A Quality Improvement Project to Shorten Time Taken to Make Decisions at an Endocrinology Clinic Using Signposting to Facilitate Pre Clinic Investigations: Sharing the Experience of Evidence Based Intervention Through Shared Leadership and Effective Team Work Across Organisations

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Abstract: Timely decision-making in outpatient endocrinology clinics is essential for optimizing patient care and resource use. This quality improvement (QI) project aimed to reduce the time taken to reach clinical decisions by introducing a signposting system to facilitate pre-clinic investigations. The intervention was developed and implemented collaboratively across organisational boundaries, using evidence-based improvement methods and shared leadership principles. A multidisciplinary team—including clinicians, administrative staff, and laboratory services—mapped current workflows, identified delays, and co-designed a streamlined signposting process to ensure necessary investigations were completed before appointments. Implementation involved iterative Plan-Do-Study-Act (PDSA) cycles, staff training, and continuous feedback. Post-intervention data demonstrated a measurable reduction in decision-making time within clinics, improved patient flow, and enhanced staff satisfaction. The project highlights how shared leadership and effective teamwork can drive sustainable improvements in care delivery across complex healthcare systems, ensuring that evidence-based interventions translate into meaningful operational and clinical outcomes.

Keywords: *Referral to Treatment; Hypercalcaemia; Endocrinology; Pareto Analysis; Plan do Study Act (PDSA).*

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I. INTRODUCTION

Timely clinical decision-making is fundamental to safe, effective, and patient-centred outpatient care. In endocrinology, consultations depend heavily on laboratory and diagnostic results; when these are unavailable at the point of care, decisions are delayed, clinic capacity is reduced, and patients often require repeat visits. Such inefficiencies place additional strain on already pressured healthcare systems and undermine both patient experience and workforce satisfaction.

Quality improvement literature emphasises that sustainable change requires system-level thinking, multidisciplinary collaboration, and iterative testing of interventions. Pre-visit planning and workflow redesign have been shown to improve clinic efficiency and care coordination, particularly in specialties reliant on investigations. Shared leadership approaches further enable cross-organisational collaboration, ensuring that change is co-designed and embedded into routine practice.

This project sought to address delays in decision-making within outpatient endocrinology clinics by implementing a structured signposting system to ensure completion of pre-clinic investigations. The aim was to streamline care pathways,

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improve clinic flow, and enhance the quality and timeliness of clinical decision-making.

II. ETHICAL APPROVAL

Three audits were done with the approval and guidance of the audit department of the Sherwood Forest Hospitals (SFH), adhering ethical principles.

➢ *Context*

Referral to Treatment (RTT) pathway of 18 weeks is a right to the patients under the National Health Services (NHS) Constitution to access services within maximum waiting time.[1]

Hypercalcaemia is common finding at primary, secondary and emergency care services. Primary hyperparathyroidism and malignancy accounts for 90% of the cases.[2] Pre clinic investigations are known to accelerate decision making, reduce delays and improve patient and staff experience.[3]

➢ *Issue*

Previous audits, completed in 2015[4] and 2018[5] respectively, identified that adherence of RTT standards among hypercalcaemic patients from GP to endocrinology clinic did not meet standards. Prolonged referral to decision time at the endocrinology clinic was one of the major determinants for the delay.

➢ *Assessment of the Issue*

First two audits were designed as work place studies to assess the patients' journey through referral to treatment pathway, starting from the date of GP's referral with high calcium and ends in the date of hyper parathyroidectomy.

Table 1 Comparative Analysis of the RTT Pathway- First and Second Audit

Audit	Data collecting period	Sample size	Number of GP referrals	RTT Pathway Adherence
1st	01/04/2013-31/08/2015	33	27	1(3.7%)
2nd	01/01/2018-31/08/2018	25	21	2(9.5%)

Hypercalcaemic patients due to primary hyperparathyroidism referred to day case surgical unit.

Results showed adherence to RTT standard (<18 weeks) in first and second audits, out of GP referrals were 3.7 % and 9.5% respectively.

Pareto analysis identified and weighted the underlying causes for the delays in the pathway between referral of GP to decision making at the endocrinology clinic. It was found that many patients had to come for a follow up visit to determine the diagnosis, as basic investigations reports, weren't available at the first visit. This resulted in delay in surgery.

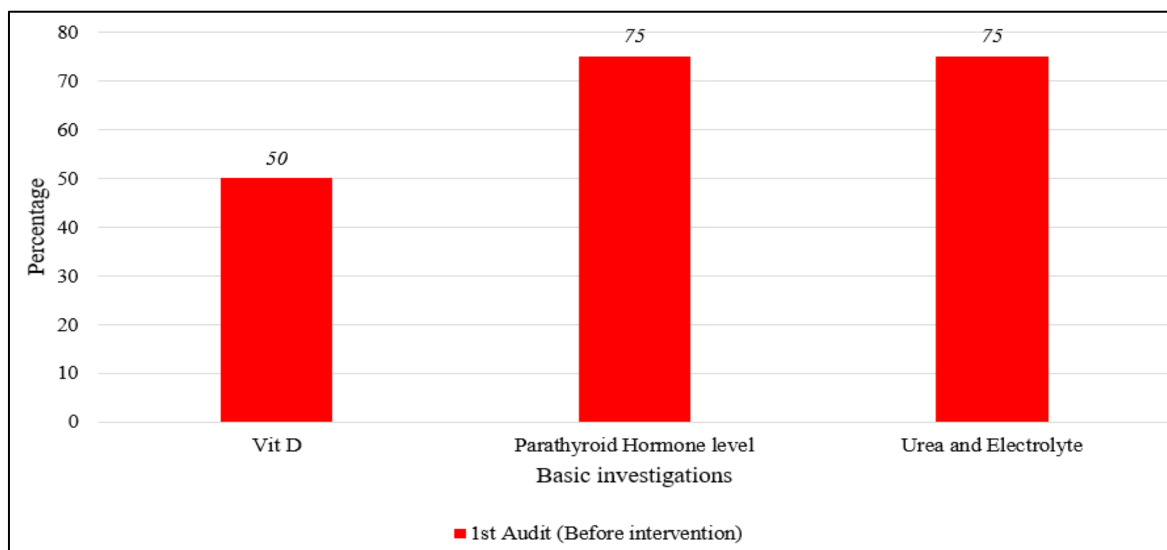

Fig 1 The Percentage of the Patients Referred by the GP with Basic Investigations.

➢ *Intervention*

As a pathway improvement project, Newark & Sherwood, Commissioning Groups (CCG) and Mansfield &Ashfield CCG leads met clinical lead of the endocrinology department of Sherwood Forest Hospitals (SFH). In that meeting it was agreed by both parties, a set of referral criteria and list of investigations that would be performed by the GPs prior to referring a patient to endocrinology clinic of the SFH for treatment.

As part of the Plan Do Study Act (PDSA) cycle the referral criteria and lists of investigations were shared among the GP leads belonged to the CCGs. Assessment component of the PDSA cycle was the third audit.

➢ *Strategy for Improvement*

Leadership and Team work were the major strategies adopted for improvement. Shared, leadership of the CCGs and clinicians of the endocrinology clinic of the SFH and team work of the GPs with the clinicians ensured common ownership of design and implementation of the intervention.

➢ *Measurement of the Improvement*

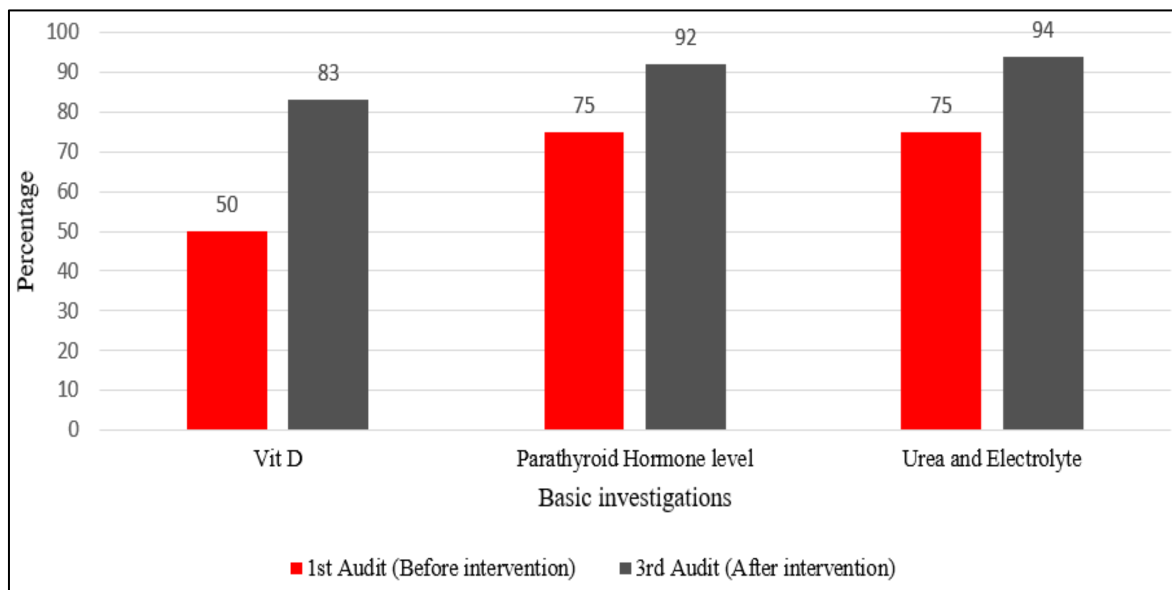

Fig 2 Percentage of Patients Referred with Basic Investigations before and after Intervention.

As seen in Figure 2, the adherence of the GPs to the proposed intervention was 83% or above in all four basic investigations.

III. IMPACT

After the intervention the referral to decision time has reduced and it would improve the RTT compliance of hypercalcemic patients.

Table 2 Comparative Analysis of Referral to Decision Making Time; all Three Audits

Audit	Number of Patients Referred by GP	Referral to decision time (Weeks)	Std. Deviation
First	27	15.02	12.82
Second	21	22.45	15.32
Third	36	7.99	5.85

The mean time measured in weeks of the GP to Endocrine Decision was 22.45, in the second audit while 7.99 weeks in the third audit which is statistically significant. (t=4.985, df=51, p=0.001, CI= 0.05).

➢ *Lessons Learnt*

Shared leadership along with effective teamwork led to improve RTT.

➢ *Message for Others*

Studying the entire pathway through the audits enable to identify the root causes for the gaps to introduce evidence-based interventions**.**

➢ *Involvement of Stakeholders*

Relevant GPs, teams of endocrinology, day case surgery, laboratory, clinical audit department of the SFH, CCGs and international research fellows attached to SFH were the stakeholders.

➢ *Conflict of Interest*

There are no conflicts of interest according to the knowledge and conscience of the authors.

IV. CONCLUSION

In conclusion, this project demonstrates that meaningful improvements in outpatient endocrinology services can be achieved when clinical efficiency is approached as a shared organisational responsibility rather than an isolated clinical task. By introducing a structured signposting system to enable pre-clinic investigations, the initiative addressed one of the most persistent barriers to timely decision-making: the absence of essential diagnostic information at the point of care.

The collaborative design and implementation of the intervention, supported by multidisciplinary engagement and iterative PDSA cycles, ensured that changes were both practical and responsive to real-world clinical workflows.

The measurable reduction in decision-making time, alongside improved patient flow and greater staff satisfaction, illustrates the broader value of integrating quality improvement methodologies with shared leadership. Importantly, the project underscores that sustainable change in complex healthcare environments depends on collective ownership, continuous learning, and open communication across professional and organisational boundaries.

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Beyond the immediate operational gains, this work offers a replicable model for other outpatient services seeking to enhance efficiency without compromising patient-centred care. Embedding evidence-based processes into routine practice not only strengthens service delivery but also fosters a culture of collaboration and accountability. Ultimately, the initiative affirms that when teams unite around a common goal and use structured improvement methods, incremental changes can yield significant and lasting benefits for patients, staff, and the wider healthcare system.

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