Aims

- From next-day ‘post-take’ ward-rounds, we have moved to ‘hot’ consultant-reviews. Can we still afford to waste crucial resources and time in repeating junior-doctor clerking and nursing assessments separately by ED and AMU staff in separate ED and AMU documents?
- This revolutionary project will implement, in structure and process, a single assessment and documentation of clinical-presentation once only, instead of performing and documenting patient-reviews each twice by doctors and nurses.

Methods

ED-referrals between 9 am to 5 pm on pilot (trial) day clerked once-only on single document were reviewed, and compared with conventional double-clerking.

126 case-notes were reviewed. 61 from pilot-day Monday 18th June 2012 and 65 case-notes from control-days 11th and 25th June, both adjoining Mondays to exclude bias from differing weekdays and duty-consultants.

Results

- Clear improvement by demonstrating reduction in ‘time to acute-medicine-consultant’i, ‘time to first doctor’ and ‘time to first treatment’.
- The reduction in variation in ‘time to first doctor’ also demonstrates quality-improvement by standardisation.
- The mean time to acute medicine consultant review improved from 640.2 minutes to 416.1 minutes. These mean values were calculated using statistical process control formulae on spreadsheet data-points, and are different from those on charts below.

Explanation

Control charts show favourable special-cause variation during intervention (18 June) which is statistically-significant with 14 consecutive data-points below mean (in-red) in figure 1 and reduced variation of data-points in figure 2.

Although relatively small, patient numbers are sufficient for an initial pilot in an iterative Plan-Do-Study-Adjust (PDSA) cycle of quality improvement which uses principles of analytical statisticsii unlike traditional enumerative statistics. However, to gain even more stakeholder-confidence before full implementation, next bigger PDSA-cycle of implementation is planned using electronic-documentation which will be phased on 30th September 2015. Previous similar smaller pilot was conducted with philosophy of integrated Emergency and Acute Medicine.

Time to acute medicine consultant review (minutes) – figure 1

Conclusions

This removal of duplicating step in value-chain as per Lean principles, leads to quality improvement in both ED and AMU (acute care hub) and large financial savings by improving—

1. Patient-flow – improved real-time-bed-occupancy and length-of-stay leading to early supported discharge.
2. Clinical effectiveness – improved ‘time to acute medicine consultant review’ and human-resource utilisation.

Glossary to improvement science terminology used

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>Enumerative statistics</td>
<td>A study where actions is taken on the material in the frame being studied. Power lies in the number of subjects studied.</td>
</tr>
<tr>
<td>Analytical statistics</td>
<td>A study where actions is taken on the process that produced the frame being studied. Power lies in repetition of appropriate PDSA cycles.</td>
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<td>Control charts</td>
<td>Time-series charts looking at whether variation in a process is in statistical control.</td>
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<td>Special-cause variation</td>
<td>When the variation in a process goes outside of expected ‘common-cause’ variation.</td>
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<td>Lean</td>
<td>The culture of relentless elimination of ‘waste’ to ensure all the services provided are safe, high quality, available at the time it is required and delivered at the appropriate cost. It is also about developing people to problem solve everyday to pursue perfection.</td>
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References


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