

The Importance of Handheld Retinal Imaging in Haemodialysis Clinics

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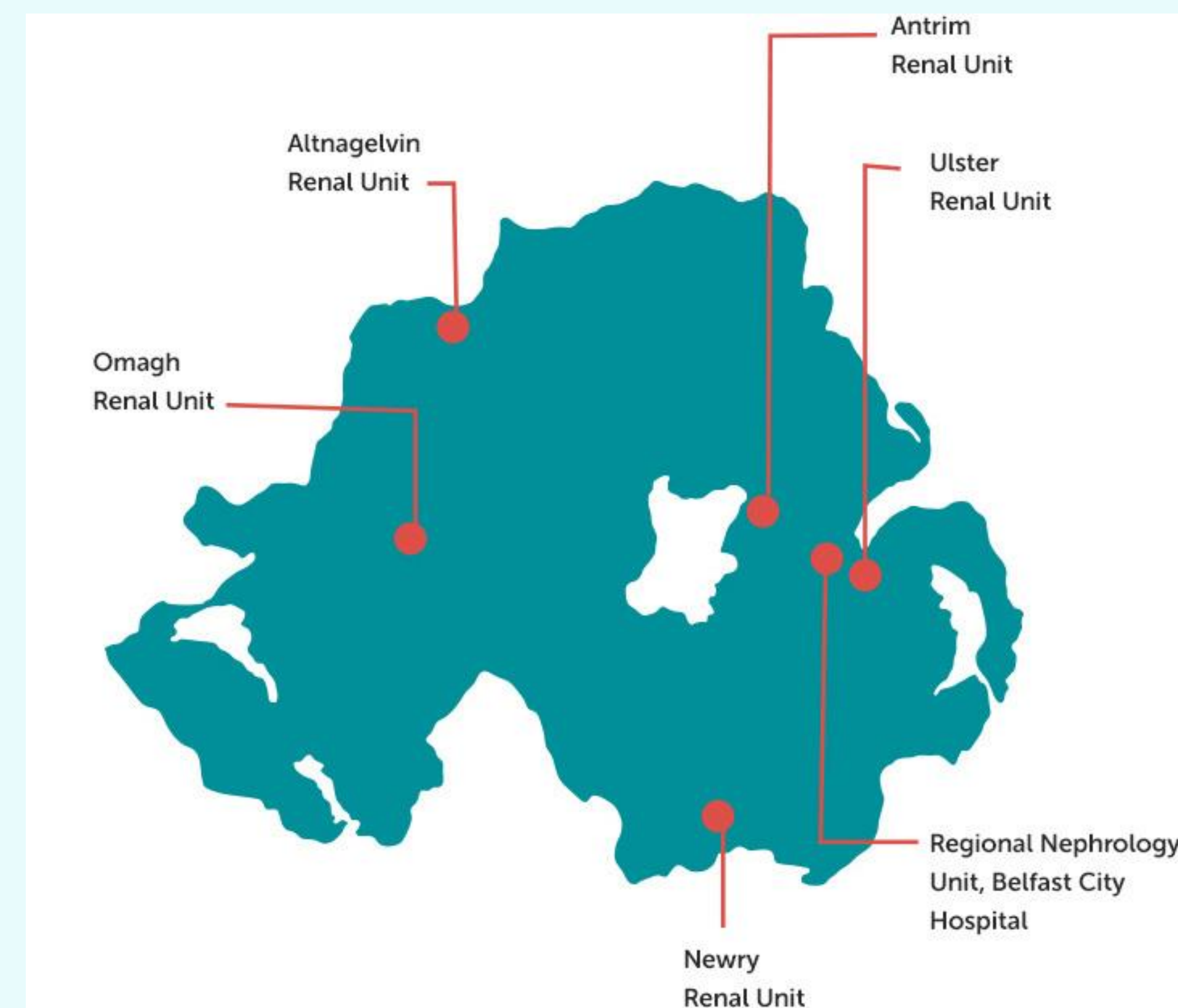
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INTRODUCTION

- There are around **112,000** people in Northern Ireland with a diagnosis of **Diabetes Mellitus**
- Of these, most will develop some kind of diabetic eye disease
- **4 in 5** with diabetes mellitus will develop **kidney disease**, some of which will require **renal dialysis**
- Many patients receiving haemodialysis **fail to attend** their diabetic eye screening appointments annually due to **co-morbidities**, personal healthcare **pressures and time constraints**

METHODS

- There are 6 renal units who offer dialysis across Northern Ireland
- All renal units were contacted to offer diabetic eye screening in the unit for all patients with diabetes
- Two trained diabetic eye screeners went to each renal unit with a non-mydriatic camera and a handheld retinal camera
- Each person had images taken on both cameras and images were graded by trained diabetic eye graders



RESULTS

- So far, 4 of 6 renal units in Northern Ireland have had diabetic eye screening sessions in the clinic.
- In total 84 patients were invited for screening, 76 attended.

Around 90% of patients were in a wheelchair when they came into the appointment, over 60% were unable to transfer to the screening chair



RESULTS

How long has it been since their last screening?

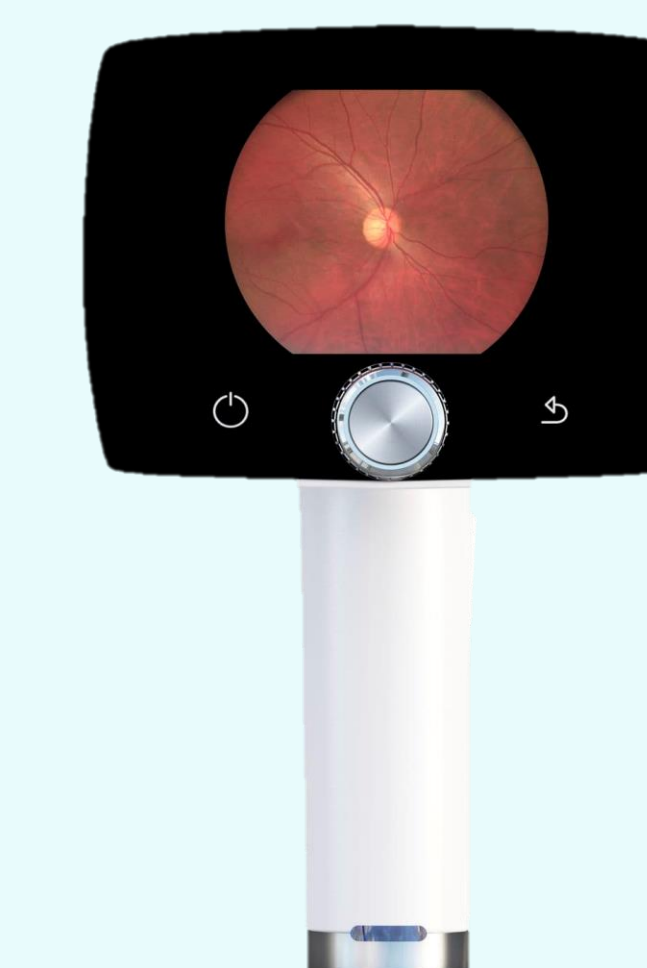
- 15% of people had never been screened before
- 11.9% had not been screened for over 5 years
- 22.6% had not been screened since 2016/2017
- Only 50% had attended screening in the last two years

Has there been disease progression?

- 21.4% of people had Sight Threatening Diabetic Retinopathy and 10.7% of people had maculopathy
- 42% of people's retinopathy in Right Eye (RE) and 42.89% in the Left Eye (LE), stayed stable since their last screening
- 3.6% of people developed maculopathy in their RE and 2.4% in their LE
- 9.5% of people were referred to slit lamp clinic
- 8.3% has ungradable images in their RE and 6% in the LE
- Other pathology included BRVO, DMO, posterior capsule thickening and suspected glaucomatous discs

Below is a table of disease progression

Progression	RE	LE
Stable	36	30
Progressed by 1 retinopathy grades	6	3
Progressed by 2 retinopathy grades	0	2
Referred to Slit Lamp	8	8



All patients were able to be screened by handheld retinal imaging camera, 4 patients were unable to be imaged by the non-mydriatic camera

Previous Screening Year	Total
Never been screened	13
2014	1
2015	3
2016	6
2017	6
2018	13
2019	24
2020	14
2021	4

CONCLUSIONS

- Handheld retinal imaging cameras could be used in haemodialysis clinics in the future
- Handheld cameras would **allow imaging during each patients dialysis session**, allowing for **better convenience and less appointments missed**
- Handheld imaging is **essential for those in stretchers** within the dialysis unit
- It could be easily implemented into Diabetic Eye Screening Programmes nationwide