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Ophthalmoscopy training should be mandatory for medical undergraduates:

In India, the rate of blindness due to diabetic eye disease is on the increase because of the increase in the average life span, better standards of living and better care of the diabetic. Screening for diabetic retinopathy is effective in preventing blindness and is also cost-effective.¹ To reduce the blindness associated with diabetic retinopathy, we must identify and treat high risk persons before loss of vision occurs. Tertiary prevention in the form of laser treatment for proliferative diabetic retinopathy and macular oedema is available all over India.

Diabetes-control programmes are effective in identifying and treating persons at high risk for vision loss.¹ It is estimated that by the year 2010 the world's diabetic population will have doubled, reaching an estimated 221 million.² Timely diagnosis and referral for the management of diabetic retinopathy can prevent 98% of severe visual loss.³ Early diagnosis and treatment of diabetic retinopathy in Sweden has resulted in the virtual elimination of blindness due to diabetic retinopathy.⁴

The diabetic population in India is estimated to be 20 million at present, with approximately 80% harbouring some grade of diabetic retinopathy (16 million).⁵ The blindness in non-insulin dependent diabetes mellitus (NIDDM) due to diabetic retinopathy is about 2% (0.26-0.32 million), while the same figure in IDDM patients is 4% (0.07 million). Thus, the total blindness in diabetics is approximately 0.33-0.39 million.

Screening by ophthalmologists or diabetologists is hospital based. However, a large number of diabetics are cared for by their general physicians and not by a diabetologist or ophthalmologist. General physicians are easily accessible to patients and are thus well placed to undertake screening in the community. Typically, a medical student's experience in direct ophthalmoscopy is limited and thus they may not have sufficient experience in detecting diabetic retinopathy. With proper training, they could form the backbone of the screening programme for diabetic retinopathy.

To validate the effectiveness of screening for diabetic retinopathy by non-ophthalmologists, we trained a fresh medical graduate (MB,BS, equivalent to a general physician) in direct ophthalmoscopy and then asked him to detect and grade diabetic retinopathy. His results, as compared to a retinologist, were very encouraging and matched those of international studies.⁶

The analysis of the person-diagnosis of retinopathy (of any grade) of general physicians revealed an agreement of 93% (only 1 out of 6 diagnosed as harbouring retinopathy did not have any grade of diabetic retinopathy; false-negative 2.3%).

The analysis of the person-diagnosis of 'sight-threatening diabetic retinopathy' (STDR, defined as either clinically significant macular oedema⁷ or severe non-proliferative diabetic retinopathy/proliferative diabetic retinopathy with high risk characteristics^{8,9}) of general physicians revealed an agreement of 91% (only 1 out of 7 diagnosed as STDR did not have STDR; false-negative 4.2%).

The sensitivity of screening for diabetic retinopathy increases with the healthcare providers' training and experience in performing eye examinations.¹⁰ With appropriate training, non-ophthalmologists should be able to detect diabetic retinopathy and make a correct decision regarding the need to refer the patient for tertiary care. Medical undergraduates (future general physicians) are a very strong, reliable and effective workforce that has been unutilized for a long time. They could prove to be invaluable in the prevention of diabetic blindness, if trained well, and then provided with the requisite screening protocols and follow up parameters. We suggest that health planners should consider making direct ophthalmoscopy mandatory in the education curriculum of medical undergraduates.

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References

1. Javitt JC, Canner JK, Frank RG, Steinwachs DM, Sommer A. Detecting and treating retinopathy in patients with type 1 diabetes mellitus. *Ophthalmology* 1990;97: 483-95.
2. Amos AF, McCarty DJ, Zimmet P. The rising global burden of diabetes and its complications: Estimates and projections to the year 2010. *Diabet Med* 1997;14 (Suppl 5):81-5.
3. Ferris FL 3rd. How effective are treatments for DR? *JAMA* 1993;269:1290-1.
4. Backlund LB, Algvare PV, Rosenqvist U. New blindness in diabetes reduced by more than one-third in Stockholm County. *Diabet Med* 1997;14:732-40.
5. Park K. Park's textbook of preventive and social medicine. Jabalpur:Banarsidas Bhanot, 1995:269.
6. Lienert RT. Inter-observer comparisons of ophthalmoscopic assessment of diabetic retinopathy. *Aust N Z J Ophthalmol* 1989;17:363-368.
7. Early Treatment Diabetic Retinopathy Study Research Group. Early treatment diabetic retinopathy study design and baseline patient characteristics. ETDRS report number 7. *Ophthalmology* 1991;98:741-56.
8. Diabetic Retinopathy Study Research Group. Preliminary report on effects of photocoagulation therapy. *Am J Ophthalmol* 1976;81:383-96.
9. Diabetic Retinopathy Study Research Group. Photocoagulation treatment of diabetic retinopathy: Clinical application of Diabetic Retinopathy Study (DRS) findings. DRS report number 8. *Ophthalmology* 1981;81:585-600.
10. Brechner RJ, Harris M, Cowie K. Eyes and diabetes-who's getting care? The National Health Interview Survey Diabetes Supplement 1989. *Diabetes* 1992;41 (Suppl 1):7A.