Diabetes: Health Care Services

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Trends in their use by Diabetics in Malta

The following article is an attempt to evaluate the patterns in the use of medical services by diabetic patients in Malta in the last few years during which the National Diabetes Programme has been in progress. It is essentially based on data collected from the polyclinics where diabetes health care is delivered at the primary level, from the diabetes clinic in St. Luke's Hospital where secondary health care is given, and from information elicited from hospital inpatient activity which could serve as an estimate of the impact of diabetes on hospital services.

Diabetes Centres in Polyclinics

Concerning first the aspect of primary health care to diabetics, the data available from the polyclinics is shown in Table 1 which gives the total numbers of patients making use of these services, and their percentage breakdown according to therapy modalities, during the years 1982 to 1985. The overall ratio of males to females varied from 46.3 to 43.8% for the males to 53.7 to 56.2% for the females. The subdivision of the modes of therapy according to sex for the years in question is presented in Table 2. Preliminary analysis of these data would seem to show that the attendance at the polyclinics has been steadily growing, reaching an increase of circa 93% in the number of patients in 1985 as compared to 1982. This increase was made up of patients referred from St. Luke's Hospital Diabetes Clinic as well as others wishing to make use of the ever improving services offered in the polyclinics. The latter would be coming from the community among which an apparent increased *awareness of diabetes* seems to have been generated. Concerning the therapy modaliteis, there would appear to have been no major changes in the proportion of patients being treated with oral hypoglycaemic agents since 1983, possibly indicating that a standardized strategy for the use of antidiabetic tablets have been consolidated in that year and has been respected ever since. The same would seem to have occurred, more or less, with *diet only* treatment. However, with regards to insulin there appears to have been a possibly important increase in the proportion of patients being treatd with the hormone, and although the reasons are not clear, secondary failure to tablets, and the need for tighter control in patients with incipient complications or significant concommitants could well be among the major candidates - other probably important causes being failure to comply with long term management programmes and the progressive natural history of NIDDM itself.

Diabetes Out-patient Clinic in St. Luke's Hospital

The data for years 1982 to 1985, related to the total number of patients being seen there and their percentage breakdown according to the therapy modalities is shown in Table 3. Here again there clearly appears to have been an increased attendance reaching a rise of circa 67% in the number of patients followed-up in 1985 as compared to 1982. This would probably seem to indicate that people are more conscious of this metabolic disorder, and more trust is being regularly put in the constantly improving services being offered to the diabetic (and the community). The ratio of males to females being followed-up at the clinic varied from 39.7 to 33.6% for the former, to 60.3 to 66.4% for the latter. The breakdown of the therapy modalities according to sex is presented in Table 4. The proportion of patients on *diet only* seems to have slightly decreased, probably reflecting the policy of referring such patients, when fully registered, to the polyclinics. There appears to have been no relevant developments in the proportion of patients being treated with tablets (although between 1982 and 1985 the percentage of those on glibenclamide increased from 48 to 84% whilst the percentages of the others on chlorpropamide and metformin dropped from 40 to 14% and from 12 to 2% respectively).

On the other hand a possibly important increase in the proportion of subjects managed on insulin seems to have been registered, and although the reasons might not be clear, the same ones possibly operating in the case of the polyclinics, would probably be of significance. With regards to this aspect of insulin-treated patients, the ratio of such cases being followed-up at the diabetes clinic to those seen at the polyclinics has remained steady during these last years, indicating that the more serious cases are being regularly treated at the secondary health care level, emphasizing the specialised role of the diabetes clinic in looking after the more complicated cases.

From the data available at SLH's diabetes clinic where a significant proportion of new cases of suspected diabetes are initially referred to for investigations, a preliminary estimate of the possible incidence (per 100,000 of the population per year) of suspected cases that are probably diabetic (using the WHO criteria) gives levels of 288, 348, 310 and 269 respectively for years 1982 to 1985. These figures would seem to show that the development of the

Polyclinics
% Therapy

	1982 N = 2346	1983 N = 3763	1984 N = 3519	1985 N = 4525
Diet Only	80.0	61.6	54.6	56.4
O.H.A	18.9	34.8	39.0	38.3
Insulin	3.1	3.5	6.4	5.3

Table 1.

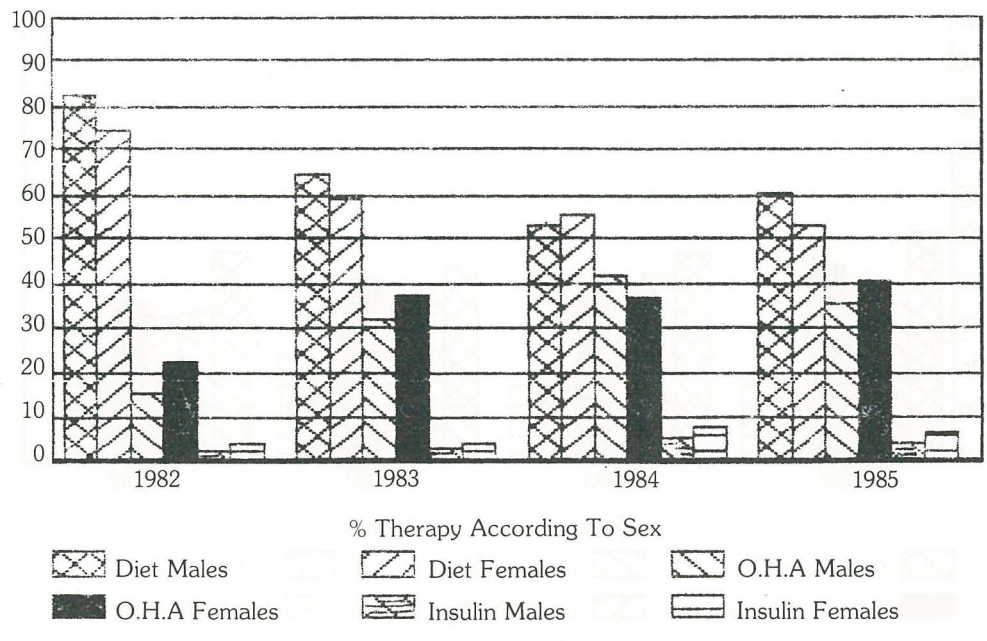

Table 2.

diabetic health care system is proper and adequate to tackle diabetes as a public health problem.

Inpatients at St. Luke's Hospital

For the study of the patterns of the use of hospital inpatient services made use of by diabetic patients in Malta in the years 1980 and 1984, it was decided to assess the proportion of hospital admissions by diabetic patients of the admissions due to certain conditions more often related to diabetes. Among the parameters selected were: ischaemic heart disease (including myocardial infarctions), stroke (including cerebrovascular insufficiency) and peripheral vascular disease (including the ischaemic foot, diabetic ulcers and gangrene, and all cases of amputations) - regarding macroangiopathy; retinopathy and renal failure - regarding microangiopathy; and cases of diabetes mellitus admitted for coma (hyper- or hypoglycaemic) as well as those admitted for stabilization to the metabolic unit beds which became available only well after 1980. On all these cases, an evaluation was done concerning the average stay in hospital of diabetics as compared to non-diabetic patients. Results of this exercise are highlighted in Table 5.

Surgical Department

Assessing the surgical department wherein the peripheral vascular disease cases are usually admitted, the increase of circa 15% in the total number

S.L.H. Diabetes Clinic
% Therapy

	1982 N = 4057	1983 N = 4599	1984 N = 5728	1985 N =6773
Diet Only	41.7	44.0	38.9	38.2
O.H.A.	39.4	38.9	40.3	35.0
Insulin	18.9	17.1	20.8	26.8

Table 3.

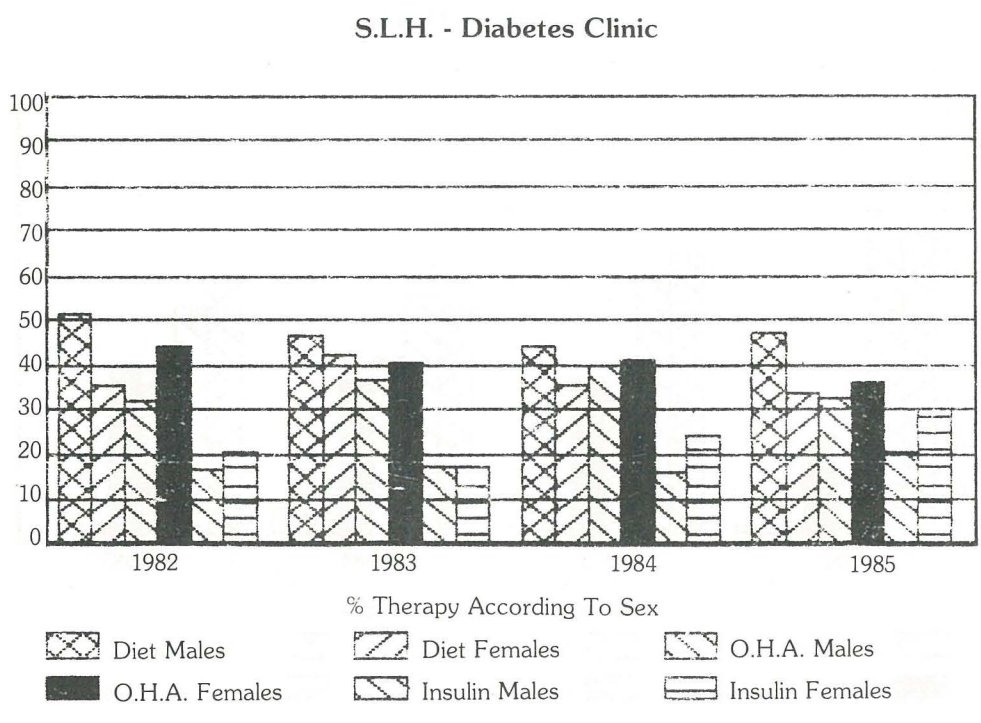

Table 4.

of admissions between 1980 and 1984 to the surgical wards could be related to the decrease in the average stay in hospital both for peripheral vascular disease cases (diabetic by 8%, non-diabetic by 20%) and for other conditions (32.5%). There seemed to be no marked changes in the proportion of cases diagnosed as diabetic within the number of peripheral vascular disease cases studied, however there appeared to be a probably significant decrease (46%) of PVD cases as a proportion of total admissions. Diabetic cases with PVD still seemed to need a relatively longer stay in hospital both in 1980 and 1984, as compared to non diabetic cases with PVD. Although possibly indicating improvement in the right direction, these data would not appear to permit drawing definitive conclusions regarding changes in level of diabetes health care delivered between 1980 and 1984.

Medical Department

Again, the increase (24%) in the total admissions could be related to the decrease in the average stay in hospital of medical cases, which seems to have been of a similar magnitude to the surgical department, and which might reflect a possible change in policy in hospital, e.g. referring earlier to an improved community care service.

S.L.H. Inpatient Data

Surgical Wards: Total Admissions. 1980 - 7,488; 1984 - 8,625

parameter	year	No. of cases	% total admissions	cases studied	cases of d.m. No.	cases of d.m. % of studied	hosp. stay (days) dm	hosp. stay (days) non-dm
P.V.D.	*1980*	192	2.6	117	97	82.9	42.0	26.8
	1984	117	1.4	97	79	81.4	38.7	21.5
Medical Wards: Total Admission. 1980 - 6,425; 1984 - 7,950								
C.V.A.	*1980*	349	5.4	64	16	25.0	23.6	16.0
	1984	503	6.3	76	9	11.8	24.3	24.3
I.H.D	*1980*	1232	19.2	90	26	28.9	18.2	17.3
	1984	1503	18.9	152	21	13.8	16.8	16.3
RENAL	*1980*	3	0.05	3	0	0	—	—
	1984	72	0.9	28	3	10.7	10.0	19.2
D.M.	*1980*	185	2.9	44	44	100	19.6	—
	1984	406	5.1	74	74	100	14.1	—
Ophthalmic Wards: Total Admissions: 1980 - 942; 1984 - 1,000								
RETIN-OPATHY	*1980*	40	4.2	18	2	11.1	12.0	13.0
	1984	49	4.9	41	16	39.0	25.0	19.0

Table 5.

Cerebrovascular Disease

The increase in the number of admissions for CVA was circa 44% as compared to some 24% increase in the total admissions to medical wards, probably signifying that CVA has been becoming more important as a cause of admission between 1980 and 1984. Out of the samples studied for the two years in question, there seemed to have been an important decrease (circa 53%) in the proportion of cases with diabetes. No marked changes in the average stay in hospital of diabetic cases were noted, whilst on the other hand the non diabetic cases seemed to have required a significantly longer stay in hospital.

Ischaemic Heart Disease

The increase in the number of admissions for IHD was circa 22% as compared to some 24% increase in the total admissions to the medical wards, giving a proportional drop of about 2%. Out of the samples studied for 1980 and 1984, the proportion of cases diagnosed as diabetic fell by a seemingly significant degree (53% - similarly as for CVA) - possibly meaning that less diabetics were apparently suffering episodes of CVA and/or IHD, this probably related in part to better treatment and/or improved preventive measures. No important changes in the average stay in hospital were noted both in diabetic and non diabetic cases.

Renal Cases

Not much can be concluded due to the fact that in the interim period, a reorganization of services occurred with the setting up of a *Renal Unit.* Concerning the 1984 data, renal failure appeared to account for some 1% of the total admissions to the medical wards. Out of the sample studied circa 11% were diabetic.

Ophthalmological Department

There seemed to have been a slight increase in the total admissions to the ophthalmic wards with no important increase in the proportion of *complicated retinopathy* cases. However an apparently important increase in the proportion of cases found to be diabetic was noted within the samples studied - possibly indicating a probable increased interest in the earlier diagnosis and improved management of retinopathy in diabetics. The average stay in hospital needed by diabetic cases increased markedly in 1984, possibly meaning more attention being given to overall management of such cases. Laser treatment was started well after 1980, as an outpatient procedure in Malta - for 1984, the total number of cases was 632, in a sample of which 75.6% were found to be diabetic cases.

Regarding the 1984 in-patient data, out of the sample studied, some 76% were diabetic, probably indicating that more intensive treatment was being concentrated for diabetics.

Diabetes Cases

Concerning the cases lumped together under the heading of diabetes, the increase in the total number of cases admitted to the medical wards with the diagnosis of diabetes could be in part explained by the opening of the metabolic unit, resulting in a better overall treatment being offered to diabetic patients. Out of the samples studied, the average stay in hospital decreased by circa 28% in part possibly indicating that diabetic cases now need about 14 days in hospital for adequate stabilization.

Conclusion

Even though somewhat prematurely, it might be provisionally concluded from this preliminary analysis, that the National Diabetes Programme has prompted significant developments in the comprehensive helath care for diabetics. The integrated approach to diabetic care seems now well organized, and the overall improvements achieved appear to have started giving encouraging results at all levels of care. This would tend to justify the time, effort and expense put in, whilst at the same time warrant further studies on health manpower development and health economics (including the estimation of the economic cost of diabetes, as well as related cost-benefit and cost-effective analyses). Based on the experience regularly gained, further upgrading of the present system of diabetes care should be constantly attempted. This could eventually serve as a model for the development of control strategies for other non communicable diseases, as well as to be of potential interest to other countries committed to ameliorating their existing (diabetes) health care services.

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