Electronic data interface in general practice improves debtor days

To the Editor: One of the many challenges facing medical practitioners is financial survival; essential to this end is ensuring that fees earned are received as soon as possible. Electronic data interface (EDI) providers claim that EDI expedites this by processing claims quickly, efficiently and accurately.[1] In the USA, EDI halved the average age of accounts and reduced costs of processing claims by 35%.[2] We aimed to ascertain whether claims of shorter account turnaround times when using EDI were valid in South Africa.

Methods. A retrospective before-and-after study of financial records was conducted to quantify any change in account turnaround times in general practice. The relationship between implementing EDI and a change in debtor days (number of days from date of service to date of payment) was investigated. The average debtor days for the year before implementing EDI were compared with the debtor days for the year after implementing EDI. The possibility that the number of claims submitted, or the EDI clearing house/medical aid used, influenced the debtor days was analysed.

The study population comprised all general practitioner practices in South Africa that had used the EDI systems of Digital Healthcare Solutions (DHS) or HealthBridge for more than a year and had submitted paper claims for a year before using EDI. During the study period, 1 178 practices contracted with EDI services. Sampling was done by retrospective computer search. Two EDI clearing houses in South Africa (HealthBridge and DHS) provided lists of practice numbers of practices, fulfilling the selection criteria. Anonymity of practices and patients was assured by only using practice numbers. Every 9th practice on the list was selected; the final sample included 135 practices (102 were needed for a confidence level of 99.9%). The practice numbers were used to extract the dates of service and dates of payment data from the medical aid computers. Data collection was done by a computer operator with no knowledge of the study objectives.

Results. Data sets representing DHS/Medscheme and HealthBridge/Discovery medical aids respectively were used. Paired Student's *t*-tests were done to determine the significance of the difference in debtor days. Results for combined data indicated that average days to payment for paper claims were 44.38 days, compared with 26.81 days for EDI claims (p=0.0001). Neither the specific clearing house for the medical aid used nor the number of claims submitted, significantly influenced debtor days (p=0.86).

Conclusions. There was a statistically significant decrease in debtor days after implementing EDI, indicating that investment in EDI technology may result in similar benefits in South Africa to those in the USA.

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Is diabetic screening *really* feasible in South African urban primary care?

To the Editor: We congratulate Mash and co-authors on their study on screening for diabetic retinopathy with a mobile fundus camera.[1] A readily obtained digital image of the ocular fundus in most patients makes good sense when fundal examination is poorly performed in primary care facilities. Digital fundus photography is accepted as a screening method of choice. They are also to be congratulated on improving quality of care resulting from improving the average rate of retinal screening from 18 to 42%.

Screening for diabetic retinopathy and referral for laser treatment is a form of *secondary prevention*: treating a disease before it causes permanent loss of function. The high prevalence of diabetic retinopathy raises questions regarding the implementation of the *primary prevention* of diabetic retinopathy. Careful control of hyperglycaemia, hypertension and hyperlipidaemia delays the onset of diabetic retinopathy and improves established retinopathy.[2,3] Retinal laser treatment can preserve vision but is a destructive procedure with many side-effects. The best treatment to prevent visual loss is systemic control of diabetes. If there is no progress in improving primary-level diabetic care, the number of patients referred for further treatment of eye disease will continue to increase.

Secondly, it would be unethical to identify patients requiring treatment if such treatment was not available or accessible. Note that a dedicated laser treatment service was established to manage the cases identified as needing treatment. This was necessary to avoid further referrals to the already overloaded tertiary level hospitals. This study helps to emphasise the severe shortage of infrastructure and human resources necessary to deal with patients with diabetic retinopathy.

Many patients were also identified requiring referral for cataracts and other conditions to secondary level ophthalmic services where capacity to manage them has yet to be

developed. The limited secondary eye care services currently available therefore preclude the establishment of such a screening service as a mainstream programme.

Is diabetic screening *really* feasible in the South African urban primary care environment in the absence of sufficient higher levels of care?

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1. Mash B, Powell D, du Plessis F, *et al*. Screening for diabetic retinopathy in primary care with a mobile fundal camera – evaluation of a South African pilot project. *S Afr Med J* 2007; 97: 1284-1288.
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Professor B Mash replies: Dr Rice and colleagues question whether the need for secondary prevention of retinopathy can be reduced by better control of diabetes and whether improved quality of care within district health services will increase the demand for preventive treatment at referral centres.

Health outcomes for diabetic patients partly relate to the quality of care offered in the district health services. Improved quality of care can therefore contribute to better outcomes, including lower rates and progression of retinopathy. Retinal screening was part of a broader initiative to improve the quality of care for diabetic patients in the Cape Town metropolitan area.[1] Audits of community health centres show a significant improvement in many process indicators (Table I).

Annual assessment for retinopathy is recommended by diabetic guidelines including the 2006 International Diabetes Federation's *Type 2 Diabetes Clinical Practice Guidelines for Sub-Saharan Africa*. However, it would be unethical to identify patients requiring treatment if this was either unavailable or inaccessible. Cataract surgery is included as a surgical procedure for district hospitals in the national norms and standards, recognising that secondary level support might be required.[2] At least one Cape Town district hospital offers high-volume cataract surgery on this basis. Laser treatment is not included and there is no clear policy in this regard. District health services do not see that they should offer laser treatment, which is done by tertiary services, but with limited capacity. It may be possible to train medical officers in laser therapy which does not have to be performed by an ophthalmologist. We are actively negotiating a way forward with all levels of care while the project's own medical officer, seconded from the district health services, continues to provide laser treatment.

Improvement in quality of care for chronic disorders at the district level may not reduce the quantity of referrals to higher levels, but can change the nature of the referrals from urgent treatment of end-stage complications to elective preventive interventions.

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1. Mash B, Levitt N, Van Vuuren U, Martell R. Improving the diabetic annual review in primary care: An appreciative inquiry in the Cape Town District Health Services. *SA Family Practice* (in press).
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Table I. Audit results for the process of diabetic care at 37 community health centres, 2005 - 2007

Criteria	2005 Mean % (CI)	2007 Mean % (CI)	*p*-value
Record weight	43.4 (30.2 - 56.7)	51.2 (40.3 - 62.2)	0.169
Record BMI	1.0 (0.0 - 2.6)	14.4 (7.7 - 21.0)	0.000
Measure glucose	72.5 (59.0 - 86.0)	90.7 (85.0 - 96.5)	0.149
Measure fasting glucose	4.1 (1.4 - 6.7)	9.5 (3.4 - 15.6)	0.044
Record BP	69.3 (56.1 - 82.5)	85.0 (77.3 - 92.8)	0.195
Perform foot exam	13.9 (7.9 - 9.9)	35.9 (25.3 - 46.6)	0.000
Record urine protein	57.6 (43.8 - 71.4)	74.6 (63.0 - 86.2)	0.053
Perform retinal screen	6.4 (3.0 - 9.7)	19.6 (12.0 - 27.2)	0.001
Measure cholesterol	4.5 (1.6 - 7.3)	12.0 (5.1 - 18.9)	0.048
Measure creatinine	6.5 (2.9 - 10.0)	17.6 (8.7 - 26.5)	0.023
Ask smoking status	15.9 (7.6 - 24.3)	15.7 (8.2 - 23.1)	0.559
Give smoking advice	10.3 (5.7 - 15.0)	23.8 (15.0 - 32.6)	0.000
Give diet education	32.5 (21.9 - 43.0)	50.7 (39.7 - 61.7)	0.010
Give exercise advice	20.8 (10.4 - 31.1)	41.1 (29.4 - 52.8)	0.000
HbA1c	0.0	3.0	Insufficient data

CI = confidence interval; BMI = body mass index; BP = blood pressure.