

Attaining a 90 Minute Length of Stay – Ambulatory Care Redesigned

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Aim:

In recent years the NHS has seen a dramatic rise in the number of inpatients and subsequent bed occupancy levels¹. This has resulted in an unprecedented operational challenge. In response to these pressures there is increasing evidence that Ambulatory Emergency Care (AEC) services can play an instrumental role in the reduction of the inpatient burden², while improving patient management and experience.

The AEC ethos of identifying and managing patients with acute medical conditions without the need for overnight admission is the key to this benefit³. Estimates show AEC manageable conditions treated through conventional streams account for up to £1.42 billion⁴, and the use of AEC for these conditions could reduce overall cost to the NHS⁵.

The James Paget Hospital is a local district general hospital with a patient catchment of 240,000. The limited AEC service previously in place was not capable of meeting demand and so presented an opportunity for a fundamental re-design of the patient management streams and formation of the new Ambulatory Care Unit – AmbU.

Method:

The new AEC pathways were designed following multi-stakeholder input utilising evidence based methodology to define “value” in the process and then optimise the process around this. Point of Care Testing (POCT) was noted at an early stage to be an enabler for the process.

Multi-disciplinary Project

The core project team originated from multiple clinical backgrounds and expertise with a executive project sponsor. This equal stakeholder input approach allowed all ideas to be explored and validated as well as having several project owners to disseminate the core values to others more peripherally involved.

POCT

When beginning the process of redesigning the ambulatory care pathways, it was evident at an early stage that utilising POCT diagnostics could hold the key to significantly reducing the overall patient length of stay (LoS). POCT give benefits in the time to clinical review⁶ however, when used in isolation this and other benefits are rarely realised. For this reason it was integrated into the whole process change as the enabler in the pathway. We used a multi-device platform, following a working agreement with Abbott Point-of-Care, including the I-STAT, Emerald CEL-DYN and Radiometer AQT 90 platform.



Demand and Process Activity Mapping

In conjunction with Operasee the trust-based project team undertook exercises including extensive project planning, stakeholder salience analysis and ‘process activity mapping’ (PAM) to understand how the current system actually worked; in turn identifying an evidence-based ideal future-state, capable of fulfilling demand and leverage points on which to focus (such as POCT) to catalyse change⁷.

Failure Mode Effect Analysis (FMEA)

FMEA was used to provide evolving process governance; obtaining multiple stakeholder input to identify, quantify, prioritise and resolve potential issues in terms of severity, occurrence and detection adding additional items as and when identified⁸. By using these methods “value” for the process was defined as patient

length of stay (LoS), and we were able to focus the process pathways of this priority, while still providing safe, patient centered and efficient care.

The new AEC pathways were designed to specifically meet these goals and used expedited investigations, including POCT, appropriate treatment/discharge planning, early senior clinical decision maker input and condition-specific management algorithms⁹. Following the process designs and 3 month pilot period was undertaken.

References:

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Declaration:

The project was partly sponsored by Abbott Point-of-care and supported by Operasse

Results:

The 3 month trial period showed the following results:

3 Month Pilot Data

	Month 1	Month 2	Month 3
Total Patients	101	143	181
Average patients per day	5.05	6.5	9.05
Mean LoS (minutes)	127	161	150
Median LoS (minutes)	70	120	120
Same-day discharge rate	88.12%	85.31%	81.77%

- Reduced LoS in the AMU from 1.04 to 0.8 bed days
- LoS reduced by 40.8% from 250 minutes to 110 minutes.
- only 26.06% patients seen through AmbU
- 8.93% decrease in 1,2 and 3 day LoS admissions - equating to 59 bed days in 3 month pilot.

Following the success of the pilot, the service was continued while awaiting further developments and business case finalisation

Current State:

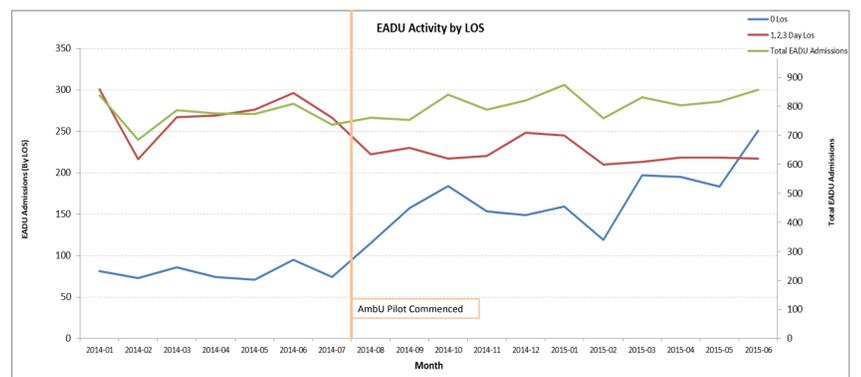
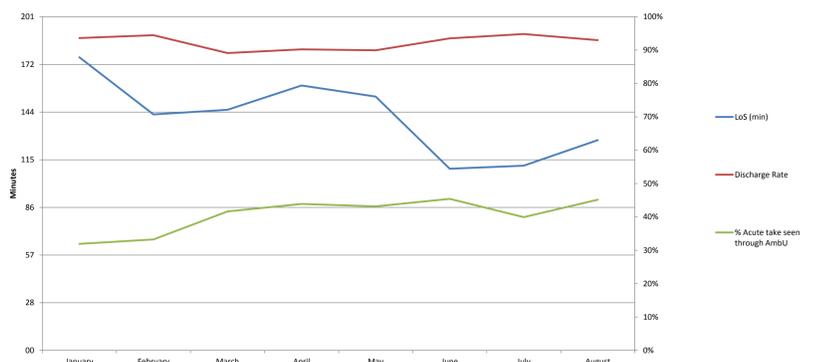
Current State Data

- 56.4% reduction in LoS
- No increase in demand
- Static readmission rates
- 93% same day discharge rate
- 30-50% of daily available acute medicine “take” seen through AmbU
- Decreasing LoS
- Under 10 minutes to initial review
- Under 1 hour to Senior Clinical Decision maker review
- Positive patient feedback

	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15
Total Patients	172	145	239	215	189	247
Patients per day (Average)	8.2	7.6	11	10.2	9.9	11.2
Mean LoS (min)	177	142	145	159	153	109
Median LoS (min)	135	100	111	120	108	84
Same day discharge rate	94%	94%	89%	90%	90%	94%
Percentage of Acute Medical Take	32%	33%	42%	44%	43%	45%
Time to Initial review (min)	14	9	4	7	11	4

- 79% “extremely likely” to recommend the service, 21% “likely” (based on those surveyed in “friends and family test”)

LoS compared to Discharge rate and % of take seen 2015



Discussion:



The process change here with the integration of POCT and early senior clinical decision maker input have shown a dramatic performance, cost and patient benefit to the acute medical services at the trust. We have seen some difficulty in releasing the direct financial implications due to the complexities of the NHS system, but as a direct result of AmbU 15 medical escalation beds have been removed from the trust with their subsequent availability for elective work. Our performance metrics show that we have

achieved, and can continue to improve, reduced LoS for medical patients. This whole process, including POCT, can then be further escalated to new areas within acute medicine and front door services, the whole hospital and potentially into the community.

The overall changes to process and adoption of the ambulatory model, along with evidence based service redesign and integration of POCT, has allowed us to provide emergency medical patients with efficient, safe, patient centered, high quality care.