. Data was weighted to standardise the patient profile within each trust across weekend and weekday cases.

Results: Patients' experiences were found to be slightly more positive at weekends, with Monday emerging as the day where patient experience was the lowest for three of the six questions used within the study. In contradiction to this though the adult social care discharge question, found the most positive experiences to be on a Monday.

Discussion: These results of patients' experiences being worse on a Monday may be driven by the weekend¹ and twilight effects², with a multitude of factors having been postulated as the cause: staffing levels and mix, cross cover for other clinicians' patients, and the severity of the patients' illnesses.

Methodology

Two combined indicators were developed to compare people's experiences of emergency admissions and of discharges from hospital on weekdays and at weekends. The indicators were established to answer two questions:

1. Do people with emergency admissions at the weekend have different experiences of **admission** compared with those who had emergency admissions on weekdays?
2. Do people discharged at the weekend have different experiences of **discharge** compared with those discharged on weekdays?

Each combined indicator was based on questions from the 2014 Adult Inpatient Survey. The score for each indicator was derived as a mean of the national results for the selected questions within each indicator.

A third indicator to address the question of *'Do people with emergency admissions at the weekend have different experiences of **care overall** compared with those who had emergency admissions on weekdays?'* was also initially considered, using Adult

Inpatient Survey questions such as '*Overall experience (0-10)*'. However during the metric development process it became evident that this was not appropriate for inclusion as it failed the statistical tests used in the selection process.

Sets of possible questions to be included within the combined indicators were reduced to a refined set using discriminant function analysis to determine whether the questions were effective in predicting category membership³. Using this statistical analysis test meant that the optimum combination of questions for predicting the timing of a patients' emergency admission/discharge, i.e. weekday or weekend, could then be identified. Results were checked using logistic regression to ensure the most appropriate choices were made.

The outcome of this process was two questions (from a possible three) were chosen for experience of emergency admission and four (from a possible fifteen) were chosen for experience of discharge:

- Q3. While you were in the A&E Department, how much information about your condition or treatment was given to you?
- Q9. From the time you arrived at the hospital, did you feel that you had to wait a long time to get to a bed on a ward?
- Q50. Did you feel you were involved in decisions about your discharge from hospital?
- Q52. On the day you left hospital, was your discharge delayed for any reason?
- Q58. Were you told how to take your medication in a way you could understand?
- Q65. Did hospital staff discuss with you whether you may need any further health or social care services after leaving hospital?

Weights were calculated in order to standardise the patient profile within each trust across the weekend and weekday cases for each of emergency admissions and discharges. Trust-level weights were used based on the number of respondents discharged/urgently admitted, to give each trust equal influence on the results.

All weights were capped at a maximum of 5 to prevent excessive influence. If a patient had a weight of 5, it is equivalent to saying that their 1 response is equivalent to 5 people of the same gender, age and (for admissions) whether the patient had been an emergency or elective admission responding the same as them.

Results

Table one shows that there is a small difference between patients' experiences of weekend and weekday emergency admissions (1.5%) and discharges (0.8%). In each case combined scores for weekend experiences were slightly higher.

Table 1: the proportion of 'top-box' responses – weekday vs. weekend

| Respondents who stated that: | Weekday | | Weekend | | |
|---|---------|-------------|---------|-------------|---|
| | Base | % | Base | % | |
| ... while they were in the A&E Department, they received the right amount of information about their condition or treatment (Q3) | 20,694 | 72.9 | 6,453 | 75.5 | ✓ |
| ... from the time they arrived at the hospital, they did not feel they had to wait a long time to get to a bed on a ward (Q9) | 27,262 | 56.8 | 8,050 | 57.3 | |
| Combined | | 64.9 | | 66.4 | |
| ... they were definitely involved in decisions about their discharge from hospital (Q50) | 44,717 | 53.4 | 10,882 | 54.7 | ✓ |
| ... on the day they left hospital their discharge was not delayed for any reason (Q52) | 43,565 | 60.5 | 10,557 | 61.7 | ✓ |
| ... they were definitely told how to take their medication in a way they could understand (Q58) | 30,845 | 75.1 | 7,326 | 76.9 | ✓ |
| ... hospital staff discussed with them whether they need any further health or social care services after leaving hospital? (Q65) | 25,090 | 85.4 | 5,575 | 84.5 | |
| Combined | | 68.6 | | 69.4 | |

The Chi-square statistic is significant at the .05 level, indicated by a ✓

Percentages have been rounded to 1 decimal place

Base sizes vary due to the use of 'filter questions' within the survey, to ensure respondents are only asked those relevant to their individual experience. For example Q58 was only asked to those who received medication

Table one also shows that at an individual question level, with the exception of Q65, patient experiences are slightly more positive at the weekend for all questions. The small variations in patients' experiences for Q3 (2.6%), Q50 (1.3%), Q52 (1.2%) and Q58 (1.8%) were all found to be statistically significant at the 95% confidence level.

It is also worth noting, that the difference for Q65 (0.9%), the only question where experiences were more positive on a weekday, was not found to be statistically significant at the 95% confidence level.

When comparing patients' experiences over the week, three questions: Q3, Q50 and Q52 revealed that the lowest levels of positive experiences were found to be on a Monday. By contrast, Q65 had the highest levels of positive experiences on a Monday.

Figure 1: proportion of 'top-box' responses emergency admission questions – days of the week (rounded to 1dp)

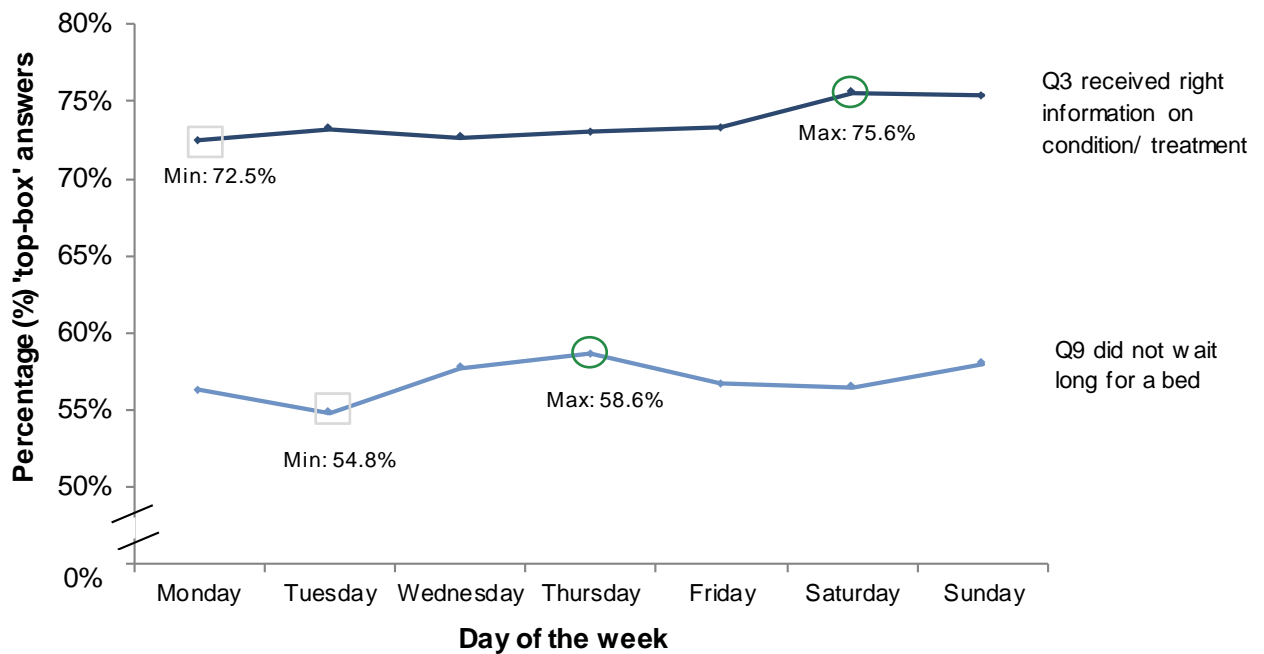
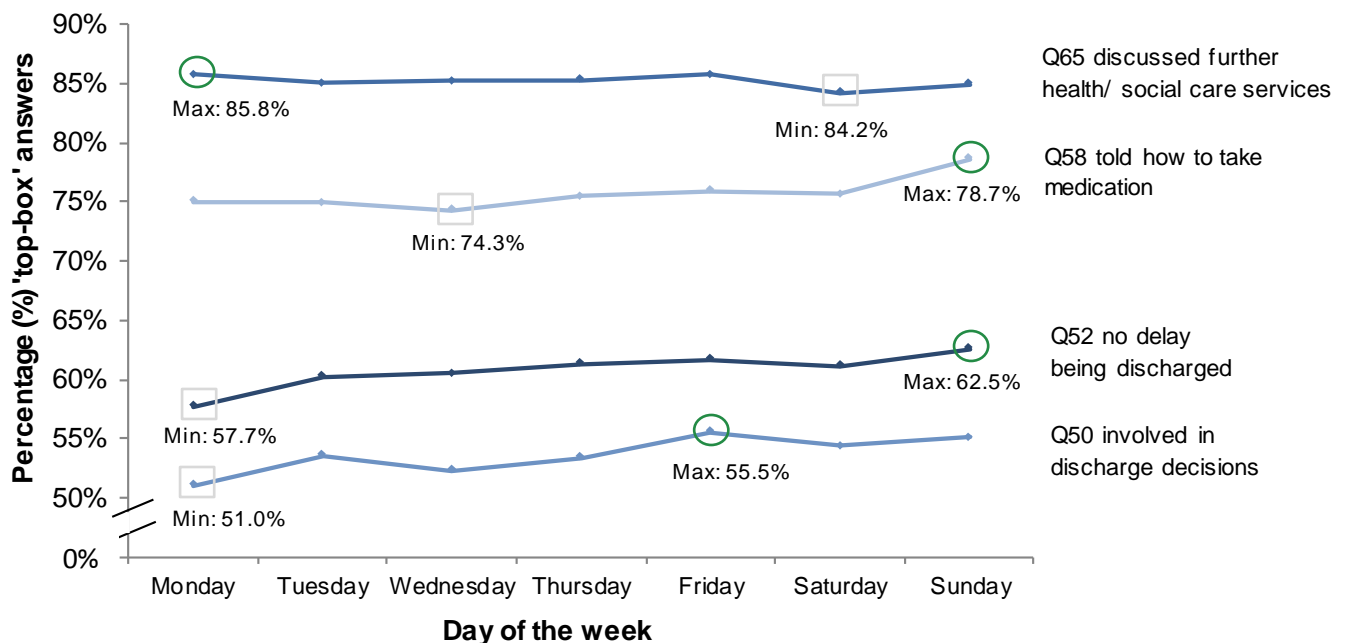


Figure 2: proportion of 'top-box' responses discharge questions – days of the week (rounded to 1dp)



Discussion

A recent study² has shown that patients admitted to hospital on a Saturday or Sunday faced an increased likelihood of dying within 30 days of admission, compared to those admitted on a Wednesday. The study also showed a smaller increased risk of 30 day mortality for those patients admitted on Friday and Monday leading to the suggestion of a more widespread 'weekend effect'¹. Further research²

has also suggested a 'twilight effect' which indicated that evening admissions, specifically those on a Monday, were the highest mortality risk group.

The NHS committed to a move towards routine services being available seven days a week when it published *Everyone Counts: Planning for patients 2013/14*⁴.

In order to facilitate this process the Seven Days a Week Forum was established to support commissioners and providers throughout the transition. The forum recommended the adoption of 10 evidence-based clinical standards to address variation in care⁵. This included a standard on patient experience that focussed on involvement and engagement with patients in the delivery of their care.

This analysis indicates that people's experiences of emergency admissions and discharges do vary slightly, but significantly, across the week. The results show that people's experiences of care tend to be slightly better at the weekend and slightly worse at the start of the working week, particularly on a Monday.

To illustrate this patients' experience of being involved in decisions during discharge differed by 4.1% when comparing Monday (51.0%) and Sunday (55.1%), whilst there was an even greater discrepancy of 4.8% for delays being experienced during discharge when comparing Monday (57.7%) and Sunday (62.5%).

There may be a number of reasons why this may be the case. A number of factors have been postulated for 'the weekend effect' and 'twilight' effects including staffing levels and mix, cross cover for other clinicians' patients, and the severity of the patients' illnesses. All of these factors may affect patients' experiences of care as well as their outcome.

It is possible that the lack of social care staff in hospitals at the weekend contributes to small decline in patients' experience of having their further health or social care services discussed as part of the discharge process. Patients' experience of this is lowest on Saturday (84.2%) and slightly better on a Monday (85.8%).

For the period covered by the Adult Inpatient 2014 survey (June, July and August 2014) acute hospitals also have a higher number of patients overnight on Mondays, see table 2.

Table 2: Bed Occupancy by day

| Day of the week | Count of beds occupied at midnight |
|-----------------|------------------------------------|
| Monday | 1,035,828 |
| Tuesday | 1,034,662 |
| Wednesday | 1,029,825 |
| Thursday | 1,021,291 |
| Friday | 980,826 |
| Saturday | 973,451 |
| Sunday | 1,005,321 |

Data source: HES inpatient spells 2014/15 M12, for the period 1 June 2014 to 16 August 2014. Figures include elective, emergency and other admissions and admission from transfers of care.

This may indicate that on a Monday nursing staff, in particular, are busier and that involvement and engagement with patients about their care declines as a result. This may also contribute to patients' experiencing delays to be discharged on Monday compared with emergency admissions at the weekend.

Limitations

The analysis above is based on the results of only one Adult Inpatient Survey, which contained data from a three month time period covering June to August 2014.

The six questions used for this analysis should also be reviewed to ensure that they are the most appropriate measures of patients' experience of services seven days a week. The reasoning for this is twofold, firstly there may be questions not currently included within the Adult Inpatient Survey which would allow better metrics to be developed for measuring patients' experience of services seven days a week. In addition to this, now that potential causes for the variations in patient experience have been discussed, there may be questions currently within the Adult Inpatient Survey which align with these. For example, Q41 '*How many minutes after you used the call button did it usually take before you got the help you needed?*', may need investigating as to whether it should be included within improved metrics in future, based on the potential staffing capacity issues on a Monday highlighted previously.

While admission date and discharge date is collected as part of the sample for the Adult Inpatient Survey, time of admission or discharge is not. This may affect patients' experience and could be considered for collection in future years' surveys.

Severity of condition was also not taken into account when applying standardisation weights, again, as this data is not routinely collected through the survey.

Conclusion

The analysis of the Adult Inpatient Survey 2014 supports the view that there are variations in people's experiences of emergency admission and discharge across the week. It also supports the view of an extended weekend effect particularly in peoples' experiences of care on Monday. This may be the result of a range of factors including staff availability, particularly social care staff, and the variation in volume of patients being treated in hospitals.

While these results indicate similar messages to those raised elsewhere, our tentative proposals for the cause of the variation would benefit from further consideration.

References

- 1 - <http://www.bmj.com/content/351/bmj.h4596>
- 2 - <http://www.rcpe.ac.uk/sites/default/files/mallet.pdf>
- 3 - Green, S.B. Salkind, N. J. & Akey, T. M. (2008). Using SPSS for Windows and Macintosh: Analyzing and understanding data. New Jersey: Prentice Hall.
- 4 - <http://www.england.nhs.uk/wp-content/uploads/2012/12/everyonecounts-planning.pdf>
- 5 - <http://www.england.nhs.uk/ourwork/qual-clin-lead/7-day-week/>