

FIRST REPORT OF THE AUSTRALIA AND
NEW ZEALAND COMBINED DIALYSIS AND
TRANSPLANT REGISTRY.

1978

FIRST REPORT ON THE AUSTRALIA AND NEW ZEALAND COMBINED DIALYSIS AND TRANSPLANT REGISTRY

SPONSORED BY THE AUSTRALIAN KIDNEY FOUNDATION

This report is the first from the combined Dialysis and Transplant Registry which effectively commenced operation with its first data input at the end of October, 1977. An abbreviated report was presented at the Annual Meeting of the Australasian Society of Nephrology in February in Melbourne.

The data contained in this report largely consists of a simple tabulation of data from patients reported to the Registry as contributing to the survey period from end of April, 1977 to the end of October, 1977. At the time of compilation of this Report, the Registry was not in receipt of complete returns on patients who had died prior to April, 1977, and therefore it has been impossible to analyse graft and patient survival with life table analysis. This is planned for the next report which will be completed in the next few months.

A) DIALYSIS REPORT

DIALYSIS POPULATION (Figure 1 and 2. Table 1)

There was a 12% increase in patients in Australia and New Zealand over the last year (see Figure 1). There were 65 patients per million in Australia and 45 patients per million in New Zealand maintained on dialysis at 31st. October, 1977. There had been minor increases in State totals (see Figure 2) except for New South Wales which maintained its previous considerable rate of increase. The latest State totals are shown in Table 1.

FIGURE 1

DIALYSIS POPULATION PER MILLION

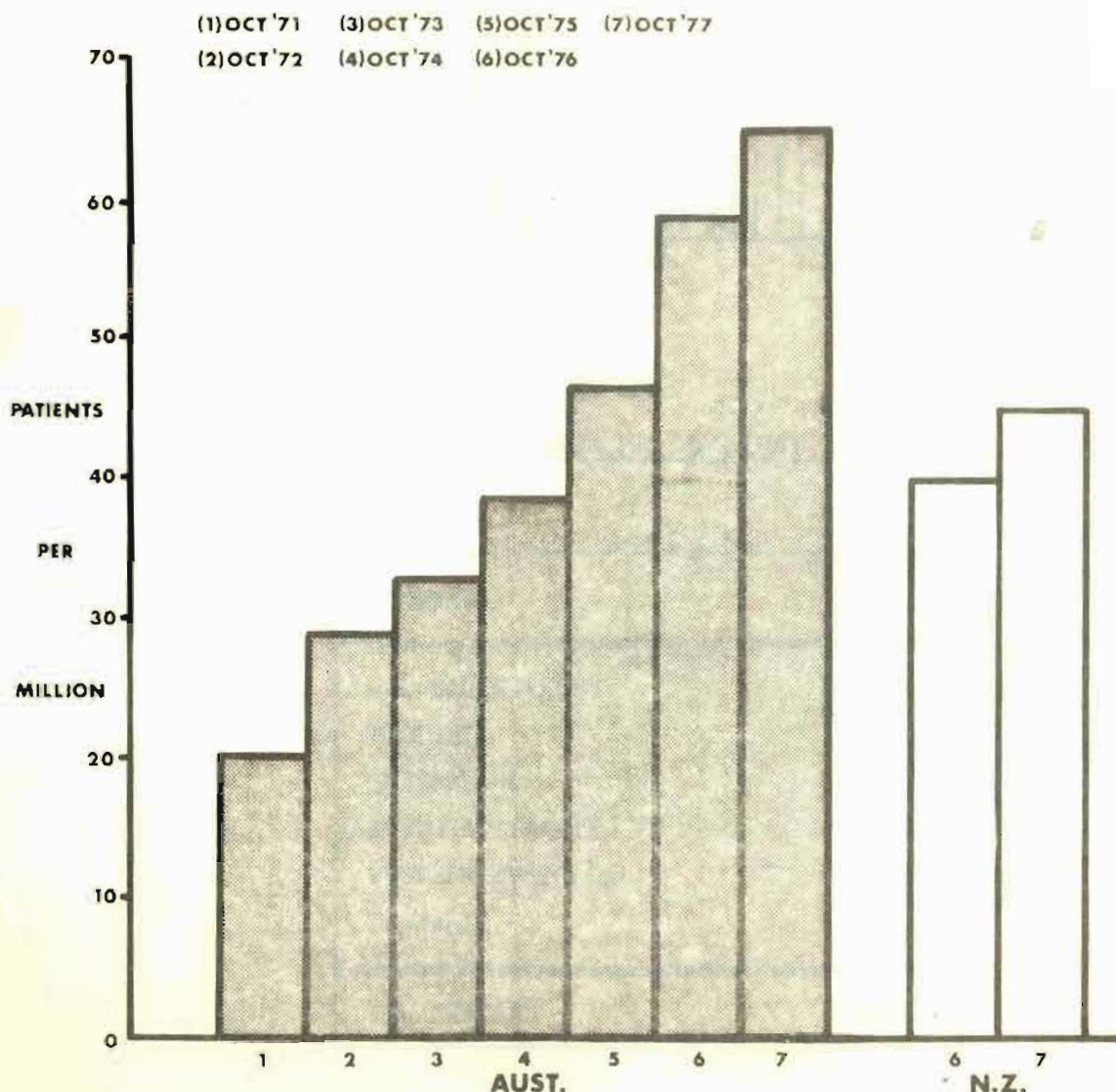


FIGURE 2

DIALYSIS POPULATION PER MILLION

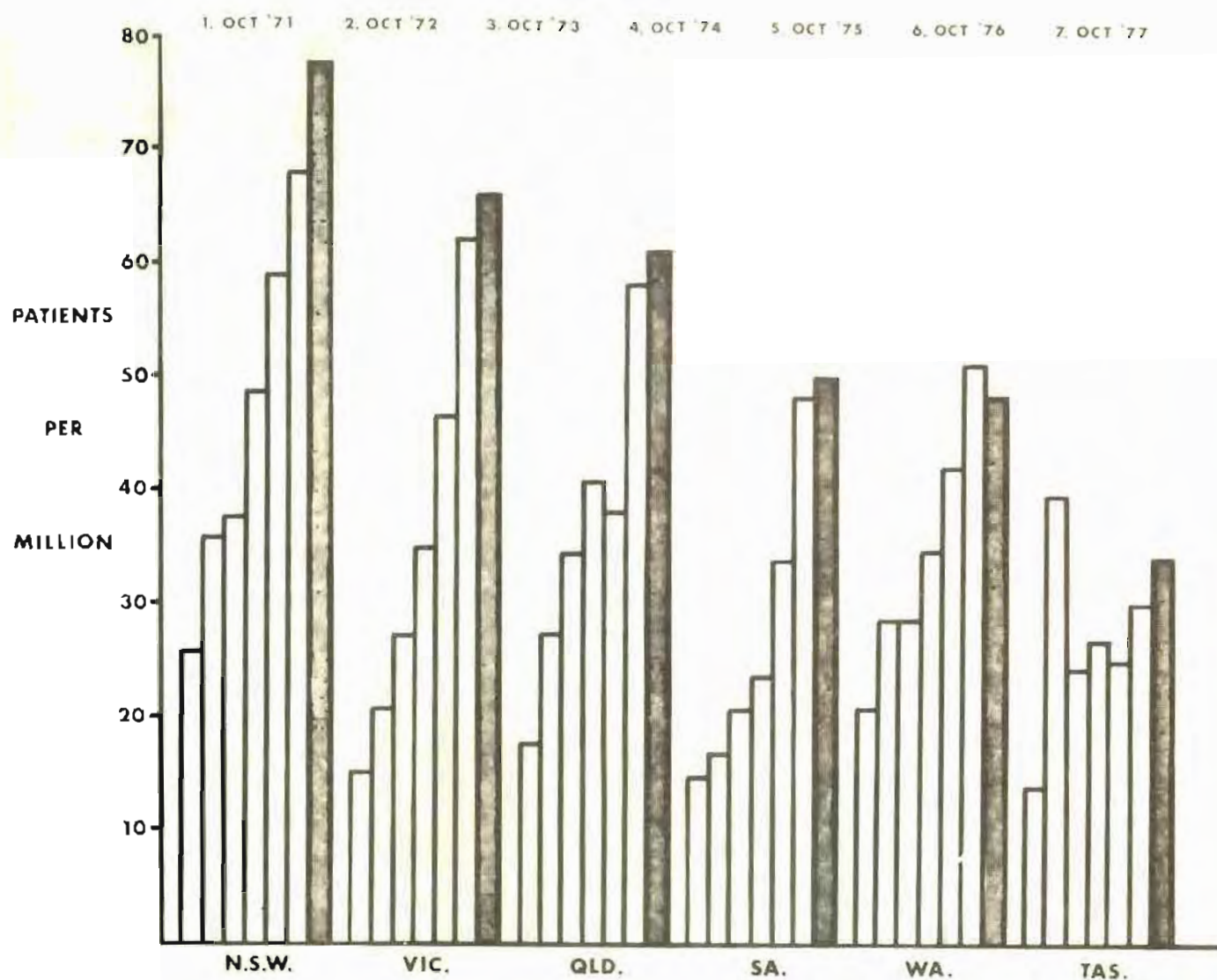


TABLE 1

DIALYSIS PATIENTS PER MILLION: 31.10.77

AUSTRALIA	64.9
NEW SOUTH WALES	77.7
VICTORIA	65.8
QUEENSLAND	61.2
SOUTH AUSTRALIA	50.1
WESTERN AUSTRALIA	46.8
TASMANIA	34.1
NEW ZEALAND	45.4

HOME DIALYSIS (Figures 3 and 4. Table 2)

There was a 27% increase in home patients in Australia in the last year, and a 100% increase in New Zealand. 33.2 patients per million (representing 51% of total on dialysis) in Australia and 21.5 patients per million (47.5% of total) in New Zealand were on home dialysis at 31st. October, 1977, (see Figure 3, Table 2) There were significant increases in N.S.W., Victoria and Queensland (see Figure 4)

Of the states, N.S.W. and Victoria both exceed the Australian average with 60% and 54.6% of all patients on home dialysis respectively.

The increase in home dialysis patients account entirely for total increase in all dialysis patients during the last 12 month period, there was no increase in the number of hospital patients during this period.

FIGURE 3

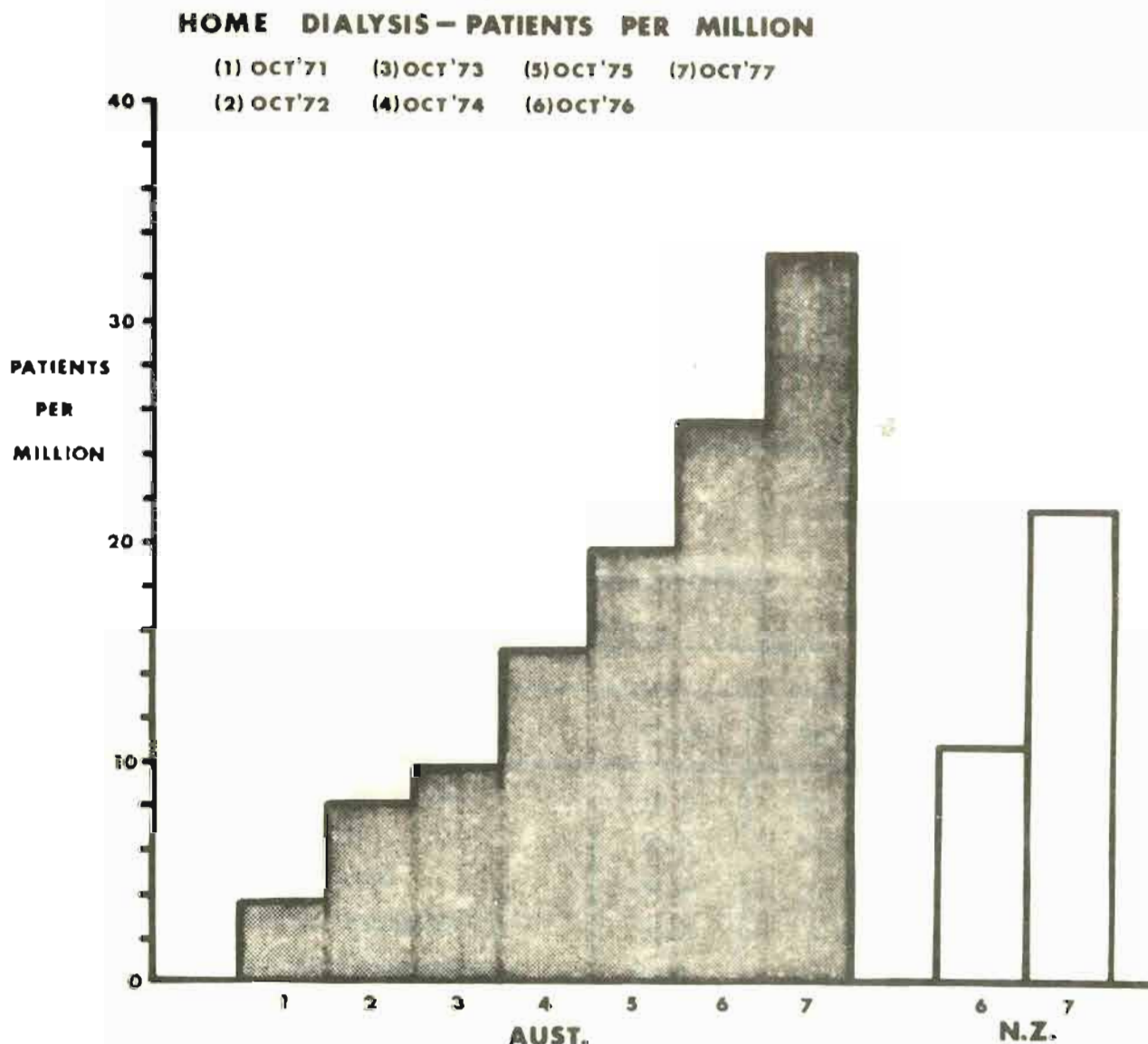


FIGURE 4

HOME DIALYSIS POPULATION PER MILLION

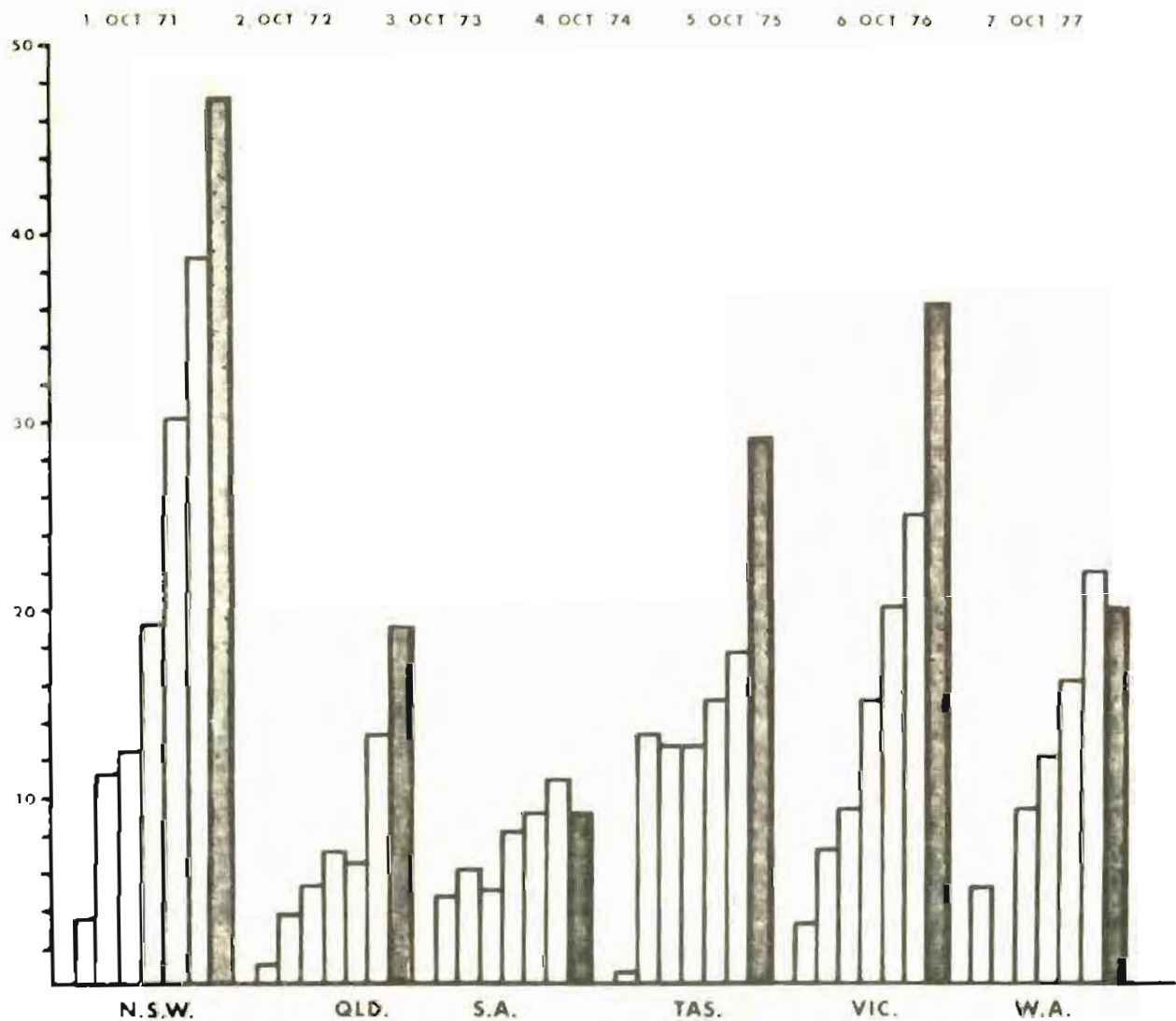


TABLE 2

RATIO OF HOME DIALYSIS PATIENTS

AND PERCENTAGE PER MILLION - 31.10.77

AUSTRALIA	51.0%	33.2%
NEW SOUTH WALES	30.5	47.1
VICTORIA	60.6	36.0
QUEENSLAND	54.6	18.7
SOUTH AUSTRALIA	18.7	9.4
WESTERN AUSTRALIA	42.8	20.1
TASMANIA	71.0	29.2
NEW ZEALAND	47.5	21.5

NEW PATIENTS (Figure 5. Table 3 and 4)

The rate of new patients has decreased slightly from 31 per million to 28 per million over the last year in Australia; while in New Zealand it increased from 17 to 21 per million. (See Table 3)

Only Israel and Belgium of European countries exceeded the rate of Australian new patient intake and only four other countries exceeded the New Zealand new patient intake, (see Figure 5) The mean new patient age was 43 years for Australia and 39 years for New Zealand. Three patients in Australia were over 71 years old.

The individual State totals are shown in Table 4.

TABLE 3

Australia and New Zealand Dialysis and Transplant Registry

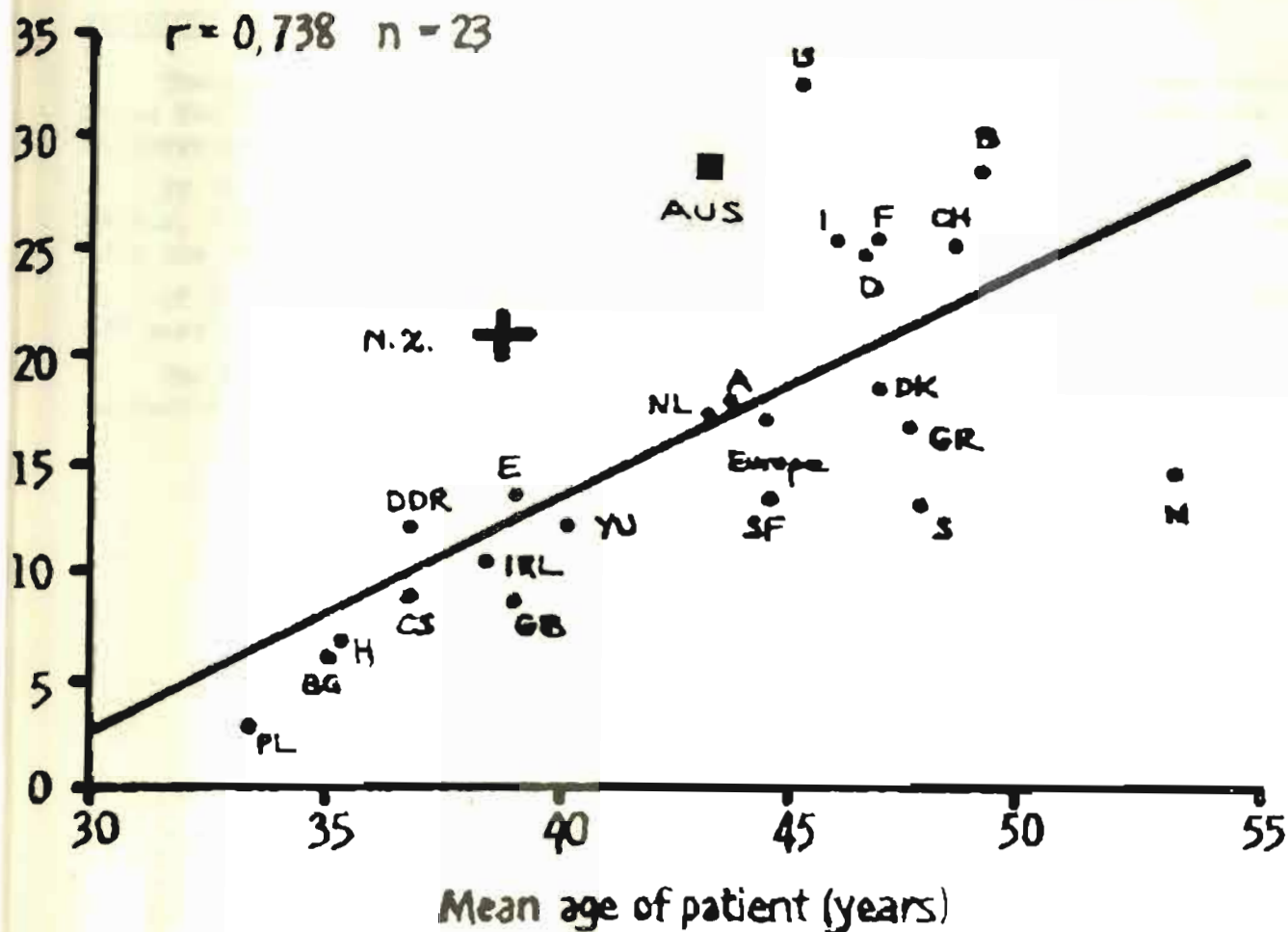
NEW DIALYSIS PATIENTS PER YEAR

A U S T R A L I A		
12 MONTH PERIOD	NUMBER	PER MILLION
NOV. 71 - OCT. 72	353	27.0
NOV. 72 - OCT. 73	318	24.0
NOV. 73 - OCT. 74	350	26.2
NOV. 74 - OCT. 75	393	29.0
NOV. 75 - OCT. 76	443	31.0
NOV. 76 - OCT. 77	398	28.0
N E W Z E A L A N D		
NOV. 75 - OCT. 76	52	17
NOV. 76 - OCT. 77	66	21

FIGURE 5

HOSPITAL HAEMODIALYSIS

EDTA 1976



NEW PATIENTS : NOV. 1976 - OCT. 1977

TABLE 4

	NOV. 76-APR. 77	MAY-OCT. 77	TOTAL NO.	PER MILLION
AUST.	198	200	398	28
N.S.W.	92	94	186	36
VIC.	42	44	86	23
QLD.	32	29	61	28
S.A.	13	22	35	27
W.A.	13	8	21	17
TAS.	6	3	9	22
N.Z.	32	34	66	21

AETIOLOGY OF RENAL FAILURE - NEW PATIENTS (Tables 5, 6 and 7)

There had been no change in the incidence of various causes of renal failure since the last report; diabetes 18% and analgesic nephropathy 0% were notable differences between New Zealand and Australia.

22.7% of new patients in Australia were diagnosed as analgesic nephropathy, (N.S.W. 34%, Queensland 20.7%) There has been no consistent change in these ratios over the last three years.

Of 67 patients with glomerulonephritis, 21% had no histological confirmation, 21% were classified as end-stage, and the remainder fairly evenly distributed.

The potential epidemiological value from specific classification of glomerulonephritis should encourage such histological assessment.

TABLE 5AETIOLOGY OF RENAL FAILURE - NEW PATIENTSMAY - OCTOBER 1977

	AUSTRALIA 200 PATIENTS	NEW ZEALAND 34 PATIENTS
GLOMERULONEPHRITIS	34%	35%
ANALGESIC NEPHROPATHY	22	0
REFLUX NEPHROPATHY	8	6
HYPERTENSION	5	0
POLYCYSTIC KIDNEYS	2	11.5
DIABETES	5	18
GOUT	1	3
UNKNOWN	9	11.5
OTHERS	14	15
TOTAL %	100%	100%

TABLE 6ANALGESIC NEPHROPATHY IN NEW PATIENTS: MAY - OCTOBER, 1977

AUSTRALIA	22.7%
NEW SOUTH WALES	34.0
QUEENSLAND	20.7
SOUTH AUSTRALIA	13.6
VICTORIA	9.1
WESTERN AUSTRALIA	0
TASMANIA	0
NEW ZEALAND	0

(1)

DIALYSERS (Table 8 and 9)

The majority of patients are dialysed using parallel plate haemodialysers of less than 1.5 sq. meter surface area. 8% of patients used peritoneal dialysis.

74% (Australia) and 60% (New Zealand) dialysed three times per week in hospital; 96% (Australia) and 94% (New Zealand) dialysed three times per week in the home.

In Australia, 70% of hospital patients dialysed less than 15 hours per week and 80% home patients dialysed more than 15 hours per week.

86% of patients in New Zealand dialysed less than 18 hours per week in hospital and 78% dialysed more than 24 hours per week in the home.

TABLE 8Australia and New Zealand Dialysis and Transplant Registry

DIALYSERS ; 31.10.77 AUSTRALIA

TYPE OF DIALYSER	HOSPITAL	HOME	TOTAL
COIL	14%	4%	8%
PARALLEL PLATE	60	78	70
CAPILLARY	26	18	22
	100%	100%	100%

DIALYSER SURFACE AREA	HOSPITAL	HOME	TOTAL
< 1.5 sq. m.	73%	88%	80%
≥ 1.5 sq. m.	27	12	20
	100%	100%	100%

TABLE 2

Australia and New Zealand Dialysis and Transplant Registry

DIALYSERS : 31.10.77 NEW ZEALAND

TYPE OF DIALYSER	HOSPITAL	HOME	TOTAL
COIL	3%	0%	2%
PARALLEL PLATE	73	91	81
CAPILLARY	24	9	17
	100%	100%	100%

DIALYSER SURFACE AREA	HOSPITAL	HOME	TOTAL
< 1.5 sq. m.	98%	100%	99%
≥ 1.5 sq. m.	2	0	1
	100%	100%	100%

REHABILITATION (Table 10, 11, 12)

As usual more home patients than hospital patients were employed full time and a significant proportion (21%) of hospital patients were unfit for work.

There is a significant difference in the percentage of patients in dialysing in hospital for more than 15 hours per week who are not working when compared to those dialysing for less than 15 hours. There is no significant difference for home patients when related to duration of dialysis per week.

TABLE 10

DIALYSIS PATIENT REHABILITATION

MAY - OCTOBER, 1977

REHABILITATION CLASSIFICATION	AUSTRALIA		NEW ZEALAND	
	HOSPITAL	HOME	HOSPITAL	HOME
FULL TIME	42%	64%	47%	73%
PART TIME	18	13	14	6
NO JOB	3	2	5	2
DIALYSIS SCHEDULE	5	2	6	0
DISINCLINED	11	10	6	13
UNFIT	21	9	22	6

TABLE 11REHABILITATION: HAEMODIALYSIS HOURS PER WEEKAUSTRALIA

REHABILITATION CLASSIFICATION	HOSPITAL		HOME	
	≤ 15 HRS.	> 15 HRS.	≤ 15 HRS.	> 15 HRS.
FULL TIME	46.9%	30.7%	65.6%	64.0%
PART TIME	17.3	19.3	13.6	12.8
NO JOB	2.2	3.5	1.2	1.4
DIALYSIS SCHEDULE	3	9.6	2.4	2.0
DISINCLINED	9.7	15.8	8.6	11.1
UNFIT	20.9	21.1	8.6	8.7
	100.0%	100.0%	100.0%	100.0%

TABLE 12REHABILITATION: HAEMODIALYSIS HOURS PER WEEKNEW ZEALAND

REHABILITATION CLASSIFICATION	HOSPITAL		HOME	
	≤ 15 HRS.	> 15 HRS.	≤ 15 HRS.	> 15 HRS.
FULL TIME	50%	47%	50%	74%
PART TIME	20	13	-	6
NO JOB	0	6	-	2
DIALYSIS SCHEDULE	10	6	-	-
DISINCLINED	0	8	50	12
UNFIT	20	20	-	6
	100%	100%	100%	100%

DIALYSIS PATIENT DEATHS (Table 13)

6.8% of patients dialysed (Australia) and 2.4% patients dialysed (New Zealand) died during the six months May - October, 1977. With an average age of 46 years (Australia) and 60 years (New Zealand)

As usual cardiac and cerebrovascular episodes were the most frequent causes of death but infection was a surprisingly common cause in hospital patients in Australia (27%); malignancy accounted for 10% hospital and 13% home patients in Australia.

TABLE 13DIALYSIS DEATHSMAY - OCTOBER, 1977.

CAUSE	AUSTRALIA 76 PATIENTS		NEW ZEALAND 4 PATIENTS	
	HOSPITAL (53)	HOME (23)	HOSPITAL (3)	HOME (1)
CARDIAC	37%	57%	33%	0%
VASCULAR	8	22	33	100
INFECTION	27	4	0	0
SOCIAL	8	0	0	0
MALIGNANCY	10	13	0	0
MISCELLANEOUS	10	4	33	0

AUSTRALIA AND NEW ZEALAND DIALYSIS AND TRANSPLANT REGISTRY

B) REPORT ON TRANSPLANTATION: MAY - OCTOBER, 1977.

At the end of October, 1977, 2444 patients in Australia (2050) and New Zealand (394) had received at least one renal transplant. 1452 of these were alive and 1167 of these were maintained by a functioning graft. These results are shown in Table 1.

During the last six month survey period, 142 new patients received a transplant and 179 transplant operations were performed.

TABLE 1

OVERALL RESULTS (LD AND CAD)

1963 - OCTOBER, 1977

	TOTAL PATIENTS TRANSPLANTED	TOTAL TRANSPLANT OPERATIONS	PATIENTS ALIVE	PATIENTS ALIVE WITH FUNCTIONING GRAFT
AUSTRALIA	2050	2331	1254	1009
NEW ZEALAND	394	482	198	158
TOTAL	2444	2813	1452	1167

RATE OF TRANSPLANTATION

Table 2 shows the number of total transplant operations performed each 12 month period over the last seven years. After a substantial rise in the total number in 1974 and 75, the number has plateaued at about 20 per million of population per year. This rate is exceeded only by Finland and Denmark (E.D.T.A. 76). The rates in the last six months are detailed state by state in Table 2A.

NUMBER OF LIVE TRANSPLANTS

The number of live transplants performed in each of the six month periods since 1970 is shown in Table 2. After an increase in activity in 1973-74 the number being performed has stabilised. For the last two years (1976 and 77) the number has been the same (14 per year) and this represents 4% of transplant activity. This contrasts with the European figure of 14% for the years (1975 and 76)

NUMBER OF 2nd, 3rd and 4th TRANSPLANTS

As might be expected with an expanding pool of patients with functioning grafts and hence an increasing population of grafts at risk from failing, the rate of non-primary grafting has increased slowly through the years and has accounted for 18% of transplant activity over the last two years (1976 and 77) - Table 2. This compares to a rate of 13.5% of non-primary transplants for the previous two year period (1974 and 75)

TABLE 2.

AUSTRALIA AND NEW ZEALAND DIALYSIS AND TRANSPLANT REGISTRYANNUAL RATE OF TRANSPLANTATION

	TOTAL OPERATIONS	2nd, 3rd, 4th. OPERATIONS	LIVE DONOR OPERATIONS
(TO END OCTOBER) 1971	272	25	2
" 1972	238	26	3
" 1973	289	34	6
" 1974	313	43	7
" 1975	373	48	8
" 1976	326	59	14
" 1977	365	63	14

TABLE 2ARENAL TRANSPLANTS: MAY - OCTOBER 1977

	OPERATIONS	PER MILLION
AUSTRALIA	146	10.2
NEW SOUTH WALES	55	10.7
VICTORIA	32	7.9
QUEENSLAND	24	11.2
SOUTH AUSTRALIA	20	16.6
WESTERN AUSTRALIA	13	10.8
TASMANIA	2	5
NEW ZEALAND	33	10.6

FUNCTIONING TRANSPLANTS

At the end of this survey period 1167 grafts were functioning. The details are shown in Table 3. Table 4 shows graphically a steadily increasing number of patients (per million of population) alive with a functioning graft. The estimated figure of 68 functioning grafts (end December 1976) per million is bettered only by Denmark (73). Next comes Norway at 58. Only five countries have achieved even 50% of the Australian rate.

The state by state breakdown is shown in Table 5. Considerable interstate variation is evident.

TABLE 3FUNCTIONING TRANSPLANTS (LD AND CAD) AT OCTOBER, 1977

	AUSTRALIA		NEW ZEALAND	
	NUMBER OF GRAFTS	% OF ALL GRAFTS	NUMBER OF GRAFTS	% OF ALL GRAFTS
PRIMARY GRAFTS	887 (32)*	88%	130 (7)*	82%
SECOND GRAFTS	114 (6)*	11	26 (0)*	16
THIRD GRAFTS	7 (0)*	0.7	2 (0)*	2
FOURTH GRAFTS	1 (0)*	0.3	0	0
TOTAL	1009 (38)*	100%	158 (7)*	100%

() * LIVE DONOR

TABLE 4

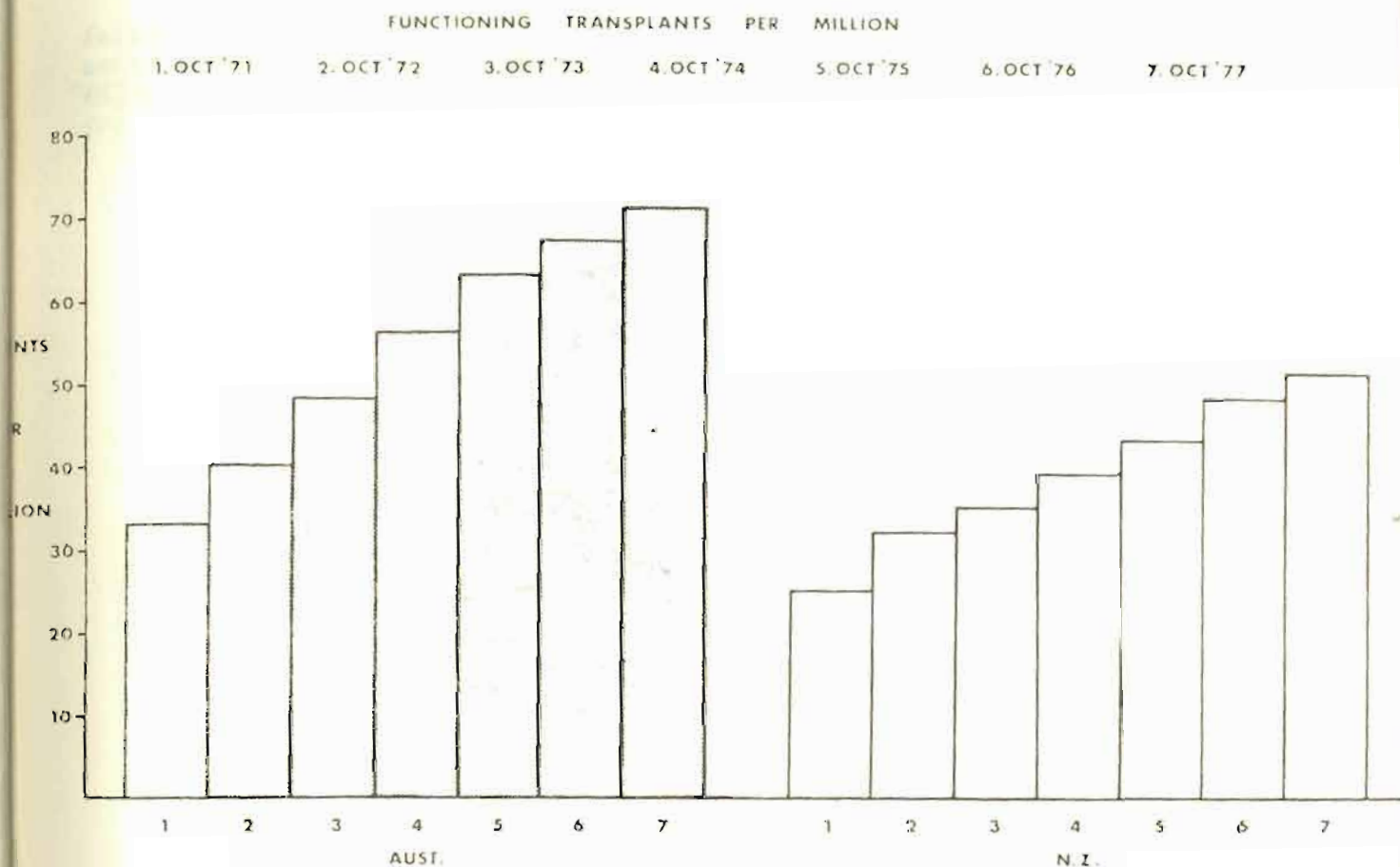


TABLE 5

FUNCTIONING GRAFTS AS AT 31.10.77

	CAD	LD	TOTAL	PER MILLION
AUST.	971	38	1009	71
N.S.W.	428	17	445	86
VIC.	220	17	237	62
QLD.	115	1	116	54
S.A.	114	1	115	90
W.A.	82	0	82	68
TAS.	12	2	14	35
N.Z.	151	7	158	51

CAUSE OF GRAFT FAILURE

Table 6 lists the causes of graft failure in 99 Australian grafts only which failed between May and October 1977. Points of interest are the fact that hyperacute rejection is still being seen (4%) Rejection accounts for almost all (except 6%) graft failure when the recipient is returned to dialysis. Patient death accounted for 31% of graft failure in this period.

TABLE 6CAUSES OF 99 GRAFTS LOST (AUSTRALIA ONLY)BETWEEN MAY - OCTOBER 1977

<u>GRAFT FAILURE -</u>		
<u>REJECTION -</u>		63%
HYPERACUTE	- 4%	
ACUTE	- 30%	
SUBACUTE	- 13%	
CHRONIC	- 16%	
<u>MISCELLANEOUS -</u>		6%
FUNCTIONING GRAFT AT PATIENT DEATH		31%
<u>TOTAL</u>		100%

PATIENT DEATH

The total numbers of deaths in the last survey period are listed in Table 7 and crude death rates expressed. This figure does not allow for the increased death rate in the first year of transplant follow-up. The next registry report will include a more precise analysis.

TABLE 7TRANSPLANT PATIENT DEATH: FUNCTIONING GRAFT MAY - OCT. 1977

COUNTRY	NUMBER OF DEATHS	NUMBER OF TRANSPLANTS AT RISK	DEATH RATE PER 100
AUSTRALIA	30	1108	2.7
NEW ZEALAND	7	179	3.9

CAUSE OF PATIENT DEATH

The cause of death in the 37 patients dying between May and October, 1977 are shown in Table 8. Cardiac deaths predominate and it is of concern that malignancy is now ranking equal second with infection as a cause, although the total number is small in each category.

TABLE 8

TRANSPLANT PATIENT - CAUSE OF DEATH: FUNCTIONING GRAFT

MAY - OCTOBER, 1977

	AUSTRALIA 30 PATIENTS	NEW ZEALAND 7 PATIENTS
CARDIAC	30%	16%
INFECTION	17	28
MALIGNANCY	17	0
VASCULAR	10	28
SUICIDE	10	0
OTHER	16	28