

The F.R.I.D.A.Y.S. checklist - Preparing our patients for a safe weekend

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Abstract

There is a higher incidence of mortality and adverse events among inpatients in UK hospitals at the weekend compared to weekdays. The high volume of routine tasks handed over by the weekday doctors on Fridays may be a contributing factor.

An audit was carried out on four acute wards on a Friday evening at University Hospital Lewisham (UHL). It demonstrated that most patients had at least one outstanding task that would need completing by the on-call team over the weekend. To address this problem a concise and memorable checklist was created to ensure that routine jobs are completed by the weekday team prior to the weekend.

The checklist uses the acronym "F.R.I.D.A.Y.S." to prompt doctors to hand over weekend bloods, ensure drug charts are reviewed, document a plan for IV fluids, complete discharge summaries, monitor antibiotic levels, dose warfarin, and clearly document the ceiling of care. The F.R.I.D.A.Y.S. checklist was printed onto history paper and integrated into the patient notes on a Friday ward round. The efficacy of the checklist was evaluated by reviewing the number of outstanding jobs on the wards after 17:00 on a Friday in the categories listed.

F-Phlebotomy

R-Rewrite drug chart

I-IV fluids

D-Discharge summaries

A-Antibiotic levels

Y-Yellow book (warfarin)

S-Resuscitation Status

The number of outstanding jobs on a ward (A) that used F.R.I.D.A.Y.S. was 3 out of a total 132 jobs (2.3%) compared with 47 out of a total of 103 (45.6%) on a ward that did not use the checklist (B).

When the F.R.I.D.A.Y.S. checklist is implemented there is an increase in the number of routine jobs that are carried out by the weekday team, and therefore a reduction in workload for the weekend on call team. Patient safety is improved as management decisions are made by a team that is familiar with the patient, and on call teams are able to prioritise emergencies. The cost saving of using the F.R.I.D.A.Y.S. checklist if implemented throughout UHL is estimated at £317,136 per annum.

Problem

Weekend on-call services in an acute hospital present a particularly high risk environment for patients. An overstretched on-call medical service leads to an increase in medical errors, resulting in a negative impact on patient care. The on-call team is primarily in place to tackle emergencies, however a great deal of their time is spent performing routine jobs that have not been handed over. These tasks, such as rewriting drug charts, completing discharge summaries and dosing warfarin can be easily predicted and they should be performed by the patients' usual medical team before the on-call service takes over. There is currently no procedure in place to ensure that routine tasks are completed before the weekend.

Failure to complete routine tasks before the weekend further stretches the on-call service, distracting the doctors from more urgent, emergency duties and increasing the likelihood of error.

Background

It is well documented that weekend inpatients in UK hospitals have a higher risk of adverse events than inpatients during the working week (1,2).

A study recently published in the Journal of the Royal Society of Medicine demonstrated that admission to hospital on a weekend is associated with an increase in all case 30 day mortality compared

with admission on a weekday (2). The study attributes multiple factors to be responsible including reduced or altered staffing, the impact of the shift system, reduced availability of diagnostics, less availability of senior staff, and less awareness of department policies. Another reason for the increased mortality is suggested by Helen Macdonald in her BMJ Group blog post "juniors can cover many wards of unfamiliar patients, sometimes from specialties they have never experienced" (3). This higher rate of mortality has been demonstrated in many conditions including acute coronary syndrome (6), cerebral vascular accident (7), pulmonary embolism, and COPD (8,9). Further evidence collected by the health analysis company Dr Foster recently demonstrated a 10% spike in weekend deaths in UK hospitals (4).

The General Medical Council (GMC) have recognised that effective and safe handover is particularly important in the context of increasing shift work within the National Health Service (NHS) (10). This has been expanded in the GMC's 2013 Good Medical Practice (10) and incorporated into the Foundation Program competencies (11). A 1996 study showed that junior doctors found handover systems inadequate and that this has a negative impact on patient care (12). A recent study showed that a simple electronic handover for all weekend inpatients improved patient safety, avoided medical errors and enhanced continuity of care (5). There have been a number of studies in the literature that have focused on handover, (14,15,16) none however have addressed the paucity of routine job completion.

There are many tasks that are handed over to the on-call doctor who is unfamiliar with the patient for example prescribing antibiotics, dosing warfarin, completing discharge summaries, deciding which blood tests to request, or implementing an unclear management and escalation plan.

Baseline Measurement

All baseline parameters were recorded on a care of the elderly ward of 23 patients at University Hospital Lewisham (UHL) on a single Friday after 17:00. The day team had finished and any incomplete tasks would fall to the on-call weekend team for completion.

Parameters:

- Blood test request forms were completed and handed over to be checked.
- Drug charts had sufficient space left for medication to be signed for up until 09:00 on Monday morning.
- Patients currently receiving intravenous(IV) fluids had a clear instruction documented in the notes or on the fluid prescription chart explaining the plan for ongoing fluid requirements.
- Discharge summaries were completed for every patient that had a documented plan for discharge before 09:00 on Monday.
- Any patient needing therapeutic antibiotic monitoring over the weekend (eg gentamicin and vancomycin) was dosed appropriately

and there was documentation of the timing of the next level.

- Warfarin was dosed daily as per trust protocol and blood test monitoring requested as required.

- All patients had clear documentation of a ceiling of care, escalation plan, or DNAR form.

Results:

- 13% of all drug charts were due to run out over the weekend and would require rewriting by the on-call team (3 from a total of 23 eligible patients).
- 100% of patients on fluids did not have a clear instruction as to how to proceed with fluid management over the weekend (1 of a total of 1 patient who was on fluid therapy at the time of the data collection).
- 55% of patients predicted to be discharged over the weekend did not have their discharge prescription and electronic discharge summary completed and submitted to pharmacy (6 of a total of 11 patients predicted for possible discharge over the weekend).
- 100% did not have adequate information written on the correct procedure for antibiotic levels over the weekend (1 of 1 patient on appropriate antibiotics at the time of data collection).
- No patients were taking warfarin at the time of data collection.
- 91.3% of patients did not have clear documentation of their escalation plans, with DNAR completed if appropriate (21 patients from a total of 23 on the ward at time of data collection).
- 26% of patients had blood forms for collection over the weekend with no reference drawn to them on the handover document, or visa versa (6 patients from a total of 23 on the ward at time of data collection).

See supplementary file: ds1812.xlsx - "Baseline Measurements"

Design

A checklist was devised using the acronym "F.R.I.D.A.Y.S." to prompt doctors to standardise the review of all routine jobs and hand over incomplete tasks. The acronym stands for:

F: Phlebotomy

R: Rewrite drug charts

I: Intravenous fluids prescription

D: Discharge summaries complete

A: Antibiotic levels

Y: Yellow book (warfarin)

S: Resuscitation Status

Initially stickers with a printed checklist were created to put into the notes during the ward round. Stickers are easily produced, are inexpensive, and require no training on their application. They can be easily distributed around the hospital, or carried on the person of junior doctors. Many other interventions in the hospital also use stickers, so all teams are familiar with them and happy using them as an adjunct to care. This was introduced at junior doctor teaching to explain the intervention and promote engagement over a six month period.

Strategy

PDSA Cycle 1

The new F.R.I.D.A.Y.S. checklist stickers were printed and placed in the pigeon holes of all junior doctors. A presentation to the FY1 doctors was conducted during mandatory training highlighting:

1. The problems facing on-call services.
2. The goals of the F.R.I.D.A.Y.S. checklist project.
3. How best to utilise the stickers to improve patient care.

Consultants and nurses were not directly engaged with and after several weeks of cycling this process the stickers remained largely untouched in the junior doctor pigeon holes.

PDSA Cycle 2

Stickers were relocated to areas on the ward and distributed directly to FY1s at mandatory training. Uptake improved initially, but rapidly fell off again in only a few weeks. A small number of FY1s were informally interviewed to attempt to identify the problems with engagement:

1. There was not enough time on the ward rounds to use the stickers, and they had become a hindrance rather than a facilitator to the flow of the round.
2. The whole process was entirely junior led, with no consultant level support.
3. The stickers themselves were flawed, as there was no space to write any conditional responses, such as 'not applicable', if the situation required.
4. If stickers ran out there was no easy way to access more.
5. The stickers had to be printed on specialist paper, which was expensive and not always available.
6. Stickers produced a lot of waste, as the backing would have to be disposed of.

PDSA Cycle 3

Stickers were removed from circulation and a new checklist was created that could be directly printed onto A4 history paper and placed in the notes, forming part of the normal consultation process. This eliminated all of the problems specifically associated with stickers. This also improved the flow of the ward round, as the doctor scribing had much of their work pre-printed.

Ward round proformas were initially printed and placed on the wards in accessible places. It was advertised that further proformas could be downloaded from the hospital intranet and junior doctors were shown how to find and print them onto continuation sheets at point of use.

Consultants were directly approached to gain their support, they agreed to help the junior members of staff complete the checklist. This process was trialled on a pilot ward before rolling out to other wards.

With the support of Information Technology department, a F.R.I.D.A.Y.S. checklist screensaver was rolled out to all trust computers, detailing specifically how to gain access to the proformas. Junior doctors were emailed on Thursdays to remind them to use the F.R.I.D.A.Y.S. checklist, and presentations were given at departmental meetings to show the engagement some wards had made in comparison to others.

See supplementary file: ds2272.pptx - "Screen saver"

Post-Measurement

The F.R.I.D.A.Y.S. checklist was implemented on four of the five care of the elderly wards. At the end of PDSA cycle 3 the parameters were audited on a Friday on a ward that did use the F.R.I.D.A.Y.S. checklist (A) and directly compared to a ward that did not (B). The results showed:

F - Phlebotomy: 4 out of 27 patients (15%) had bloods that were taken over the weekend but not handed over to be checked on ward B, compared with 0 bloods that were not handed over on ward A.

R - Rewrite drug chart: 5 out of 27 patients (19%) had drug charts that would need re-writing over the weekend on ward B, compared with 0 drug charts on ward A.

I - IV fluids: 5 out of the 6 patients (83%) who were on IV fluids did not have a clearly documented plan for the fluids on ward B compared with 0 out of 6 patients on ward A.

D - Discharge summaries: 4 patients who were documented as medically fit for discharge did not have completed discharge summaries on ward B compared with 0 patients on ward A.

A - Antibiotic levels - 4 out of 4 (100%) patients who were on gentamicin did not have a plan documented for weekend levels on ward B compared with 0 out of 5 on ward A.

Y - Warfarin levels 1 out of 1 patient (100%) did not have warfarin dosed for the weekend on ward B, compared with 0 out of 5 on ward A.

S - Escalation plans - 24 out of 27 patients (89%) did not have a documented ceiling of care on ward B, compared with 2 out of 33 patients (6%) on ward A.

The results taken at each PDSA cycle are shown below and show a decline in total number of incomplete tasks at each cycle:

See supplementary file: ds2271.xls - "Comparison incomplete tasks"

Lessons and Limitations

Maintaining interest and engagement in the project was a significant challenge. When implemented correctly the F.R.I.D.A.Y.S. checklist made a demonstrable improvement to patient care, and reduced the workload of the on-call teams.

The F.R.I.D.A.Y.S. checklist requires the team to invest time and effort to complete the checklist, without receiving immediate reward. Junior doctors had a shared understanding of the stresses of the on-call, and this was a useful motivator in seeking engagement with the project. Unfortunately this initial investment in the project soon tailed off. It was concluded that involvement was needed from senior members to incorporate the checklist into the process of the ward round and to ensure greater sustainability.

The stickers in the first phase of the project were changed due to difficulty in resource provision; the stickers were unsustainable due to financial constraints, central printing, distribution, and waste. In the second phase of the project these issues were addressed by printing the checklist directly onto history sheets and uploading the F.R.I.D.A.Y.S. checklist template onto the hospital intranet. Junior doctors were able to print the F.R.I.D.A.Y.S. checklist directly into the history sheets and the checklist became a more integrated part of the inpatient notes.

Conclusion

The aims of the project were to improve patient safety at a weekend when there are lower levels of staff and increase the efficiency and productivity of the on-call teams. By implementing a simple checklist, we have been able to significantly reduce the number of routine tasks that are left to the on-call team and maximise the number of decisions that are made about a patients' care by their usual team.

References

1. New evidence of worse outcomes for weekend patients reignites call for seven day hospital services; BMJ 2012;344:e892
2. Freemantle N, Richardson M, Wood J, Ray D, Khosla S, Shahian D, et al. Weekend hospitalization and additional risk of death: An analysis of inpatient data. J R Soc Med February 2012 vol. 105 no. 2 74-84.
3. Macdonald H. Dangerous weekends – more complicated than just a lack of consultants; BMJ Group blogs; 29 Nov, 11| by BMJ Group.
4. Inside your hospital. DR FOSTER HOSPITAL GUIDE 2001–2011; <http://drfosterintelligence.co.uk>
5. Govier M, Medcalf P. Living for the weekend: electronic

- documentation improves patient handover. Clin Med. 2012 Apr;12(2):124-7. Clinical Medicine 2012, Vol 12, No 2: 124–7.
6. Al-Lawati JA, Al-Zakwani I, Sulaiman K, Al-Habib K, Al Suwaidi J, Panduranga P, et al. Weekend versus weekday, morning versus evening admission in relationship to mortality in acute coronary syndrome patients in 6 middle eastern countries: results from gulf race 2 registry. Open Cardiovasc Med J. 2012;6:106-12. Epub 2012 Sep 7.
7. Palmer WL, Bottle A, Davie C, Vincent CA, Aylin P. Dying for the Weekend: A Retrospective Cohort Study on the Association Between Day of Hospital Presentation and the Quality and Safety of Stroke Care. Arch Neurol. 2012 Jul 9:1-7. doi: 10.1001/archneurol.2012.1030. [Epub ahead of print].
8. Barba R, Zapatero A, Losa JE, Marco J, Plaza S, Rosado C, et al. The impact of weekends on outcome for acute exacerbations of COPD. Eur Respir J. 2012 Jan;39(1):46-50. Epub 2011 Jun 9.
9. Aujesky D, Jiménez D, Mor MK, Geng M, Fine MJ, Ibrahim SA. Weekend versus weekday admission and mortality after acute pulmonary embolism. Circulation. 2009 Feb 24;119(7):962-8. Epub 2009 Feb 9.
10. General Medical Council. Good medical practice. London. General Medical Council. 2013
11. Foundation Programme Curriculum, June 2007. www.foundationprogramme.nhs.uk/pages/home/key-documents
12. Roughton VJ, Severs MP. The junior doctor handover: current practices and future expectations. J R Coll Physicians Lond. 1996 May-Jun;30(3):213-4.
13. Aylin P, Alexandrescu R, Jen MH, Mayer EK, Walport, Bottle A. Day of week of procedure and 30 day mortality for elective surgery: retrospective analysis of hospital episode statistics. BMJ 2013;346:f2424 (Published 28 May 2013).
14. Curtis O, Fisher R. BMJ Quality Improvement Programme. Improving medical SHO weekend handover at a tertiary referral centre, BMJ Qual Improv Report 2013;2:1 u697.w971 doi:10.1136/bmjquality.u697.w971
15. Manjunath A, Srirangam S J. Shorter shifts and more frequent handover. BMJ. 2010; 341: c4858
16. Din N, Ghaderi S, O'Connell R, Johnson T. Strengthening surgical handover: Developing and evaluating the effectiveness of a handover tool to improve patient safety. BMJ Qual Improv Report 2012;1: doi:10.1136/bmjquality.u492.w164

Declaration of interests

Nothing to declare.

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