

# Achieving optimal diabetes care; is it time to re-think the management of diabetic haemodialysis patients?

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## Background and Aim

Despite being the commonest cause of end stage renal failure, UK guidelines for the management of patients with diabetes on dialysis do not exist. However, all patients with diabetes are recommended to undergo routine screening for both retinopathy and foot disease at least annually. The aim of this study was to assess whether patients currently on haemodialysis (HD) with diabetes (DM) are meeting screening targets for foot and eye disease. We also aimed to assess the proportion receiving specialist diabetes care, and current drug therapies.

## Methods

We identified all patients on HD within the Glasgow Renal and Transplant unit on 22/9/2014 (7 individual haemodialysis units serving a population of approximately 1.5 million) and extracted relevant demographic and clinical data from the renal unit electronic patient record.

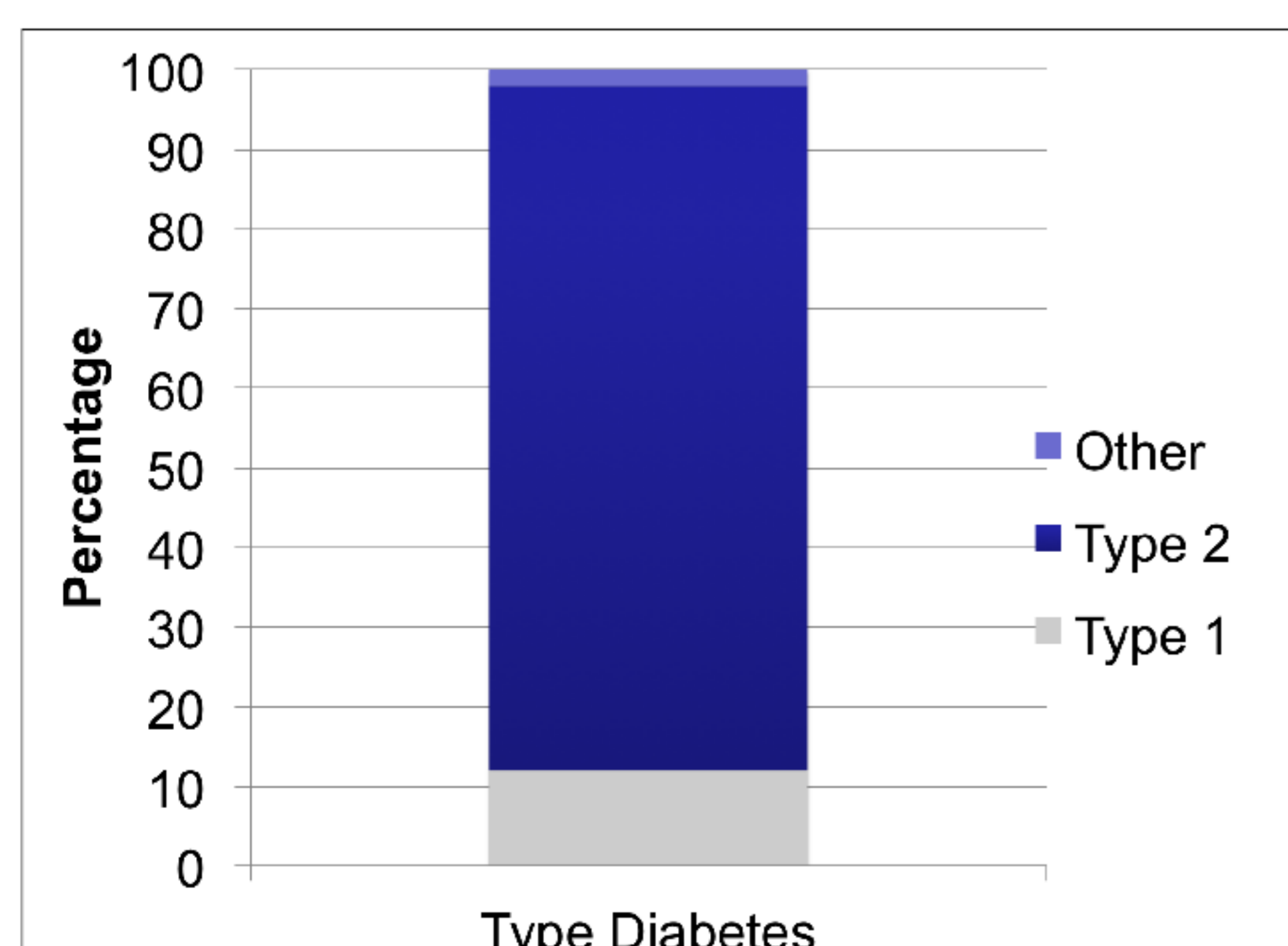
A manual search of the diabetes electronic patient record (SCI-Diabetes) was performed to obtain screening details within the last year, and recorded prescription of diabetes medication. The results were compared with those with diabetes in the same healthboard not on HD.

## Results

At the incident date, 588 patients were on HD. Patients with diabetes were significantly younger than those without diabetes and had been on dialysis for a shorter period of time. They were also significantly less likely to be on the transplant waiting list. See Table 1.

HD Patient Population	Non diabetic N=396	Diabetic N=192	p value
Mean age (SD)	51.4 (15.7)	47.3 (11.4)	0.001
Male (%)	58.3	53.6	ns
Median duration HD (days) (IQR)	973.5 (368-1650)	644.5 (242-1103)	0.000
Dialysis access (%)			
AV fistula	261 (65.9)	112 (58.3)	ns
AV graft	14 (3.5)	12 (6.3)	
Tunnelled dialysis line	113 (28.5)	64 (33.3)	
Temporary dialysis line	7 (1.8)	2 (2.1)	
Other	1 (0.3)	0	
Transplant status (%)			
Tx listed or living donor arranged	101 (25.5)	27 (14.1)	0.000
Undergoing tx assessment	20 (5.1)	7 (3.6)	
Not currently fit	14 (3.5)	23 (12.0)	
Patient declined tx	8 (2.0)	1 (0.5)	
Will never be medically fit for tx	19 (4.8)	20 (10.4)	
No entry on tx listing screen	234 (59.1)	114 (59.4)	

Table 1: Patient demographics and comparison by t-test, Kruskal Wallis test, one-way ANOVA or Chi-square as appropriate.



Of patients with diabetes, 86% had a diagnosis of type 2 diabetes and 12% had type 1 diabetes (figure 1).

Figure 1: Type of diabetes recorded.

In patients on HD with DM, 51% were prescribed insulin, 16% oral hypoglycaemic agents and 33% (n=67) were on no treatment at all. (Figure 2) The no treatment group included 20 patients in whom diabetes was the primary renal diagnosis.

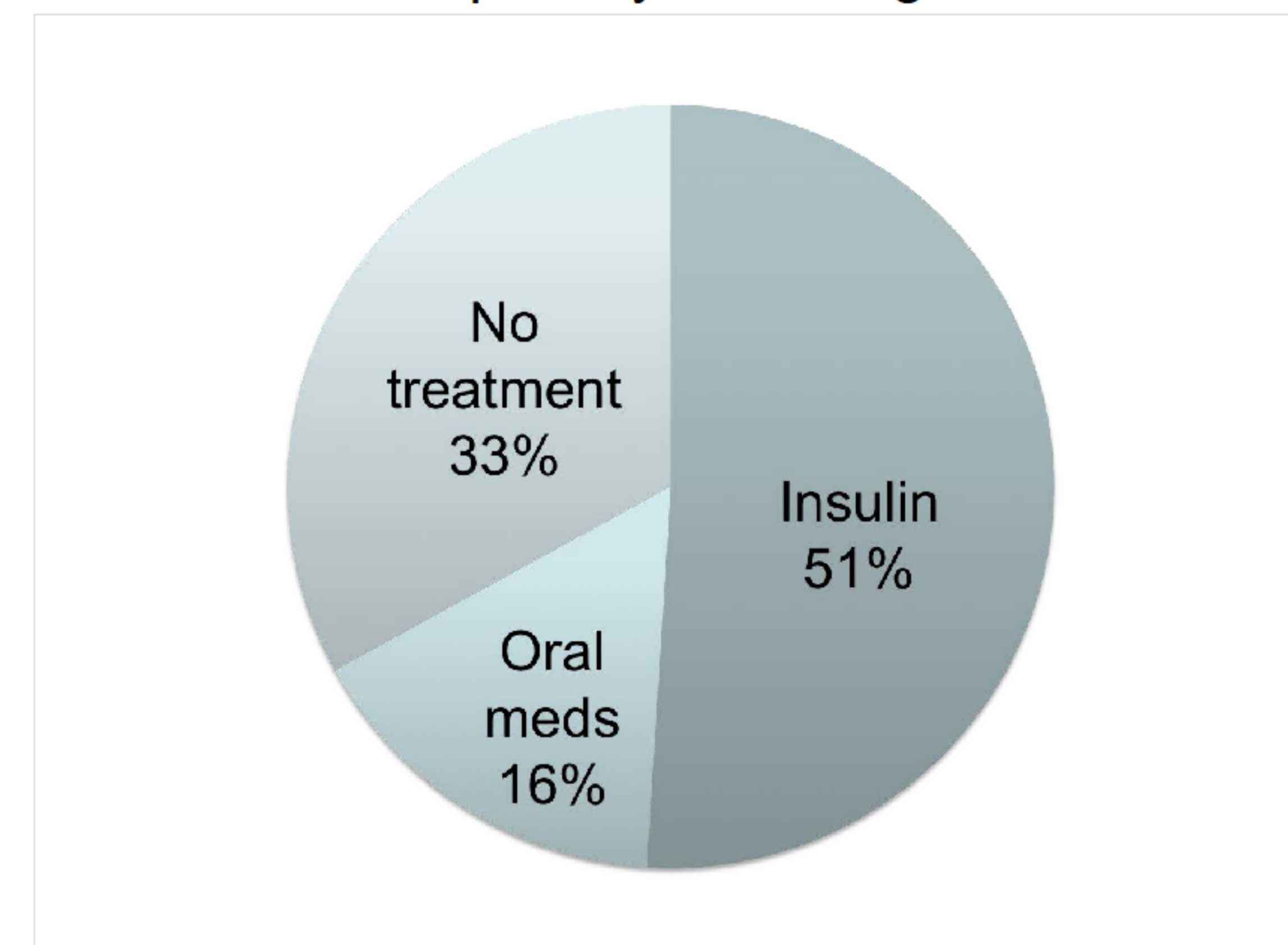


Figure 2: Recorded treatment for diabetes.

Patients on HD with DM were less likely to undergo screening of eyes or feet than patients in the same healthboard not on HD. Fewer than 80% of patients with type 1 DM on HD and only 42% of type 2 DM on HD were reviewed by a diabetes specialist in the last year. (Figures 3 & 4).

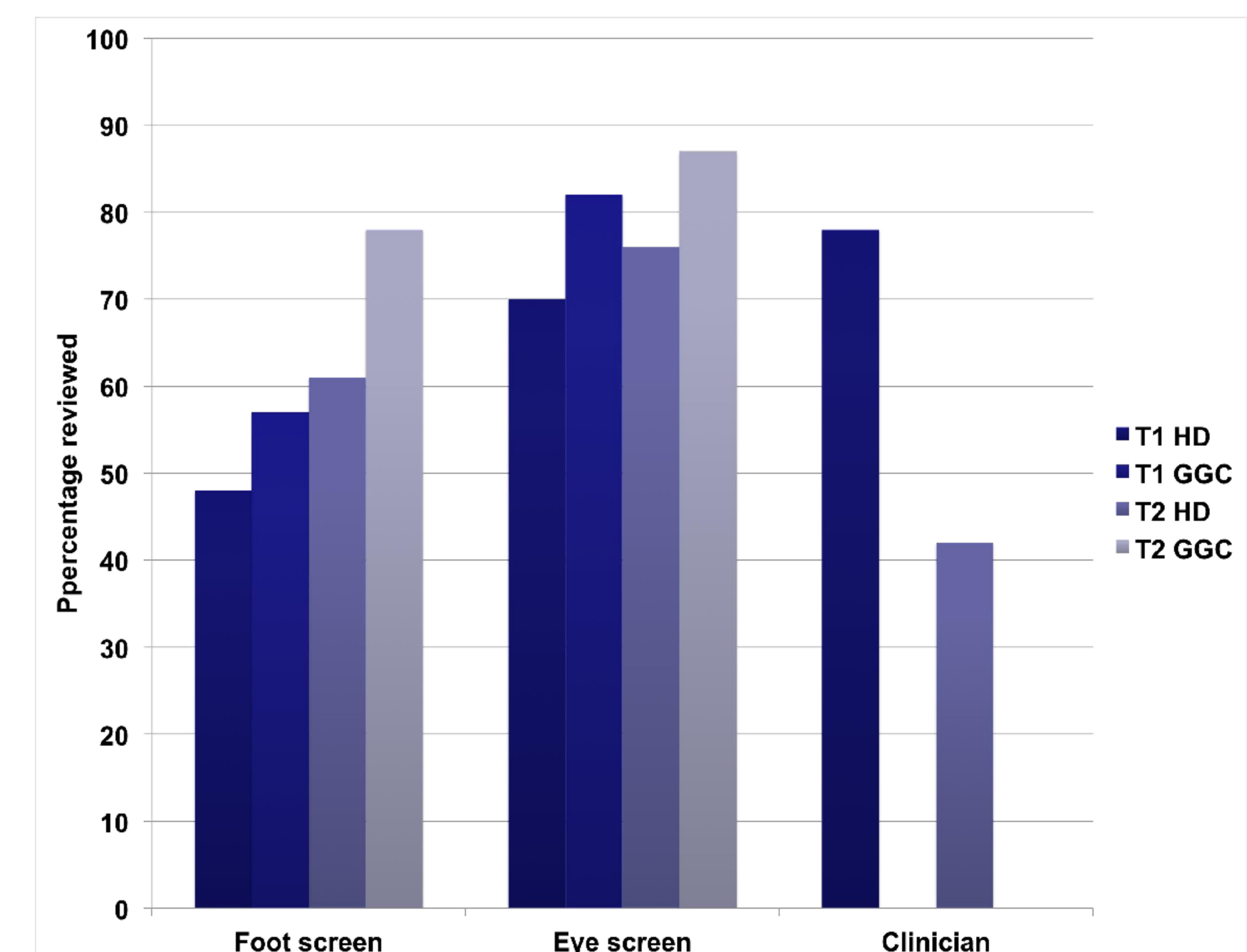


Figure 3: Percentage of patients undergoing screening of feet and eyes in the last 12 months and number of patients reviewed by a clinician in the same time frame. T1HD = Patients with type 1 DM on HD; T1 GGC = all patients with type 1 DM in GGC Healthboard; T2HD = Type 2 DM on HD; T2 GGC = All patients with type 2 DM in GGC.

Foot screening: 48% of Type 1 61% of type 2  
Eye screening: 70% of Type 1 76% of type 2

Figure 4: Recorded retinal or eye screening in last 12 months in diabetics on HD.

## Conclusion

A third of HD patients have DM, yet fewer are receiving appropriate foot and eye screening than in the non-HD population, perhaps reflecting the significant proportion not receiving specialist diabetes care. The reasons for this are likely multiple but surely not insurmountable. These targets should be addressed and achieved to improve the care of patients with DM on HD.