Comparison of face-to-face Treat and Extend Pathway with a modified Lean Strategy: A prospective PILOT Study at a District General Hospital

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Miguel Kurc, Annabelle Searle, Mohamed Osman, Christina Mathew, Jan Sniatecki, Areti Papzacharia, Kim Chan, Ellen Fletcher, Stuart Harper, Emily Gosse, Uma Thakur, Rashi Arora

Salisbury District Hospital

INTRODUCTION

The demand for intravitreal therapy has been on an upward trajectory since it was first approved for the management of a variety of retinal diseases not only due to a growing number of indications for intravitreal therapy but also an increasing prevalence of conditions requiring intravitreal therapy. However, the increasing demands on retinal services nationwide has not been met by a proportional rise in the financial or human resources required to meet that demand.

Therefore, the Royal College of Ophthalmologists have highlighted the need to innovate alternative retinal service models that meet the Triple Bottom Line where economic and environmental impact are minimized while service quality and patient experience are optimized. Central to this effort is the adoption of the tenets of sustainable clinical practice which include the delivery of services based on the principles of the lean model.

A prospective PILOT study was conducted at a DGH between December 2019 and March 2020 to test a locally designed 'Lean' working practice in medical retina clinics whereby patient face-to-face examination was eschewed in favour of visual acuity (VA) monitoring and remote review of OCT if indicated by safety criteria, on alternate visits to minimise consultation burden without compromising clinical outcomes in the context of a robust safety framework.

CONTACT

Ms. Rashi Arora
Salisbury NHS Foundation Trust
Email: rashi.arora1@nhs.net

METHODS

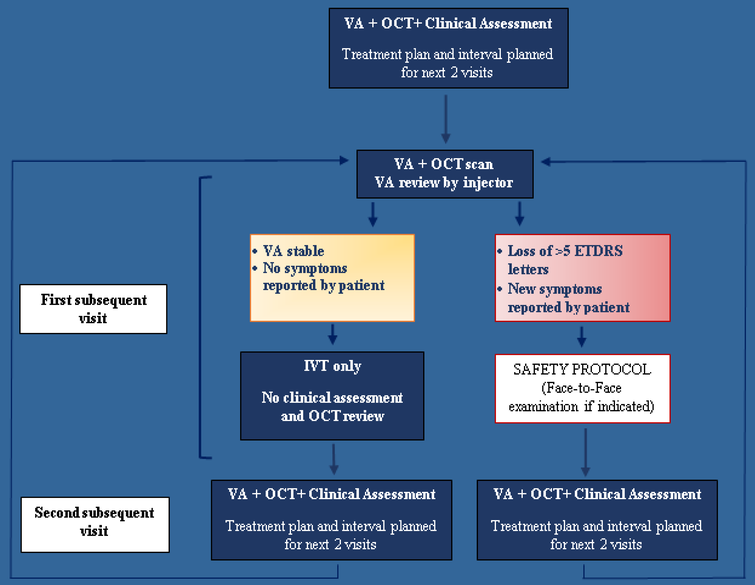


Figure 1. Proposed Lean Pathway

The service targeted patients in the second year of treatment for age-related macular degeneration and non ischaemic retinal vein occlusions who have remained stable on two or more visits and who are on the treat-and-extend pathway. These patients, selected by consultant ophthalmologists, were enlisted into the **lean macular service**.

The lean macular service functioned as a separate clinic where two designated clinical evaluators treated patients as per the traditional pathway (face-to-face clinical examination and OCT review at each visit) but compared the outcome at each visit if the lean pathway protocol (See Figure 1) was followed instead.

The primary endpoint of the study was to assess the number of patients requiring alteration of their initial management plan.

RESULTS

104 eyes (91 patients) were included in the study. Among these, the majority were treated for neovascular AMD (n=94 eyes), and the remaining were treated for retinal vein occlusion (n=12 eyes) and polypoidal choroidal maculopathy (n=2 eyes).The decision outcome of the two pathways matched in 102 out of 104 eyes.

96 eyes (92%) followed the recommended treatment plans on the lean visit. Among these, the safety protocol was triggered in 22 eyes due to objective drop in vision >5ETDRS and/or subjective drop in vision or new symptoms. However, treatment intervals were not changed on the basis of clinical examination and OCT review. (See Table 1)

8 eyes needed a modification or additional clinical assessment on the lean visit. Application of safety criteria (OCT review if objective VA drop > 5 ETDRS and/or new symptoms) was able to identify the patient group. 2 eyes (1 patient) with apparently different outcomes in the 2 pathways had an epiretinal membrane as a result of which response to treatment was variable and lean management would not have had an adverse outcome. (See Table 2)

Table 1: Analysis of eyes which continued with the originally recommended treatment plan

Objective and subjective stable vision with no new symptoms reported	74
Subjectively no drop in vision but objective drop in vision >5 ETDRS with no new symptoms reported	18
Subjective with objective drop in vision >5 ETDRS	4
1. Delay in appointment	2
2. Cataract development and dry OCT	2

Table 2: Analysis of eyes which required alteration of originally recommended treatment plan.

No objective or subjective change in vision and increased/ new activity on OCT	2*
Subjective and objective drop in vision >5 ETDRS and increased/ new activity on OCT	3*
No objective or subjective change in vision with new symptoms	3
1. Suspected GCA	1
2. Keratoconjunctivitis	2

DISCUSSION

A delay in the treatment of retinal diseases with intravitreal therapy has been found to be associated with poorer visual outcomes. Certainly, the imbalance between clinical demand and capacity in retinal services nationwide is a significant contributor to delays in treatment. Within the conventional management model, the capacity of clinics to offer face-to-face consults at each visit is a significant barrier to increasing clinic volume and in turn, reducing treatment delays.

In keeping with the principles of the lean model, the aim was to establish whether a protocol-driven reduction in those clinic reviews that do not actively contribute to value for the patient whilst continuing active treatment regimens for these patients would maintain patient satisfaction, reduce cost and shorten waiting times while maintaining patient safety and producing optimal clinical outcomes.

This study indicated that there was high statistical concordance between the conventional and lean pathways. Clinical face-to-face consults were reduced by approximately 30%. Due to a clearly defined safety protocol that identified patients requiring a consult, clinical outcomes were not adversely affected by reduced face-to-face reviews.

Since the capacity of retinal clinics to offer face-to-face consults represents a bottleneck, pursuing a lean clinical model will improve the efficiency of retinal clinics while maintaining patient safety and producing optimal clinical outcome.