

## BRIEF COMMUNICATION



# Implementation of ophthalmic diagnostic hub after COVID-19 pandemic: efficiency, DNA and attendances

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## INTRODUCTION

The landscape in Ophthalmology is changing with increasing pressures on hospital-based ophthalmic services. The National Outpatient Transformation Programme [1] and RCOphth The Way Forward [2] outline the importance of reform. The diagnostic hub aims to increase efficiency by reducing patient waiting times and hospital appointments.

The literature on virtual clinics is well-established. Few dedicated ophthalmic hubs are reported on; none discuss efficiency. The most recent paper exploring ophthalmic outpatient non-attendances was in 1994 [3].

The hub at Solihull is technician-led, enabling consultants to virtually triage patients. New patients are referred via GPs or opticians and seen at the hub for routine follow-up. Referrals for a face-to-face appointment with the consultant are for urgent review or listing for treatment. Fig. 1 summarises the pathway through the hub.

## METHODS

This is a retrospective study exploring outcomes of the diagnostic hub, including overall efficiency and rates of non-attendance.

Mixed methods were used to gather data: prior to implementation across 24 months, and after across 16 months. Quantitative data including waiting list times and patient flow were obtained from informatics and our data manager through accurate weekly audits. Outcomes and patient demographics were gathered from the informatics department and patient records.

Qualitative data was collated through patient feedback forms and reasons for non-attendance from telephoning non-attenders.

## RESULTS

### Efficiency

Efficiency in healthcare systems engineering is defined as a ratio of input to output of a given system. Table 1 summarises the patient flow.

Previously, the medical retina and glaucoma clinics were seeing 247 patients monthly. After implementation, the monthly average was 646 (161.5% improvement).

Prior to implementation, the longest wait time was 925 weeks. The number of patients waiting over 24 weeks to be seen was 6000 in March 2021; after, there was a decrease of 95.3% by November 2022.

### Non-attendances at the diagnostic hub

Overall non-attendance rate at the hub over 16 months was 11.8% (average 76 per month); this is higher than other outpatient ophthalmic services (5–9.9% [3, 4]).

A sample of 893 non-attenders was telephoned. 53.1% did not answer. Of the responses received, 14% stated they had forgotten the appointment; 22% gave a reason relating to the location of the hub.

Patients living near Heartlands Hospital (BHH) accounted for 49% of overall non-attendances; of this, 82.9% have Asian ethnic background. Across all non-attenders, ethnic minorities account for 53%.

## DISCUSSION

In Birmingham, Hodge Hill and Ladywood constituencies are most deprived, whereas Sutton Coldfield (near GHH) is the least [5]. Although BHH is closer to the hub than GHH, BHH patients are nonattenders. This shows while diagnostic hubs are a workable model, health inequities still exist (affirming findings from previous studies), and further considerations need exploring (e.g., patient demographics and catchment areas) as these may have different contributory factors for non-attendances.

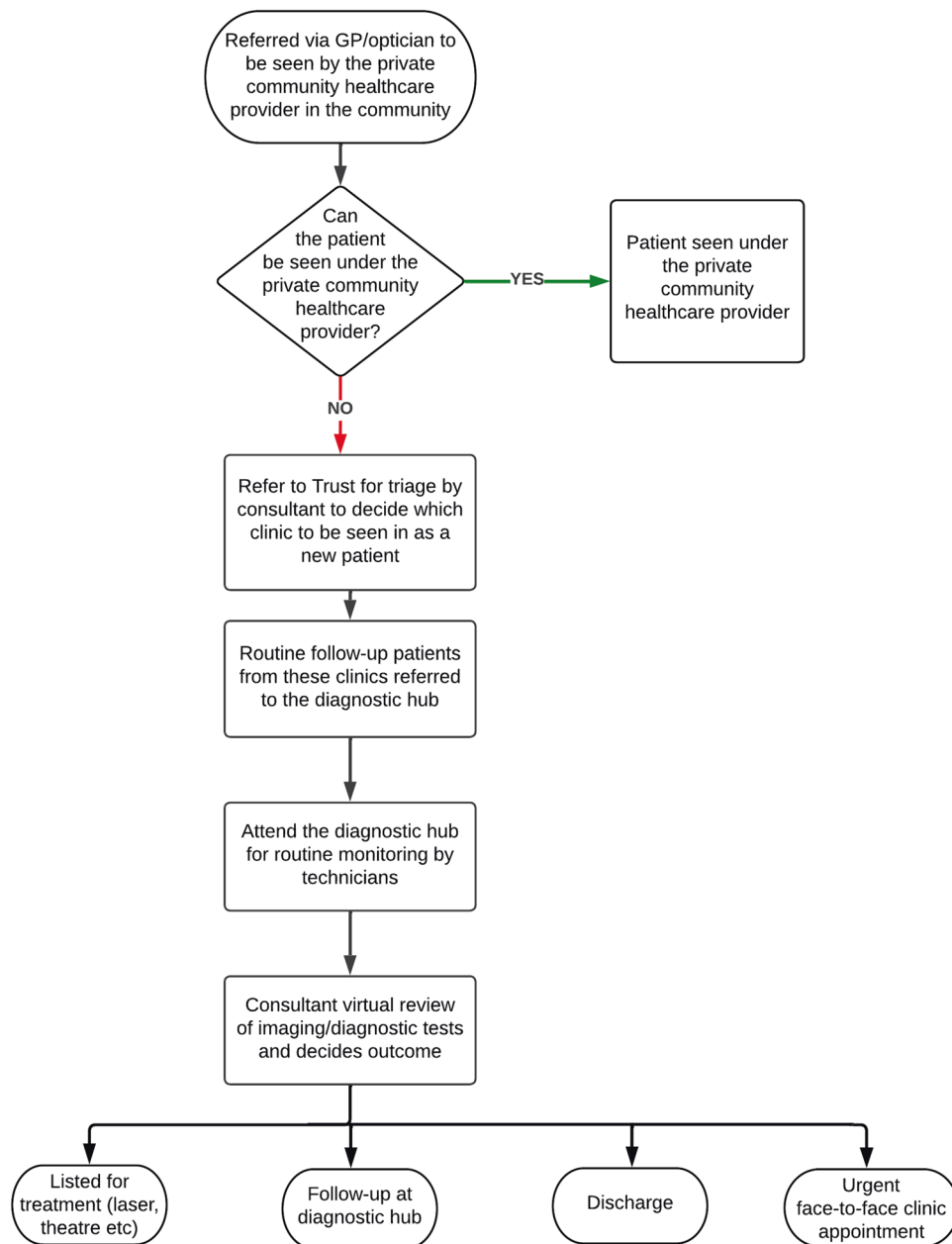
With any service redesign, the end user must be engaged with. Moving forward, we must continue engaging with the most deprived end users, corresponding with findings that index of deprivation is associated with non-attendance.

We have demonstrated that our diagnostic hub is a successful example of delivering outpatient ophthalmology services.

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**Fig. 1** Flowchart of the patient's journey into and through the diagnostic hub.

**Table 1.** Summary table of numbers of patients that were seen and did not attend both outpatient services prior to the hub's implementation and post-implementation.

	Reason for attendance	Number Seen	Number DNAs
Prior to implementation of hub	Glaucoma	2505	169
	Medical Retina	875	88
	<b>Total</b>	3362	257
After implementation of hub	Glaucoma	4220	333
	Medical Retina	5608	825
	HCQ	352	11
	Neuro	152	54
	<b>Total</b>	10,332	1223

## DATA AVAILABILITY

Data used have been processed and presented in the paper. The results show the summary of the data.

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## COMPETING INTERESTS

The authors declare no competing interests.

## ADDITIONAL INFORMATION

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