

Development of eyecare services in Dominica: Past, present, and future

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Figures 1, 2: Photos of one of the four consultation rooms and the operating room at The Brenda Stafford Foundation Eye Centre in Dominica.

Dominica is a small island developing state in the Caribbean with a population of approximately 73,000 people [1] and has a long and proud history of developing eyecare services through international partnerships. This article will give you an outline of changes that have taken place through the benefits of partnerships from Canada and the UK; through the Brenda Stafford Foundation and with the VISION 2020 LINKS & Networks Programme, London School of Health & Tropical Medicine (LSHTM) which has brought positive change to eyecare services to the island.

History of eyecare in Dominica

Prior to 1985, the late Don McIntyre, a Dominican Surgeon with a diploma in Ophthalmology, provided limited eyecare, referring cases overseas as needed.

In 1985, an ophthalmology clinic was established in Dominica by the late Canadian ophthalmologist Rollande Michaud and supported by The Brenda Stafford Foundation, a charitable foundation based in Calgary, Canada. She integrated eyecare services in the primary health sector and at the Princess Margaret Hospital.

In 1992, Hazel Shillingford-Ricketts, a Dominican Physician, started her ophthalmology residency in Canada at the University of Ottawa Eye Institute, receiving financial assistance from The Brenda Stafford Foundation and the Government of Dominica. She returned to Dominica in 1996 as a Fellow of the Royal College of Surgeons of Canada, becoming the first Dominican and only ophthalmologist on the island for over 20 years. She led the development of eyecare services both in primary health where it is free, and the secondary health sector, with continued financial support from The Brenda Stafford Foundation.

Voluntary Optometric Services to Humanity (VOSH) from Michigan have provided low-cost, used spectacles and screening

for eye diseases during their annual visits since 1996. Refraction services have been provided as part of an eye examination.

In March 1997, the first organ transplant was performed in Dominica. Two patients had corneal transplant with corneas harvested locally.

During the same year, a small-scale preparation of eye drops was implemented at Central Medical Stores, Princess Margaret Hospital, funded by Pan American Health Organization (PAHO) and Caribbean Council for the Blind (CCB). It was the only one in the region that was still operating successfully until 2008. This greatly reduced the cost of eyedrops for patients.

During 1997–1999, Jennifer Morancie, a Registered Nurse in Dominica, was trained to be an ophthalmic technician at the University of Ottawa Eye Institute, resulting in doubling the number of patients seen in clinic.

In 1999, Dr Shillingford-Ricketts established a private company, Optical Services Ltd as the first automated optical finishing laboratory in Dominica. Her son, an American Board-certified optician, now manages its operations. This allowed for availability of various types of spectacles to the island population.

Early 2000s onwards...

In 2000, the World Health Organization (WHO) / International Association for the Prevention of Blindness (IAPB) initiative, Vision 2020 'The Right to Sight' was launched in the Caribbean, aimed at addressing the five main causes of preventable blindness in the region: cataracts, glaucoma, diabetic retinopathy, childhood blindness, and refractive errors.

And in 2004, under the leadership of Elise Heon, an Ophthalmologist who focuses on inherited retinal disorders from Sick Kids in Toronto, Canada, and her team, investigated the cause of a blinding retinal disorder found in Dominicans living on the

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southeast of Dominica. It was published in ARVO 2011 as the Phenotype-genotype characterization of “La Plaine Polypoidal-like macular degeneration” [2].

Public education started being provided during World Glaucoma Week, World Diabetic Day, and World Sight Day, and this led to an increased demand for eyecare and resulted in 12-month wait times for appointments. By the time people with diabetes were seen, some of them had blinding diabetic retinopathy. There was an urgency to address this problem.

In 2005, a locally developed National Diabetic Retinopathy Screening and Treatment Programme was established using an analogue fundus camera operated by a trained non-medical photographer. Dr Shillingford-Ricketts reviewed the developed fundus photos, about five per eye, to detect patients with diabetic retinopathy and schedule them to be seen at a monthly diabetic eye clinic where laser treatment was provided free. PAHO realised the usefulness, yet time-consuming and expensiveness of using analogue fundus cameras, and donated a digital fundus camera.

In 2006, Nanda Matthew was trained at the University of Ottawa Eye Institute to continue the Diabetic Fundus Photography Screening / Grading programme in the health centres throughout the seven primary health districts.

In 2015, the West Indies Glaucoma Laser Studies were launched under the leadership of a glaucoma specialist from University of West Virginia, Anthony Realini, collaborating with Hazel Shillingford-Ricketts in the private sector. It was to determine the efficacy of selective laser trabeculoplasty (SLT) as a monotherapy for open-angle glaucoma in Afro-Caribbean patients. Results revealed that SLT is efficacious in treating glaucoma in that population [3].

School health screening programmes are provided by the family nurse practitioners for all school children aged five and 11. Those with eye problems are referred to the eye clinic. And the Childhood Prevention of Blindness programme includes screening of all premature babies to detect and treat retinopathy of prematurity.

At the same time, the School Vision programme was initiated and funded by The Honorable Prime Minister, Roosevelt Skerrit, and was launched to screen all school children aged 5–18 to identify those who needed glasses. The programme was designed by Hazel Shillingford-Ricketts, managed by Joan Henry, and implemented by a visiting team from Cuba. Glasses were funded by the Government of Dominica.

All the school children were also screened for their body mass index. The rationale was to determine the prevalence of obesity in that age group which was unknown. A programme to manage childhood obesity was identified as one of our strategies to prevent diabetes mellitus and to prevent blindness from diabetic retinopathy.

Also, in 2015, the CCB, guided by Dominica’s experience, applied to the Queen Elizabeth Diamond Jubilee Trust for funding to establish a diabetic retinopathy screening and treatment programme in Jamaica, St. Lucia, Belize, and to enhance the programme in Dominica. However, in 2017 this was handed over to the VISION 2020 LINKS & Networks Programme based in the LSHTM – they were assigned to manage the programme for which funding ended in 2020.

As part of this, the LINKS Programme provided a partnership with a hospital in Brighton leading to a team of Screener / Graders, a VR surgeon and a foot expert being able to provide training services to the team in Dominica. As part of the training support in 2018, Nanda Matthew and Carlene Luke were internationally certified as screeners / graders by the Gloucestershire Hospital NHS Foundation Trust. The programme is now integrated into the Diabetic Research Network (DR NET) programme.

In 2021, as part of the LINKS & DR-NET, research was conducted in the use of artificial intelligence to screen for diabetic retinopathy in Dominica, using retinal images taken with a fundus on a phone’s digital camera. This was completed under the leadership of Cova Bascaran, DR-NET Technical Lead and Research Fellow International Centre for Eye Health, and Oliver Kemp, a student at the LSHTM. This study was published in *BMJ Open Ophthalmology* [4]. It concluded that artificial intelligence can be used for screening, but validation of use by nurses in the primary health sector is needed before it can be implemented.

Unfortunately, the diabetic retinopathy screening programme has not met its objective in the number of patients screened annually and needs to be restructured. The need to develop a diabetic register has not materialised to date.

Glaucoma is mostly detected by opportunistic screening of everyone presenting for eyecare. All glaucoma medications are included in the government’s drug formulary, therefore patients 18 and younger and 60 and older get their eyedrops free. Others get a subsidised fee. Selective laser trabeculoplasty and trabeculectomy treatment are available in Dominica.

The leading reason of overseas referral is vitreoretinal surgery. Teaching of medical interns and nurses and training for eye clinic staff is ongoing. Ophthalmology residents from Canada and the UK came to Dominica for electives, and ophthalmologists from Canada, USA and the UK have visited to assist with eye clinics.

In 2022, a milestone was achieved with the opening of The Brenda Strafford Foundation Eye Centre at the Dominica China Friendship Hospital, the public hospital in the capital city of Roseau. The new centre provides a purpose-built space with modern equipment to support high-quality eyecare services for the people of Dominica and the Eastern Caribbean.

On retirement after 26 years in the government service, Hazel Shillingford-Ricketts collaborated with Ronnie Bhola, a vitreoretinal surgeon from the Trinidad Eye Hospital in Trinidad to provide phaco small incision cataract surgery and retinal consultation in the private sector in Dominica. Cataract surgery, including phacoemulsification, is provided by ophthalmologists in Dominica. There is a backlog of patients waiting for cataract surgery because of interruption of eye services by Covid-19 pandemic, natural disasters and shortage of consumables in the public sector. This resulted in some patients having to travel overseas for cataract surgery. The collaboration was to meet that need.

Present day

In 2023, 100 cataract surgeries were performed in three sessions: one weekend in January, June and October. For the first time cataract surgeries in both eyes were performed on consecutive days. This increased the cataract surgical rate in Dominica from 2111 as obtained in the public sector to 3500 in the public, plus private sectors in 2023; the goal being 4000 per million population, which can be surpassed to prevent blindness from cataracts.

In 2024, Dr Shillingford-Ricketts was part of a joint presentation at the Royal College of Ophthalmologists Congress held in Belfast, Ireland to share this learning. She presented ‘Reducing Cataract Surgery Backlogs in The Caribbean Region Through Public/Private and Private/Private Partnerships’. Dr Shillingford-Ricketts made a second presentation on ‘Diabetic Retinopathy Screening in Dominica’ at the VISION 2020 LINKS & Networks breakfast meeting. The team working on diabetes in Dominica’ continues to be a part of the DR-NET and has access to a shared learning environment.

Currently, there are five full-time ophthalmologists in Dominica – three in the public sector, creating one of the highest ophthalmologist densities in the region: one ophthalmologist per 15,000 people. Universal eyecare continues to be provided in the

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public health sector while the private eye sector has become self-sustaining. Eye emergency services are available 24/7.

When the idea of building the Brenda Strafford Eye Centre was conceptualised in 2000, I was asked by the late Barrie Strafford, CEO of the Brenda Strafford Foundation, "What is the plan to cover the recurrent expenditure?" The answer given satisfied him as a chartered accountant so much so that he transferred the money to Dominica to fund the capital expenditure. The plan was to charge those who could afford to pay enough to cover the expenses of those who could not afford to pay. This included providing services to paying patients from other islands. This is the sustainable future of eyecare in Dominica.

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