**FINAL September 2021**

**Clinically developed Acute Medical Referral List saves clinical time and**

**improves patient experience**

**Client profile**

* Bolton NHS Foundation Trust, North West England
* Provides patient care at Royal Bolton Hospital, as well as in the community at health centres and clinics, district nursing and intermediate care
* 580 beds
* Serves over 300,000 people in Greater Manchester and provides specialist services to a wider catchment area.
* Average of 400 A&E attendances and 60 admissions a day
* Annual average of 84,500 admissions
* Rated ‘Good’ overall by the regulator, the Care Quality Commission.

1. **Allscripts Solutions**
2. Allscripts SunriseTM EPR and Allscripts EDMS

* **Flexible and usable**

Sunrise EPR provides greater integration, allowing clinicians at the trust to create an electronic patient list to identify and track referrals and admissions from multiple streams.

* **Improved clinical and patient outcomes**

A 34% (4 hours 58 minutes) reduction in waiting time to see a senior decision maker clinician as well as a 19% length of stay reduction anticipated to save more than £3 million annually.

* **Spread of innovation**

Approved to extend to all specialities with acute admissions across the hospital and to support other NHS organisations to implement.

**Introduction**

Bolton NHS Foundation Trust implemented the Allscripts Sunrise Electronic Patient Record in October 2019, with the ambition to provide a full EPR as quickly and effectively as possible. While some trusts select a slower, more modular implementation, Bolton opted for the full suite, rolling-out all modules to all inpatient departments in a single activation.

The flexibility of the system has enabled Dr Nithin Narayan, a Consultant in Acute Medicine, and his colleagues to design and implement an Acute Medical Referral List within the EPR resulting in substantial benefits including reduced length of stay and a significant decrease in waiting times for clinical review, hence increasing speed of diagnosis and reducing delays to care.

**The need for an Acute Medical Referral List**

“*Allscripts is really good as we can make changes and we have a team that is capable of adapting it.*

*Everything has been available in the system – unlike other systems we have worked with in the past.”*

*Configuration analyst, Shaahid Amla*

For Dr Narayan, the introduction of an EPR had already improved patient flow in the hospital. It helped limit silo working and supported the ability of teams to work across multiple areas. It has also helped to develop the informatics skills of clinicians, enhancing the digital competency in the hospital and supported improvements in consistent evidence-based patient care and the efficiency of that care.

However, one of the biggest challenges facing the trust, especially as the Covid-19 pandemic began to unfold, was the volume of work, the increased acuity of admitted patients and an increased range of locations those acute medical patients were admitted to. Relying on a 24-hour team, with handover multiple times during the day, meant they needed a robust system where they wouldn’t lose information and be able to easily identify and track a patient, their clinical progress and location on their hospital journey.

The flexibility within Sunrise allowed Dr Narayan to consider the use of an electronic patient list in order to provide an up to date overview of acute medical patients. By utilising data already available in the system it reduced duplication, improved quality, saved time and reduced the risk of error in creating and maintaining paper lists.

**Under the shadow of Covid-19**

Dr Narayan explains: “Our patients are admitted through multiple referral routes – either through the Emergency Department, from primary care, through clinics or admitted directly through ambulatory care – both planned and unplanned. At any one time, patients who need care can be in any number of locations across the hospital with varying degrees of serious illness. Tracking the clinical progress of each admission relied on multiple complex systems and non-automated tracking boards. Consultants were unable to prioritise who should be reviewed next, and since the paper lists were inevitably out of date, multiple calls would be required to track the latest referrals and changes in patient locations, whilst they rushed between three or four clinical areas. During Covid, this was exacerbated, and we often spent valuable minutes trying to track down the next acute unwell patient to see.

“We were all walking around with little pieces of paper in order to try and keep on top of our lists. I’ve lost track of how many times people asked me where a patient was, or the calls I received from the nurses to ask when a patient would be seen. It was incredibly inefficient, and issues were arising.”

**Keeping on target**

“We used to rely on multiple systems and avenues to try and keep track of where a patient was in their journey.

There was potential for failure at every level.

It was most obvious over the weekend when patients could go off radar if they got admitted directly to a speciality ward.”

Junior Doctor, Huw Skiplorne,

The added burden of increased admissions across widespread locations led to a fall in operational targets adapted from the national clinical quality indicators set by the Society for Acute Medicine.

The national adapted target waiting times for review by a clinical decision maker (junior doctor) and senior decision maker (medical consultant) are 4 hours and 14 hours respectively. Prior to implementation, the average waiting time for a review by a clinical decision maker was 2 hours 23 minutes, with 81% of medical referrals seen within 4 hours. The waiting times for a review by a senior decision maker were significantly worse, with an average of 14 hours 25 minutes and only 49% of medical referrals seen within 14 hours.

**Developing a clinically led solution**

Dr Narayan credits Sunrise for providing the flexibility to build the list, without limitations and technical restrictions. More importantly, since it was the tool used to document all clinical findings and activity, the key data needed to optimise the team’s workflow was already in the system and did not require clinicians to enter extra data or duplicate data to ensure timely visibility of the entire patient cohort.

Dr Helen Craggs, a junior doctor at the trust adds: “The best thing about Sunrise is the integration and being able to do everything in one place. It is such a hassle when needing to work across multiple platforms. Generally, it has transformed the way we do clinical care. It also allows you to access a lot of data which means you can manipulate it and extract what you need.”

Dr Narayan’s aim was to provide automation and integration into the EPR, which everyone was accustomed to using, adapting existing processes rather than trying to introduce something new.

The list collates acute medical referrals, from all sources, without having the need for a clinician to go find them. The team has iterated the key data elements displayed on the list to maximise their efficiency. This includes patient demographics, location, NEWS2 score, clerking notes, expected discharge and clinical comments. Once the configuration team had pulled-together a version, the clinical team set about rolling it out further. The list was adaptable to meet individual needs and further clinical data was just a click away.

Dr Craggs supported the training and worked with Dr Narayan to gather data and understand the scale of the issues affecting clinicians. She also supported the education and communications to launch the list.

“The adoption by consultants was good as they could understand the impact it would have on their roles straight away. Junior doctors needed a little support as their part required manual input, but we worked through it,” Dr Craggs says.

Dr Narayan, says that it was a simple process for referrers and that, “they could all see the benefit. As the ability to see the referral, and track its progress live was a massive bonus. It ultimately created a single, unified list and removed the potential for human error.”

Another junior doctor, Dr Huw Skiplorne, who now works within the Clinical Assessment Unit (CAU) and ensures everyone on call is using the list, said that communication has been dramatically improved and that clinicians can communicate via the list.

He says: “The list not only shows you where a patient is but provides some control over teams – it actually doubles up as a tool for workforce planning. It allows the registrar to have oversight and ownership of what is happening in the hospital and share that information electronically.”

**Top of the list**

Five months after implementation, and compared to audited data from February 2020, the trust has seen unprecedented gains. The review by a senior decision maker showed the greatest clinical improvements, with a 34% or 4 hours 58 minutes reduction in waiting time, from an average waiting time of 14 hours 25 minutes to 9 hours 27 minutes, with a 51% increase in reviews within 14 hours of medical referral and 66% increase in reviews on the same day as the medical referral.

This was especially evident over the weekends when patient flow can be slower, with a 4 hour 52 minutes reduction in the average waiting time for senior decision maker reviews, equating to an 81% increase in the proportion of patients reviewed within 14 hours.

The average waiting time for a review by a clinical decision maker dropped from 2 hours 23 minutes to 2 hours 10 minutes, with 86% of medical referrals seen within 4 hours, compared to the 81% pre-implementation. Over the weekends, the reduction in waiting time was more significant, from 3 hours 27 minutes to 2 hours 35 minutes, equating to a 13% increase in the proportion of patients reviewed within 4 hours.

**Unexpected benefits**

There were also ongoing concerns of delays in patient care when patients were transferred to the Acute Medical Unit prior to being seen by a clinical decision maker. These patients were being missed, as the Acute Medicine team were unaware they were waiting a clinical review. On average this cohort of patients waited 6 hours 24 minutes for a clinical decision maker, which was significantly higher than the overall average of 2 hours 23 minutes. Since implementation, the average waiting time for these ‘missed patients’ has reduced by 42% or 2 hours 40 minutes.

The trust has also seen a positive impact on measurable clinical outcomes across the hospital. It has provided bed managers and discharge teams with more clinical information, supporting getting the right patient to the right ward and allowing for earlier discharge planning. Post implementation there was a 19% (or 1.3 days) reduction in hospital length of stay. Annualised for 12,000 acute medical admissions, this equates to a reduction of 15,600 total occupied bed days and potential financial saving of £3.12 million.

Clinical audits from smaller samples of patients pre and post implementation showed a reduction in inpatient and 30-day mortality of 13.5% and 57% respectively.

Dr Narayan, adds: “The data speaks for itself but the qualitative benefits need to be emphasised too. The ability to manage your workload without constant interruptions, the reduction in having to repeat information and the fact our pagers don’t go off as often make our shifts significantly less stressful.

“It is also great not having to apologise to patients all the time for the delay in being seen and knowing that they are not waiting in a bed somewhere getting frustrated.”

**The start of system wide culture change**

The trust directors have approved the implementation of similar Patient Referral Lists across all specialities in the hospital. The Clinical Assessment Unit and A&E teams have since designed and implemented dedicated patient lists to track their admissions. Dr Narayan is also currently working with the surgical team to implement an Acute Surgical Referral List to track surgical and urological admissions.

Dr Narayan is hopeful that this implementation will motivate other NHS trusts to create comparable systems, leading to a system-wide culture change and improvement in patient safety. The team has already shared best practice on the positive clinical impacts with over 1,000 international delegates at the Society for Acute Medicine virtual conference.

He concludes: “For the end users, the clinicians, nurses and allied health professionals, the electronic list has significantly improved safety, visibility, traceability and continuity of care. They no longer rely on multiple inaccurate paper lists, which can easily be misplaced. Rather, a live system that integrates into the patient's clinical record and clinical observations, allowing for shared clinical responsibility across the team.”