

HEALTH AND MEDICAL RESEARCH

INTRODUCTION

The account of medical developments in Victoria covered by this Chapter is divided into two major segments: the first deals with government initiatives—Commonwealth and State, and institutional care; the second deals with the practice of medicine in the community and the major specialities deriving from this, as well as changes in medical research, pharmacy, substance addiction, dentistry, and nursing.

The perspective taken by this Chapter is influenced by the notion of “input”, namely, the various forms of effort that went into medical pursuits during the fifty years. This can be factually recorded. The other side of the coin—“output”—the results of such medical effort, is less easy to describe, let alone evaluate.

MORTALITY AND MORBIDITY

In 1934, a man’s life expectancy was 64 years, while in the case of a woman, it was 67 years. Forty years later the male expectation had increased to 70 years while the female expectancy was 77 years. As in all developed countries, although the natural span of life did not increase greatly from the biblical “three score years and ten”, the chance of a child living out this natural span did increase.

LIFE EXPECTANCY: AUSTRALIA, 1932-1934 AND 1975-1977

Persons aged (years)	Expected years of life			
	At 1932-1934		At 1975-1977	
	Male	Female	Male	Female
0	64	67	70	77
10	58	61	61	68
20	48	52	51	58
30	40	43	42	48
40	31	34	33	39
50	23	26	24	30
60	16	18	16	21
70	10	14	10	14

In persons aged 65 years and over, the major causes of death are heart disease, cancer, and stroke, in that order. This order has not changed since 1934, but there have been considerable changes within disease categories. In the 1930s, ischaemic heart disease had not assumed the importance it has today. Because of changing diagnostic fashions in this, as in virtually all other diseases, it is difficult to make precise comparisons, but it is considered that what has been termed “the modern epidemic” began its climb to prominence in the 1950s. During the early 1970s, ischaemic heart disease accounted for approximately 35 per cent of all male deaths over the age of 65, and 31 per cent of all corresponding female deaths. However, the steady rise in mortality from this disease over the previous two or three decades halted, and in 1982 accounted for about 31 per cent of all male deaths and 28 per cent of all female deaths in the 65 and over age group.

One of the disappointments in medical progress since 1934 has been a failure to make substantial inroads into cancer as a cause of death, although there have been advances in a number of areas. The latter include certain forms of leukaemia and lymphomas while, except for melanoma, death from skin cancer is now uncommon. Changes have occurred in the patterns of the different forms of cancer, most noticeably the marked rise in mortality from lung cancer in men and more recently in women. Although cause and effect relationships need to be made very cautiously, the fall in cervical cancer mortality has coincided with a period of active presymptomatic screening of women for this form of cancer.

In cardiovascular disease the outlook is more optimistic, because there has been a steady decline in deaths in the last fifty years and the incidence of new cases is also falling. An interpretation is that a natural decline has been accelerated by the development of safe, effective treatment for high blood pressure.

Progress with communicable diseases has been spectacular. As an example, pulmonary tuberculosis in 1934 was responsible for 753 deaths. By 1982, the number had reduced to 27. The numbers of accidental and violent deaths increased by 75 per cent between 1934 and 1982, largely due to deaths from road accidents.

The major gains in health as measured by mortality have been in the very young. The infant mortality rate, the number of deaths in children aged less than one year per 1,000 live births, fell from 47.2 in 1934 to 10.7 in 1982. Although much of this improvement may be attributed to control of the infectious diseases, it is worth noting that deaths in infants under one week fell from 22.3 per 1,000 live births to 5.6 over the period. This change is due to improved ante-natal, obstetric, and neonatal care. Diseases in which infection plays a major part accounted for some 12 or 13 per cent of deaths in infants under one year in the early 1980s. In the 1930s, if the term "wasting disease" [*sic*] is included, the proportion was 32 per cent. Better medical care and the availability of antibiotics are dominant factors in this improvement, but it is also important to note that infant welfare centres have played a major role in the prevention of the previously common diseases of infancy. In the older child, immunisation programmes have almost eliminated deaths from poliomyelitis, whooping cough and, predominantly, diphtheria. In 1934 diphtheria alone was responsible for the deaths of no fewer than 65 Victorian children.

Changing death rates are only one index of a changing health status, and prevention of death is only one part of the task of the helping professions. To assess properly advances in care, account must be taken of the great progress in analgesia and in anaesthesia, as well as the many developments in drug treatment, one of the most important of which has been the introduction of psychotropic drugs, enabling thousands of persons, who would previously have spent their lives in mental hospitals, to function in the community.

CAUSES OF DEATH: VICTORIA, 1935 TO 1982 (a)
(number)

Year	Causes of death																	Total
	Infectious and parasitic diseases	Cerebro-vascular disease	Heart disease	Other circulatory disease	Malignant neoplasms	Diseases of the respiratory system	Diseases of the digestive system	Diseases of the genito-urinary system	Endocrine, nutritional, and metabolic diseases	Perinatal and congenital conditions	Complications of pregnancy, childbirth, and the puerperium	All other diseases	Motor vehicle accidents	Other accidents	Homicide	Suicide	All other external causes (b)	
									MALES									
1935	689	399	2,779		1,106	1,192	544	787	129	457	..	874	271	488	15	125	1	9,856
1940	728	698	3,251		1,270	1,186	543	951	175	494	..	758	370	387	10	109	—	10,930
1945	592	824	3,899		1,338	859	443	869	155	488	..	614	148	325	9	84	—	10,647
1950	455	1,028	3,968	554	1,563	912	454	603	142	476	..	633	481	364	14	134	—	11,781
1955	279	1,209	4,237	557	1,715	859	481	454	157	494	..	493	469	416	16	148	2	11,986
1960	160	1,281	5,051	673	1,989	1,107	436	361	174	600	..	409	537	402	22	171	3	13,376
1965	147	1,584	6,014	643	2,376	1,329	448	341	375	556	..	330	669	382	20	233	6	15,453
1970	142	1,670	6,201	656	2,786	1,570	400	270	339	531	..	337	808	485	25	252	—	16,472
1975	98	1,609	6,028	645	3,142	1,341	428	201	332	384	..	507	642	399	33	243	2	16,034
1980	74	1,525	5,713	557	3,756	1,270	539	183	274	269	..	495	607	414	51	320	—	16,047
1981	70	1,449	5,561	546	3,811	1,279	526	165	312	258	..	528	488	359	21	317	1	15,691
1982	74	1,403	5,660	524	3,879	1,647	595	151	273	295	..	602	583	414	58	325	10	16,493
									FEMALES									
1935	536	544	2,437		1,221	961	428	600	267	358	131	852	56	159	9	41	—	8,600
1940	498	1,021	2,691		1,338	823	448	734	284	349	129	760	101	150	2	35	—	9,363
1945	407	1,236	3,224		1,505	739	359	577	342	375	78	759	43	155	3	47	—	9,849
1950	215	1,749	3,178	719	1,646	689	376	320	275	377	43	658	82	174	7	52	—	10,560
1955	134	1,850	3,303	753	1,817	513	332	203	327	407	31	482	117	214	11	47	—	10,541
1960	83	1,942	3,652	708	1,912	570	354	183	274	478	16	471	205	225	12	86	—	11,171
1965	80	2,269	4,269	733	2,031	658	339	202	489	422	23	368	238	330	15	112	—	12,578
1970	94	2,576	4,662	830	2,390	707	330	206	421	396	18	451	289	348	23	122	—	13,863
1975	87	2,399	4,471	815	2,636	639	348	147	364	284	4	521	252	359	15	124	—	13,465
1980	75	2,157	4,455	663	2,896	701	432	162	335	216	6	519	246	315	31	118	—	13,327
1981	80	2,164	4,447	676	2,954	715	402	169	406	214	4	559	231	194	20	108	—	13,343
1982	85	2,191	4,686	671	3,060	902	473	171	355	249	8	664	202	243	21	136	1	14,118
									TOTAL									
1935	1,225	943	5,216		2,327	2,153	972	1,387	396	815	131	1,726	327	647	24	166	1	18,456
1940	1,226	1,719	5,942		2,608	2,009	991	1,685	459	843	129	1,518	471	537	12	144	—	20,293
1945	999	2,060	7,123		2,843	1,598	802	1,446	497	863	78	1,373	191	480	12	131	—	20,496
1950	670	2,777	7,146	1,273	3,209	1,601	830	923	417	853	43	1,291	563	538	21	186	—	22,341
1955	413	3,059	7,540	1,310	3,532	1,372	813	657	484	901	31	975	586	630	27	195	2	22,527
1960	243	3,223	8,703	1,381	3,901	1,677	790	544	448	1,078	16	880	742	627	34	257	3	24,547
1965	227	3,853	10,283	1,376	4,407	1,987	787	543	864	978	23	698	907	712	35	345	6	28,031
1970	236	4,246	10,863	1,486	5,176	2,277	730	476	760	927	18	788	1,097	833	48	374	—	30,335
1975	185	4,008	10,499	1,460	5,778	1,980	776	348	696	668	4	1,028	894	758	48	367	2	29,499
1980	149	3,682	10,168	1,220	6,652	1,971	971	345	609	485	6	1,014	853	729	82	438	—	29,374
1981	150	3,613	10,008	1,222	6,765	1,994	928	334	718	472	4	1,087	719	553	41	425	1	29,034
1982	159	3,594	10,346	1,195	6,939	2,549	1,068	322	628	544	8	1,266	785	657	79	461	11	30,611

(a) The grouping of diseases into the various categories may differ slightly due to the classification changes in successive International Classification of Diseases (ICD) manuals.
(b) Includes cases where the injury was undetermined whether accidental or intentional.

CAUSES OF DEATH: VICTORIA, 1935 TO 1982 (a)
(per cent)

Year	Causes of death																Total	
	Infectious and parasitic diseases	Cerebrovascular disease	Heart disease	Other circulatory disease	Malignant neoplasms	Diseases of the respiratory system	Diseases of the digestive system	Diseases of the genitourinary system	Endocrine, nutritional, and metabolic diseases	Perinatal and congenital conditions	Complications of pregnancy, childbirth, and the puerperium	All other diseases	Motor vehicle accidents	Other accidents	Homicide	Suicide		All other external causes (b)
	MALES																	
1935	7.0	4.0	28.2		11.2	12.1	5.5	8.0	1.3	4.6	..	8.9	2.7	5.0	0.2	1.3	—	100
1940	6.7	6.4	29.7		11.6	10.9	5.0	8.7	1.6	4.5	..	6.9	3.4	3.5	0.1	1.0	—	100
1945	5.6	7.7	36.6		12.6	8.1	4.2	8.2	1.5	4.6	..	5.8	1.4	3.1	0.1	0.8	—	100
1950	3.9	8.7	33.7	4.7	13.3	7.7	3.9	5.1	1.2	4.0	..	5.4	4.1	3.1	0.1	1.1	—	100
1955	2.3	10.1	35.3	4.6	14.3	7.2	4.0	3.8	1.3	4.1	..	4.1	3.9	3.5	0.1	1.2	—	100
1960	1.2	9.6	37.8	5.0	14.9	8.3	3.3	2.7	1.3	4.5	..	3.1	4.0	3.0	0.2	1.3	—	100
1965	1.0	10.3	38.9	4.2	15.4	8.6	2.9	2.2	2.4	3.6	..	2.1	4.3	2.5	0.1	1.5	—	100
1970	0.9	10.1	37.6	4.0	16.9	9.5	2.4	1.6	2.1	3.2	..	2.0	4.9	2.9	0.2	1.5	—	100
1975	0.6	10.0	37.6	4.0	19.6	8.4	2.7	1.3	2.1	2.4	..	3.2	4.0	2.5	0.2	1.5	—	100
1980	0.5	9.5	35.6	3.5	23.4	7.9	3.4	1.1	1.7	1.7	..	3.1	3.8	2.6	0.3	2.0	—	100
1981	0.4	9.2	35.4	3.5	24.3	8.2	3.4	1.1	2.0	1.6	..	3.4	3.1	2.3	0.1	2.0	—	100
1982	0.4	8.5	34.3	3.2	23.5	10.0	3.6	0.9	1.7	1.8	..	3.7	3.5	2.5	0.4	2.0	0.1	100
	FEMALES																	
1935	6.2	6.3	28.3		14.2	11.2	5.0	7.0	3.1	4.2	1.5	9.9	0.7	1.8	0.1	0.5	—	100
1940	5.3	10.9	28.7		14.3	8.8	4.8	7.8	3.0	3.7	1.4	8.1	1.1	1.6	—	0.4	—	100
1945	4.1	12.5	32.7		15.3	7.5	3.6	5.9	3.5	3.8	0.8	7.7	0.4	1.6	—	0.5	—	100
1950	2.0	16.6	30.1	6.8	15.6	6.5	3.6	3.0	2.6	3.6	0.4	6.2	0.8	1.6	0.1	0.5	—	100
1955	1.3	17.6	31.3	7.1	17.2	4.9	3.1	1.9	3.1	3.9	0.3	4.6	1.1	2.0	0.1	0.4	—	100
1960	0.7	17.4	32.7	6.3	17.1	5.1	3.2	1.6	2.5	4.3	0.1	4.2	1.8	2.0	0.1	0.8	—	100
1965	0.6	18.0	33.9	5.8	16.1	5.2	2.7	1.6	3.9	3.4	0.2	2.9	1.9	2.6	0.1	0.9	—	100
1970	0.7	18.6	33.6	6.0	17.2	5.1	2.4	1.5	3.0	2.9	0.1	3.3	2.1	2.5	0.2	0.9	—	100
1975	0.6	17.8	33.2	6.1	19.6	4.7	2.6	1.1	2.7	2.1	—	3.9	1.9	2.7	0.1	0.9	—	100
1980	0.6	16.2	33.4	5.0	21.7	5.3	3.2	1.2	2.5	1.6	—	3.9	1.8	2.4	0.2	0.9	—	100
1981	0.6	16.2	33.3	5.1	22.1	5.4	3.0	1.3	3.0	1.6	—	4.2	1.7	1.5	0.2	0.8	—	100
1982	0.6	15.5	33.2	4.8	21.7	6.4	3.4	1.2	2.5	1.8	0.1	4.7	1.4	1.7	0.1	1.0	—	100
	TOTAL																	
1935	6.6	5.1	28.3		12.6	11.7	5.3	7.5	2.1	4.4	0.7	9.4	1.8	3.5	0.1	0.9	—	100
1940	6.0	8.5	29.3		12.9	9.9	4.9	8.3	2.3	4.2	0.6	7.5	2.3	2.6	0.1	0.7	—	100
1945	4.9	10.1	34.8		13.9	7.8	3.9	7.1	2.4	4.2	0.4	6.7	0.9	2.3	0.1	0.6	—	100
1950	3.0	12.4	32.0	5.7	14.4	7.2	3.7	4.1	1.9	3.8	0.2	5.8	2.5	2.4	0.1	0.8	—	100
1955	1.8	13.6	33.5	5.8	15.7	6.1	3.6	2.9	2.1	4.0	0.1	4.3	2.6	2.8	0.1	0.9	—	100
1960	1.0	13.1	35.5	5.6	15.9	6.8	3.2	2.2	1.8	4.4	0.1	3.6	3.0	2.6	0.1	1.0	—	100
1965	0.8	13.7	36.7	4.9	15.7	7.1	2.8	1.9	3.1	3.5	0.1	2.5	3.2	2.5	0.1	1.2	—	100
1970	0.8	14.0	35.8	4.9	17.1	7.5	2.4	1.6	2.5	3.3	0.1	2.6	3.6	2.7	0.2	1.2	—	100
1975	0.6	13.6	35.6	4.9	19.6	6.7	2.6	1.2	2.4	2.3	—	3.5	3.0	2.6	0.2	1.2	—	100
1980	0.5	12.5	34.6	4.2	22.6	6.7	3.3	1.2	2.1	1.7	—	3.5	2.9	2.5	0.3	1.5	—	100
1981	0.5	12.4	34.5	4.2	23.3	6.9	3.2	1.2	2.5	1.6	—	3.7	2.5	1.9	0.1	1.5	—	100
1982	0.5	11.7	33.8	3.9	22.7	8.3	3.5	1.1	2.1	1.8	—	4.1	2.6	2.1	0.3	1.5	—	100

(a) The groupings of diseases into the various categories may differ slightly due to the classification changes in successive International Classification of Diseases (ICD) manuals.

(b) Includes cases where the injury was undetermined whether accidental or intentional.

DEATH BY MAIN CAUSE BY AGE GROUPS: VICTORIA, 1982

Code (a)	Age group and cause of death	Deaths from specified cause			
		In age group		At all ages	
		Number	Per cent	Number	Per cent (b)
Under 1 year					
S 48	Congenital anomalies	224	34.9	296	75.7
S 50	Hypoxia, birth asphyxia, and other respiratory conditions	159	24.8	159	100.0
S 52	Signs, symptoms, and ill-defined conditions (includes sudden death, cause unknown)	109	17.0	155	70.3
S 51	Other conditions originating in the perinatal period	83	12.9	83	100.0
1-4 years					
S 55-56	Accidental falls and all other accidents	38	34.9	523	7.3
S 54	Motor vehicle traffic accidents	18	16.5	769	2.3
S 48	Congenital anomalies	13	11.9	296	4.4
S 11-20	Malignant neoplasms	10	9.2	6,939	0.1
5-9 years					
S 54	Motor vehicle traffic accidents	27	27.6	769	3.5
S 11-20	Malignant neoplasms	19	19.4	6,939	0.3
S 55-56	Accidental falls and all other accidents	19	19.4	523	3.6
S 48	Congenital anomalies	5	5.1	296	1.7
10-14 years					
S 54	Motor vehicle traffic accidents	29	30.2	769	3.8
S 55-56	Accidental falls and all other accidents	18	18.8	523	3.4
S 11-20	Malignant neoplasms	12	12.5	6,939	0.2
S 48	Congenital anomalies	10	10.4	296	3.4
15-19 years					
S 54	Motor vehicle traffic accidents	127	52.5	769	16.5
S 55-56	Accidental falls and all other accidents	26	10.7	523	5.0
S 11-20	Malignant neoplasms	22	9.1	6,939	0.3
S 57	Suicide	14	5.8	461	3.0
20-24 years					
S 54	Motor vehicle traffic accidents	142	45.5	769	18.5
S 57	Suicide	54	17.3	461	11.7
S 11-20	Malignant neoplasms	32	10.3	6,939	0.5
S 55-56	Accidental falls and all other accidents	28	9.0	523	5.4
25-29 years					
S 54	Motor vehicle traffic accidents	73	24.9	769	9.5
S 57	Suicide	66	22.5	461	14.3
S 11-20	Malignant neoplasms	29	9.9	6,939	0.4
S 55-56	Accidental falls and all other accidents	27	9.2	523	5.2
30-34 years					
S 11-20	Malignant neoplasms	56	22.4	6,939	0.8
S 54	Motor vehicle traffic accidents	44	17.6	769	5.7
S 57	Suicide	37	14.8	461	8.0
S 55-56	Accidental falls and all other accidents	20	8.0	523	3.8
35-39 years					
S 11-20	Malignant neoplasms	80	25.8	6,939	1.2
S 57	Suicide	38	12.3	461	8.2
S 54	Motor vehicle traffic accidents	37	11.9	769	4.8
S 55-56	Accidental falls and all other accidents	32	10.3	523	6.1
40-44 years					
S 11-20	Malignant neoplasms	136	35.3	6,939	2.0
S 30-31	Ischaemic heart disease	68	17.7	8,284	0.8
S 57	Suicide	30	7.8	461	6.5
S 55-56	Accidental falls and all other accidents	26	6.8	523	5.0

DEATH BY MAIN CAUSE BY AGE GROUPS: VICTORIA, 1982—*continued*

Code (a)	Age group and cause of death	Deaths from specified cause			
		In age group		At all ages	
		Number	Per cent	Number	Per cent (b)
45-49 years					
S 11-20	Malignant neoplasms	247	35.8	6,939	3.6
S 30-31	Ischaemic heart disease	156	22.6	8,284	1.9
S 33	Cerebrovascular disease	35	5.1	3,594	1.0
S 57	Suicide	34	4.9	461	7.4
50-54 years					
S 11-20	Malignant neoplasms	478	39.2	6,939	6.9
S 30-31	Ischaemic heart disease	308	25.3	8,284	3.7
S 33	Cerebrovascular disease	67	5.5	3,594	1.9
S 42	Chronic liver disease and cirrhosis	54	4.4	342	15.8
55-59 years					
S 11-20	Malignant neoplasms	709	37.1	6,939	10.2
S 30-31	Ischaemic heart disease	554	29.0	8,284	6.7
S 33	Cerebrovascular disease	121	6.3	3,594	3.4
S 42	Chronic liver disease and cirrhosis	58	3.0	342	17.0
60-64 years					
S 11-20	Malignant neoplasms	851	34.9	6,939	12.3
S 30-31	Ischaemic heart disease	747	30.6	8,284	9.0
S 33	Cerebrovascular disease	174	7.1	3,594	4.8
S 32	Other forms of heart disease	67	2.7	1,638	4.1
65-69 years					
S 30-31	Ischaemic heart disease	1,145	35.3	8,284	13.8
S 11-20	Malignant neoplasms	999	30.8	6,939	14.4
S 33	Cerebrovascular disease	203	6.3	3,594	5.6
S 38	Bronchitis, emphysema and asthma	92	2.8	725	12.7
70-74 years					
S 30-31	Ischaemic heart disease	1,311	32.3	8,284	15.8
S 11-20	Malignant neoplasms	1,066	26.3	6,939	15.4
S 33	Cerebrovascular disease	444	10.9	3,594	12.4
S 32	Other forms of heart disease	137	3.4	1,638	8.4
75 years and over					
S 30-31	Ischaemic heart disease	4,047	28.3	8,284	48.9
S 33	Cerebrovascular disease	2,399	16.8	3,594	66.8
S 11-20	Malignant neoplasms	2,191	15.3	6,939	31.6
S 32	Other forms of heart disease	1,175	8.2	1,638	71.7

(a) A short list of abbreviated causes of death as recommended by the World Health Organisation.

(b) Deaths in age groups from the stated cause expressed as a percentage of all deaths from that cause.

INFANT DEATH RATES BY AGE: VICTORIA, 1935 TO 1982

Year	Deaths under one year per 1,000 live births					Total
	Under one week	One week and under one month	One month and under three months	Three months and under six months	Six months and under twelve months	
1935	21.9	5.7	4.2	3.6	5.8	41.2
1940	20.9	5.6	4.6	3.5	4.9	39.5
1945	17.6	3.5	2.4	1.9	2.6	28.0
1950	12.6	2.1	1.6	1.8	2.0	20.1
1955	11.7	1.8	1.5	1.7	1.7	18.4
1960	12.0	1.7	1.5	1.6	1.6	18.5
1965	11.0	1.7	1.5	1.6	1.7	17.5
1970	9.5	1.1	1.6	1.2	1.0	14.5
1975	7.5	1.3	1.4	1.7	1.1	13.0
1980	5.3	1.3	1.1	1.4	1.1	10.2
1981	4.9	1.3	1.3	1.1	0.9	9.4
1982	5.6	1.5	1.2	1.4	1.1	10.7

INFANT DEATHS AT CERTAIN AGES AND RATES(a) BY SEX:
VICTORIA, 1935 TO 1982

Year	Age at death										Total	
	Under one week		One week and under one month		One month and under three months		Three months and under six months		Six months and under twelve months			
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
	MALES											
1935	335	23.6	101	7.1	70	4.9	55	3.9	78	5.5	639	45.0
1940	386	23.5	105	6.4	89	5.4	65	4.0	91	5.6	736	44.9
1945	420	19.8	84	4.0	61	2.9	45	2.1	60	2.8	670	31.6
1950	361	14.1	53	2.1	37	1.4	52	2.0	57	2.2	560	21.9
1955	374	12.9	58	2.0	49	1.7	55	1.9	46	1.6	582	20.1
1960	432	13.2	64	1.9	61	1.9	60	1.8	64	1.9	681	20.7
1965	414	12.7	54	1.7	52	1.6	57	1.8	46	1.4	623	19.2
1970	405	10.8	42	1.1	58	1.6	61	1.6	39	1.0	605	16.2
1975	271	8.5	51	1.6	48	1.5	69	2.2	36	1.1	475	14.9
1980	176	5.9	37	1.2	34	1.1	50	1.7	29	1.0	326	10.9
1981	162	5.3	39	1.3	48	1.6	33	1.1	27	0.9	309	10.2
1982	188	6.1	48	1.6	39	1.3	54	1.8	33	1.1	362	11.8
	FEMALES											
1935	276	20.2	58	4.2	46	3.4	44	3.2	85	6.2	509	37.2
1940	283	18.2	72	4.6	58	3.7	48	3.1	64	4.1	525	33.7
1945	307	15.4	59	3.0	38	1.9	35	1.8	46	2.3	485	24.3
1950	267	11.0	52	2.1	42	1.7	35	1.4	45	1.9	441	18.2
1955	286	10.4	42	1.5	37	1.3	41	1.5	47	1.7	453	16.5
1960	338	10.8	44	1.4	37	1.2	41	1.3	41	1.3	501	16.1
1965	286	9.2	53	1.7	43	1.4	42	1.4	62	2.0	486	15.6
1970	292	8.2	39	1.1	58	1.6	30	0.8	36	1.0	455	12.8
1975	192	6.4	32	1.1	37	1.2	37	1.2	33	1.1	331	11.0
1980	130	4.6	38	1.3	30	1.1	32	1.1	36	1.3	266	9.4
1981	132	4.5	36	1.2	30	1.0	30	1.0	25	0.9	253	8.7
1982	146	5.0	42	1.4	33	1.1	28	1.0	30	1.0	279	9.5

(a) Number of deaths in each age group per 1,000 live births for each sex.

The Australian Bureau of Statistics conducted an Australian Health Survey during the period July 1977 to June 1978 on a random sample of approximately 15,000 private dwellings. Persons were interviewed about their illnesses and their use of health services. The survey indicated that 36 per cent of the Victorian population reported no illness in the two weeks prior to interview whilst 64 per cent had conditions ranging from ailments such as colds, headaches, and upset stomachs to more serious illnesses such as bronchitis, arthritis, and heart disease.

COMMONWEALTH GOVERNMENT HEALTH SERVICES

The last fifty years have been marked by a progressively increasing involvement of the Commonwealth Government in health services, particularly in the subsidy of direct costs. The Commonwealth Health Department, originally established in Melbourne, moved its central office to Canberra in 1934 and at that time divisional offices were established in all States.

Until 1961, the Health Department controlled the Commonwealth Serum Laboratories, which had been established in 1916. They were then vested in a separate commission responsible to the Minister for Health. Ten years after their formation, in 1926, the Federal Health Council was formed, to be enlarged in 1936 and its name changed to the National Health and Medical Research Council. The Commonwealth Radiation Laboratory was established in 1927, subsequently expanded and, after two changes of name, became the Australian Radiation Laboratory. In 1946, the Dental Research Laboratory was established in the University of Melbourne and later became the Australian Dental Standards Laboratory, situated at Abbotsford. In 1948, the Commonwealth Acoustic Laboratories were formed to provide a hearing conservation programme for deaf children.

A feature of the 1930s was the increasing interest displayed by the Commonwealth Government in providing some type of national health insurance scheme. In 1938 a controversial Act establishing such a scheme was passed but, because of intense opposition,

was abandoned prior to coming into operation. Subsequently, a total of nine reports by a Joint Parliamentary Committee formed the basis of the decision by the Commonwealth Government to introduce a National Health Service. However, consequential Pharmaceutical Benefits Acts foundered when challenged in the High Court by the Australian Branch of the British Medical Association, and were declared invalid during the 1940s.

With the change of Commonwealth Government in 1949, the principle of providing benefits was retained and carried a promise of establishing a comprehensive scheme for national health. Following agreement with the Australian Branch of the British Medical Association, the Pharmaceutical Guild, and the friendly societies, the National Health Act was passed in 1953 and pharmaceutical benefits were provided to the general population. Initially restricted to life saving and disease preventing drugs, the pharmaceutical list has steadily expanded over the ensuing years although, with the exception of eligible persons in receipt of a pension, a patient contribution has been mandatory since 1960.

The National Health Act also provided for hospital and medical benefits. At first the amount of Commonwealth Government assistance for hospital benefits was relatively small, but increased when additional coverage was made for those suffering from long-term illness. In respect of medical benefits the Commonwealth Government contribution, originally one-third of the medical fee, was altered in 1970 with the introduction of a plan based on lists of most common fees for the whole range of medical services. Where the common fee was charged, the patient contribution was not to exceed \$5, even for the most costly operation and the services associated with it.

Preceding the National Health Act, a Pensioner Medical Service was introduced in 1950 which, in addition to the provision of pharmaceuticals free of charge to pensioners and their dependants, provided a general practitioner service on a fee for voucher system.

In 1972, a temporary transfer of a number of Commonwealth Health Department activities to the new Department of Social Security (formerly Social Services) occurred. A Health Insurance Commission was introduced and "Medibank" offices were established throughout Victoria and commenced operation from July 1974, covering the payment of basic medical and hospital benefits. Reassessment of the Commonwealth Government role after 1975 resulted in a progressive return to voluntary health insurance. The "Medicare" system was introduced in February 1984.

In March of each year from 1979 on, Health Insurance Surveys were conducted throughout Australia by the Australian Bureau of Statistics to obtain information about levels of health insurance cover in the community.

The following table gives details of health insurance from March 1979 to March 1982:

HEALTH INSURANCE: VICTORIA, 1979 TO 1982

Year	Type of health insurance (a)					Total Insured	Uninsured	Total	
	Hospital and medical	Hospital only	Medical only	Ancillary only	Not known				
	CONTRIBUTOR UNITS ('000)								
1979	946.9	90.6	16.4	6.6	81.3	1,141.9	552.7	1,694.6	
1980(b)	905.5	88.4	28.6	8.3	70.3	1,101.1	637.6	1,738.6	
1980(c)	960.3	91.7	30.0	8.3	10.7	1,101.1	637.6	1,738.6	
1981	894.2	92.8	29.9	7.0	10.2	1,034.1	715.2	1,749.4	
1982	1,118.7	134.9	7.6	(d)	18.1	1,281.2	523.0	1,804.2	
	PER CENT OF CONTRIBUTOR UNITS								
1979	55.9	5.3	1.0	0.4	4.8	67.4	32.6	100.0	
1980(b)	52.1	5.1	1.6	0.5	4.0	63.3	36.7	100.0	
1980(c)	55.2	5.3	1.7	0.5	0.6	63.3	36.7	100.0	
1981	51.1	5.3	1.7	0.4	0.6	59.1	40.9	100.0	
1982	62.0	7.5	0.4	(d)	1.0	71.0	29.0	100.0	

(a) Estimates for various categories of insured in 1979 are not directly comparable with those in subsequent years, because of differences in the definition of the category type of insurance not known. For further details see section 2, *Health Insurance Survey, Australia, March 1981* [4335.0].

(b) Using 1979 definitions (see section 2, paragraph 3[d] *Health Insurance Survey, Australia, March 1981* [4335.0]).

(c) Using 1980-81 definitions (see section 2, paragraph 3[d], *Health Insurance Survey, Australia, March 1981* [4335.0]).

(d) Sampling variability too high for practical purposes.

The following table shows details of contributor units and contribution rates, together with type of health insurance:

**TYPE OF HEALTH INSURANCE BY CONTRIBUTION RATE:
VICTORIA, MARCH 1982**

Type of health insurance	Contributor units (a)					
	Single rate		Family rate		Total	
	'000	Per cent	'000	Per cent	'000	Per cent
Insured —						
Hospital and medical	399.1	48.6	719.6	73.2	1,118.7	62.0
Hospital, no medical	81.2	9.9	53.7	5.5	134.9	7.5
Medical, no hospital	3.9	0.5	3.7	0.4	7.6	0.4
Ancillary only	(b)	(b)	(b)	(b)	(b)	(b)
Type of insurance not known (c)	10.4	1.3	7.6	0.8	18.1	1.0
Total insured	495.7	60.4	785.4	79.9	1,281.2	71.0
Uninsured	325.3	39.6	197.7	20.1	523.0	29.0
Total	821.0	100.0	983.1	100.0	1,804.2	100.0

(a) The term *contributor unit* refers to: an individual or a family who has taken out health insurance, or uninsured persons who, for purposes of comparison with the insured, have been grouped into potential contributor units on the basis of household composition.

(b) Sampling variability to high for practical purposes.

(c) *Type of insurance not known*— this category was used to describe the health insurance of contributor units where it was not known which type of cover (i.e., medical, hospital, or ancillary) they held, or where the details of the insurance organisation were not known. Included under this category are contributor units insured with organisations not registered under the National Health Act.

The Department of Veterans' Affairs (formerly the Repatriation Department) continues to provide a full range of services for medical care and treatment of eligible ex-servicemen and their dependants.

VICTORIAN GOVERNMENT HEALTH SERVICES

Public health

The public health activities of the Victorian Government were concentrated on infectious diseases during the 1930s and 1940s. After the war, increasing concern was shown in public health engineering, industrial hygiene, and the effects of environmental pollution.

The worst epidemic of poliomyelitis occurred in 1937. With the introduction of the Salk vaccine in 1953, followed by the live virus Sabin vaccine in 1959 the disease was virtually eliminated. Milk pasteurisation became mandatory in 1943 and resulted in a reduction in the incidence of infant diarrhoea, while similar success was achieved with tuberculosis after the introduction, in 1947, of mass radiography for the whole population, and of new and more effective drugs which enabled active disease to be controlled more quickly, and thus reduced the infecting "pool" in the community. Vaccination against measles and selective vaccination against rubella since 1970 have resulted in a marked decrease in the incidence of those infectious diseases.

The formation of the Industrial Hygiene Division within the Department of Health in 1938 led to the control of lead poisoning and, to a lesser extent, dust problems in the work place where sampling surveys, particularly for silica, were initiated in industries posing a potential health problem. Asbestosis of the lungs, from inhalation of certain fibres, became better recognised with a progressively increasing public awareness in the 1970s. There was also growing understanding of many other health hazards such as toxic chemicals, radioactive substances used in industry and medicine, and the effects of industrial and other noise in precipitating hearing loss.

Major contributions of the public health engineer in the control of disease include the provision of adequate water supplies, sanitary disposal of human and solid wastes, sewerage, drains, and supervision of slaughter houses and various trades. Stream pollution regulations proclaimed in 1936 provided valuable legal powers to control pollution, while control of slaughter houses was extended to rural areas by the proclamation of "meat areas". At the same time an effort was made to improve living conditions in the slum areas and set up standards of hygiene for dwellings. However, the rapid increase in population following

the end of the Second World War accentuated existing problems and industrialisation created new ones.

Fluoridation of water supplies in Victoria was first recommended in the 1960s and has progressively been introduced, but only after much public controversy. It has been marked by a significant achievement in the prevention of dental caries. At June 1982, it was estimated that approximately 66 per cent of the population was using artificially fluoridated water.

The growing awareness of air pollution led to the formation of the Clean Air Section of the Department of Health in 1959. It became apparent that emission standards for a number of gaseous and particulate pollutants must be assured, and resulted in the introduction of the Clean Air Regulations in 1958. There was also a significant step forward in preventing air pollution, arising initially from industrial establishments, and severely aggravated by the steadily increasing concentration of motor vehicles in the post-war period.

The upsurge of public concern about pollution of the environment evidenced in the 1960s was expressed legislatively in 1972 with the establishment of the Environment Protection Authority, and this body has been responsible for the disposal of waste and the administration of the Clean Air Act.

DEVELOPMENT AND PLANNING OF HOSPITAL SERVICES

Historical background

The development and planning of hospital services over the last 50 years has been characterised by a transformation from the generalised institutions of the 1930s to the specialised medical centres in the 1980s, designed specifically for the application of medical and general scientific techniques.

The key influences have been the proliferation of many new medical specialities, the introduction of technology in the treatment of disease, and the emergence of a wide range of new professions, whose members now work with medical practitioners as members of a 'health care team'. The cost of health care to government, and the community generally, has also emerged as a pressing problem and hospital costs are prominent.

In attempts to contain the rapidly escalating costs without denying the community the benefits of applied medical science and technology, various policies have been developed, aimed at rationalising the delivery of health care and hospital service. Other important developments such as the abolition of the honorary system of medical service, the introduction of the 40-hour working week for nurses, the restructuring of medical undergraduate teaching, the move towards greater centralisation of government direction and control of hospitals, and the development of community-based health services have taken place in this period.

Public hospital beds

The spread of specialist services, coupled with the rapid growth in population during the post-war years, resulted in a demand for more hospital beds. In 1934, Victoria was served by about 6,800 public hospital beds in some 66 hospitals. In 1982, the number of acute beds in public hospitals had risen to approximately 13,800, with the number of hospitals rising to 161 over the same period. The additional beds provided in country areas were achieved by increasing capacities of the country 'base' hospitals (in the larger provincial cities) by 1,030 beds, other larger country hospitals by 3,050, and the small country hospitals by 1,170. It is significant that the number of base hospitals has remained at 10, while the country hospitals with bed capacities over 25 increased from 24 to 52 and the number of small hospitals (under 25 beds) rose from 15 to 45 by 1982.

In the Melbourne metropolitan area, developments were greatly influenced by planning decisions made in the 1940s and 1950s by the Charities Board of Victoria and its successor, the Hospitals and Charities Commission, to establish a ring of acute general hospitals on the periphery of Melbourne. Thus, since 1934, the number of acute special and general public hospital beds in the Melbourne metropolitan area has increased by approximately 4,500, of which some 2,100 were met by the peripheral group. At the same time attention was given to the rebuilding, or extensive remodelling, of the old and long established

central city hospitals. The Royal Melbourne Hospital was rebuilt and opened on a new site in 1942 as were the Royal Children's and the Royal Dental Hospitals, both in 1963, together with the rebuilding on existing sites of the Alfred and Royal Women's Hospitals. Extensive remodelling was also undertaken at the Prince Henry's, St Vincent's, and the Royal Victorian Eye and Ear Hospitals.

New central hospitals to be established during the period were the Peter MacCallum Clinic for the treatment of cancer patients (1950) and the Mercy Maternity Hospital (1971). In 1960, with the opening of casualty and outpatient services, the Austin Hospital commenced its historic transition from its 80 year old role as a hospital for cancer and chronic diseases to an acute, general teaching hospital. By 1965, it signed an agreement with the University of Melbourne and in 1967 the first medical students were received into the new clinical school. A major rebuilding programme was undertaken to meet the changed role. In 1982, the decision was made to proceed with the building of a teaching hospital in association with Monash University.

NUMBER OF MEDICAL INSTITUTIONS: VICTORIA, 1934-35 TO 1981-82

Year	Hospitals (a)			Bush nursing centres (b)	Mental institutions (c)	
	Public	Bush nursing	Private		Public	Private
1934-35	66	45	n.a.	13	11	n.a.
1939-40	68	55	n.a.	11	12	n.a.
1944-45	72	64	n.a.	10	9	n.a.
1949-50	96	60	243	13	12	5
1954-55	117	44	237	14	14	5
1959-60	142	46	245	15	20	5
1964-65	154	39	298	18	27	5
1969-70	156	40	303	18	30	5
1974-75	159	39	300	20	42	5
1979-80	161	39	349	18	47	5
1980-81	161	39	361	18	47	5
1981-82	161	39	362	18	47	8

(a) Includes general hospitals, special hospitals, the Cancer Institute (established in 1949), sanatoria, auxiliary hospitals, convalescent hospitals, and hospitals for the aged, as defined by the Health Commission.

(b) These centres provided outpatient services (patients attend the centres) or nurses care for patients in their own homes.

(c) At 30 November includes outpatient clinics, mental retardation training centres, and alcohol and drug dependency rehabilitation centres.

Rationalisation of hospital services

Planning authorities sought to prevent costly duplication, particularly of high technology services, and to concentrate available resources in institutions which had the highest standards of professional care. The outstanding example of rationalisation was in the provision of a special institute for the centralised treatment of cancer, by radiation and other methods. The Anti-Cancer Council was incorporated in 1936, and in 1949 an Act to establish the Cancer Institute Board was passed. In 1950, the site in William Street, Melbourne, vacated by the transfer of the Queen Victoria Hospital to the old Royal Melbourne Hospital building in Lonsdale Street, Melbourne, was reserved for the new Institute. The treatment facilities were named the Peter MacCallum Clinic and renamed the Peter MacCallum Hospital in 1978. The Institute is Australia's only comprehensive specialist centre for treatment, research, and education in cancer and allied diseases and it is one of the few of its kind in the world.

From its earliest years the Austin Hospital has had an interest in spinal injuries and this was recognised formally in 1955 when the Spinal Unit of that hospital became the central service for Victoria. In 1960, the Victorian Plastic Surgery Unit was established as part of the new development of the Preston and Northcote Community Hospital, and was the first complete surgical unit of its type in Australia. At this time also, open heart surgery emerged as an important extension of cardiac surgery, first at the Alfred Hospital and progressively at the other major teaching hospitals. The special skills, technology, and equipment required for this work demanded a rational approach to the delivery of the service. As a result, two open heart surgical units were recognised as central units, one at the Alfred Hospital and the other at St Vincent's Hospital. Attempts to develop a similar approach to the treatment of renal failure gave rise to the recognition of the Royal

Melbourne Hospital as the major centre for kidney transplantation, and of the Austin Hospital as having a special interest in the treatment of chronic renal failure by the use of home dialysis.

Other examples of rationalisation include a Cytology (gynaecological) Unit at Prince Henry's Hospital (1969), a Tissue Typing Laboratory at the Royal Melbourne Hospital (1974), Regional Electronic Equipment Servicing Departments based at the Austin Hospital (1977) and the Royal Melbourne Hospital (1979), and Regional Pathology Services. In 1979, work commenced on a service tunnel beneath Victoria Parade, Melbourne between the St Vincent's and the Royal Victorian Eye and Ear Hospitals, with a view to sharing consumer services. It was completed in 1983.

In the area of general services a large central laundry development, based at the Royal Melbourne Hospital, commenced operation in 1953. By 1983, the Royal Melbourne Hospital Central Linen Service and Group Laundry was processing 280 tonnes of linen weekly for 73 hospitals and institutions, and is recognised as one of the largest institutional laundries in the southern hemisphere. In country areas laundries have been located regionally under the management of base hospitals.

Since 1955, the boiler house of the Royal Melbourne Hospital has provided the steam requirements, not only for that hospital and its Central Linen Service, but also for the Royal Children's Hospital, the Royal Dental Hospital, the Medical and Veterinary Schools of the University of Melbourne, and the adjacent facilities conducted by the Commonwealth Scientific and Industrial Research Organization.

Management

In 1934 State health services were divided between three authorities, the General Health Branch of the Department of Health, the Hospitals and Charities Board, and Mental Health Services. After the Second World War the latter two became the Hospitals and Charities Commission and the Mental Hygiene Authority, respectively, but responsibility remained divided between the three areas. By the 1970s, the need for greater control over the allocation of both Commonwealth and State Governmental funding became apparent. Although rationalisation of hospital services had been attempted with some success, a need became apparent to co-ordinate the previously separate areas of hospitals, mental health, and general (public) health.

As a result of this, the Victorian Government appointed Sir Colin Syme and the late Sir Lance Townsend in 1973 to conduct an inquiry into the health services of Victoria. As a result of the inquiry completed in 1975, the decision was made to establish one central authority for all aspects of health to replace the three authorities referred to above. This new authority, the Health Commission of Victoria, was proclaimed in December 1978, representing probably the most significant development in the administration of health services in the history of Victoria.

INSTITUTIONAL HEALTH CARE

Geriatric institutions

Until the beginning of the 1950s, health care for the elderly was provided mainly by general practitioners and at public hospitals. Many geriatric institutions which exist today are the successors of those which the State had provided for the custodial care of the indigent and underprivileged very early in the history of Victoria. For example, the Immigrants Aid Society established in 1854 later moved to Parkville and became known as the Mount Royal Special Hospital for the Aged, and benevolent asylums constructed in the mid-nineteenth century at Bendigo, Ballarat, Beechworth, and Bairnsdale, are now geriatric institutions.

Following the Second World War a geriatric centre was established at Caulfield (formerly a Repatriation Hospital), and the Greenvale Sanatorium, initially used for the treatment of tuberculosis, became the Greenvale Geriatric Centre in 1950. The Children's Orthopaedic Hospital at Mt Eliza was vacated in 1971 to become the Mt Eliza Geriatric Centre.

In the 1950s, geriatric institutions were concerned mainly with custodial care for the aged and physically disabled, and there was little medical or nursing care available. Most had long waiting lists, and selection for admission was based on the time the individual

had been waiting, rather than the actual need for long-term custodial care. However, towards the end of that decade a rehabilitation unit was started at the Mount Royal Special Hospital for the Aged, with the concept of making available rehabilitation services for elderly persons suffering from physical and mental disabilities, particularly those caused by stroke and arthritis.

There followed rapid development of rehabilitation services throughout most geriatric institutions and the establishment of day hospitals, initially within geriatric hospitals, and later outside in the community. Day centres were introduced as a method of supporting the community services of meals on wheels, home help, district nursing, and family relief. The implementation of a policy of encouraging elderly persons to remain at home, rather than admitting them to hospital, became effective after 1971.

Thus the role of the benevolent home has completely changed, with most geriatric institutions being involved in community care, particularly in the assessment, treatment, and support of the elderly in their own homes. Responsibility for long-term custodial care has been taken up by many private and church nursing homes.

POPULATION AGED 65 AND OVER: VICTORIA, 1971 TO 2021

Year	Males		Females		Persons	
	Number	Per cent (a)	Number	Per cent (a)	Number	Per cent (a)
1971	126,896	3.52	180,893	5.02	307,789	8.55
1981	162,874	4.12	230,244	5.83	393,118	9.96
1991	207,306	4.79	297,530	6.88	504,836	11.67
2001	232,251	4.99	340,511	7.32	572,762	12.31
2011	260,193	5.32	390,136	7.98	650,329	13.31
2021	329,810	6.48	498,899	9.81	828,709	16.29

(a) Percentage of total population.

(b) 1991 onwards based on Series A projections. For more information refer to *Projections of the Population of the States and Territories of Australia 1981 to 2021* (3214.0).

Mental health

The fifty year period has seen dramatic changes in the activities of mental health institutions from long-term custodial care to active psychological and physical rehabilitation and their involvement in community affairs.

During and after the Second World War the structural condition of the mental health buildings, and the staffing establishments, were grossly inadequate to meet needs. The Victorian Government established, in 1952, the Mental Hygiene Authority, with statutory powers to formulate, control, and direct general policy.

At this time there were only two receiving units, at Royal Park and Ballarat, ten long-term mental hospitals, six intellectual deficiency institutions, five day training centres for the mentally retarded, and four outpatient clinics. The Mental Hygiene (later to become Mental Health) Authority embarked on the development of several early treatment units, some of which were constructed in areas without previous psychiatric facilities, while others, more recently, have been built in close co-operation with the respective regional hospitals. In the mid-1970s, a community health programme was developed, with multi-disciplinary community mental health centres, located in shopping centres and residential areas.

Simultaneously, the overcrowded long-term mental hospitals were being upgraded, with new modern wards and a reduction in the number of beds, so that the custodial care, offered by the old asylum type institutions, has been replaced by a preventative and early treatment approach, bringing psychiatric care closer to the community.

The Mental Health Authority became the Mental Health Division of the Health Commission of Victoria in December 1978 and is responsible for psychiatric care of patients in the State. Services are organised on a regional basis, each region being served by an early treatment centre with attached long-term wards for the chronically ill and the psychogeriatric patients, by community mental health centres, and other community facilities.

MENTAL HEALTH: VICTORIA, 1935 TO 1982

Year	Number of institutions	Patients admitted	Total cases treated (under care)	Patients		Number of beds	Staff	
				Daily average	At end of year		Medical	Nursing
1935	11	895	8,229	6,107	7,548	6,298	26	1,397
1940	12	898	8,588	6,342	7,888	6,591	n.a.	n.a.
1945	9	918	8,367	6,280	7,863	6,710	35	949
1950 (a)	12	1,203	8,344	6,751	8,431	6,773	68	1,308
1955 (b)	14	4,037	13,815	7,543	9,261	7,393	n.a.	n.a.
1960	20	7,459	20,397	9,279	10,804	9,326	116	2,402
1965	27	9,160	23,394	9,440	11,247	9,695	136	2,788
1970	30	9,922	23,107	8,986	10,374	9,127	166	3,029
1975 (c)	42	11,260	23,720	8,057	9,322	8,309	n.a.	n.a.
1980 (c)(d)	36	10,976	18,533	4,473	5,287	4,808	179	2,085
1981 (c)	37	11,540	18,941	n.a.	5,221	4,799	190	2,095
1982 (c)	37	12,857	18,074	n.a.	5,077	4,495	190	2,095

(a) Year ended 31 March.

(b) 15 months ended 30 June.

(c) Year ended 30 June.

(d) Figures for the Mental Retardation Division of the Health Commission are excluded from 1979 onwards.

Source: Health Commission

Survey of Handicapped Persons

During February to May 1981 a survey was conducted, throughout Australia, by the Australian Bureau of Statistics, to obtain information about the nature and extent of various disabilities and handicaps in the Australian community. For Victoria the survey indicated that there were 535,700 persons (14 per cent) of the Victorian population who were disabled, of whom 341,800 were handicapped.

A disabled person was a person who had one or more defined disabilities or impairments which had lasted or were likely to last for 6 months or more. A handicapped person was a disabled person aged 5 years or more who was further identified as being limited to some degree in his or her ability to perform certain activities or tasks in relation to one or more of: self care, mobility, communication, schooling, and employment.

The following table sets out the number of disabled persons by type of disabling condition:

DISABLED PERSONS (a) BY TYPE OF DISABLING CONDITION: VICTORIA, 1981 ('000)

Type of disabling condition (b)	Households			Health establishments			Total		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Mental disorders other than retardation, degeneration or slow at learning	31.4	47.6	79.0	3.6	8.3	11.9	35.1	55.9	90.9
Mental retardation, mental degeneration due to brain damage, slow at learning and specific delays in development	14.9	8.5	23.4	3.0	3.5	6.5	17.9	12.0	29.9
Total with mental health disorders	44.8	55.4	100.2	5.7	10.6	16.4	50.5	66.1	116.6
Sight loss	22.7	20.1	42.8	1.3	5.2	6.4	24.0	25.3	49.3
Hearing loss	78.1	57.9	136.0	1.5	5.2	6.7	79.6	63.1	142.7
Nervous system disease	19.4	22.8	42.2	2.2	3.4	5.6	21.6	26.2	47.8
Circulatory disease	42.1	46.1	88.3	2.0	6.4	8.0	44.2	52.1	96.3
Respiratory disease	24.7	16.5	41.2	1.0	(c)	1.3	25.7	16.8	42.5
Musculoskeletal disease	76.9	78.7	155.7	1.9	6.3	8.2	78.8	85.1	163.9
Other physical conditions	57.3	52.5	109.8	2.1	6.7	8.9	59.4	59.2	118.7
Total with physical conditions	240.8	218.4	459.2	6.3	16.3	22.6	247.1	234.7	481.8
Total	265.0	244.7	509.7	8.0	18.0	26.0	273.0	262.7	535.7

(a) Includes those determined as being handicapped.

(b) Persons are shown against a condition category when any of five disabling conditions was classified to that category. Persons are shown against each total once only.

(c) Data suppressed due to high relative standard error.

Rehabilitation

In the 1930s, rehabilitation in institutional care was available at the Austin Hospital and the Children's Hospital at Mt Eliza for children suffering from orthopaedic disabilities. The Victorian Society for Crippled Children and Adults, established in 1935, and the Yooralla Hospital Society for Crippled Children (1917) were important organisations for the ongoing treatment of spastic and crippled young adults. In 1977, these two bodies merged to form the Yooralla Society of Victoria, a voluntary organisation providing services and facilities for the disabled in the State.

Adult rehabilitation services were mainly carried out in large teaching hospitals by masseurs, later to be called physiotherapists, in what are now known as units or departments of physical medicine. In 1957, the first special inpatient rehabilitation hospital was commenced at Hampton where, following surgical intervention, patients underwent intensive physical and psychological rehabilitation. Similar units were established at Caulfield and Mt Royal Special Hospital for the Aged. Later, the Royal Talbot Rehabilitation Centre commenced in 1968, while the Bolte Wing at St Vincent's Hospital was opened in 1974.

An important development has been the use of intensive therapy delivered and supervised by well organised teams, so that increasing numbers of impaired and disabled persons can be returned to participate actively in community activities.

MEDICAL PRACTICE

Before the Second World War, medical practitioners regarded themselves as an integral part of the community and expected to remain for long periods, if not the whole of their working lives, in one practice. At this time most general practitioners and specialists worked alone, the former usually in a surgery attached to, or forming part of, a private home, while the latter traditionally divided their time between hospital visiting and their consulting rooms in the city. Most specialists held honorary appointments at the public hospitals, incorporated in which was a commitment, over and above their responsibility for patient care, to guide and teach resident medical officers and medical students.

In 1934, there were only eight specialities apart from general medicine, surgery, and obstetrics. These were ophthalmology, otolaryngology, dermatology, obstetrics and gynaecology, urology, psychiatry, orthopaedics, and radiotherapy, while radiology and pathology were the solitary representatives of established medical technology. The trend to specialisation gained its greatest emphasis during, and immediately after, the Second World War with the recognition of neurology/neurosurgery, thoracic surgery, and plastic surgery as separate specialities. The trend towards specialisation continued with cardiology, gastroenterology, nephrology, vascular surgery, cardiac surgery, respiratory medicine, rheumatology, oncology, and clinical pharmacology, to name only some. Furthermore, new technologies and developments in physics, chemistry, bio-engineering, and electronics have caused the broad practice of pathology to split into the set specialities of haematology, microbiology, biochemistry, and anatomical pathology, with immunology rapidly becoming established. Diagnostic imaging of the body, formerly the sole domain of traditional radiology, now incorporates the use of computerised axial tomography (CAT) scanners, radio-isotopes, echo-scanning, and ultra-sound, all of which are located in departments of radiology, nuclear medicine, and cardiac laboratories, and serviced by departments of electronic engineering.

The post-war era witnessed a trend for general practitioners to work in groups, usually in partnerships, thus enabling them to roster their leisure time and have the opportunity of discussing problems in diagnosis and treatment. Their colleagues in specialist practice tended to focus on narrower areas in a number of disciplines and this was an inevitable outcome of the advances in medical knowledge. This reached a peak in the 1960s and 1970s with rapidly increasing technology and sub-specialisation going hand in hand.

In country practice communications were poor at the beginning of this period and specialist consultation a major undertaking. Consequently each individual was required to have a wide range of skills, and frequently had to undertake difficult procedures outside this range in the absence of expert assistance. In this context a few especially talented medical practitioners stood out among their peers, particularly in the field of surgery, where treatable emergencies were more common.

Most small towns had their own doctor and the larger ones had three or four. Working hours were long and regular consulting was carried out on a six day week and evening basis. This situation was accentuated during the Second World War when many practitioners left the rural areas to enlist.

With accelerating post-war advances in medicine, surgery, and anaesthetics and opportunities for specialisation rapidly increasing, there was a marked reduction in the number of doctors entering country practice. At the same time there was a greater tendency to move from place to place, and to cease to regard any practice as involving lifelong commitment to one area. The result was that many moved from the country to the city, and smaller towns were often without a doctor while, in the larger ones, as in the Melbourne metropolitan area, there was a tendency to organise into group practices to allow some time free for recreation and study.

By the 1960s, advancing medical knowledge made it difficult for country practitioners to keep abreast of the wide ranging expertise necessary, and it was in this period that the first specialists in the fields of pathology and radiology were appointed to base hospitals. While better communications and ambulance services did facilitate referral to consultants in Melbourne, there was also a demand for specialists to join country group practices. Although difficult to obtain at first, more gradually became available through the 1960s as opportunities in the city were becoming more limited. Pathologists and radiologists were followed by surgeons, physicians, and obstetricians. However, the shortage of general practitioners continued and many of the smaller towns remained without doctors.

By the early 1970s there was a return to general practice. Hours of work tended to become more organised, with longer holiday and study leave periods. General practice itself began to take on a different role with more emphasis on psycho-social problems. Moreover, the increasing complexity of anaesthesia and obstetrics resulted in group practices seeking representation in the fields of anaesthesia and paediatrics, and this further restricted the field of general practice.

In spite of increasing numbers of specialists in all disciplines and in all areas, medical progress resulted in the management of some problems being outside their scope, and the growth of sub-specialisation made it necessary for certain patients to be referred to other specialist colleagues. Fortunately this was paralleled by a great advance in ambulance services, including the use of air ambulances, and the Neo-Natal Emergency Transport Service, which increased the emphasis on safe and early transport of patients.

In the early 1980s, despite the fact that many more doctors were available, some small country towns still had difficulty in attracting a resident practitioner. The trend has been towards more general practitioners, an increased number of specialists, with the high proportion of doctors in the larger towns, especially those which support a base hospital. These hospitals tend to become centres for emergency and specialist treatment and postgraduate training, of both established practitioners and resident medical officers.

Throughout Victoria there has been a substantial rise in medical practitioners as a result of the combined influence of immigration, the development of a new medical school (Monash University), and expansion in the output of the existing one (the University of Melbourne). At the same time governments have had to re-examine the cost of health care in the context of total expenditure and there has been an expanding interest in preventive medicine.

COMMUNITY HEALTH PROGRAMME

The creation of the Hospital and Health Services Commission by the Commonwealth Government in 1974 resulted in new policies which determined the principles of promoting, modernising, and rationalising health services, including all classes of hospitals but, more particularly, of extending the development of community based services and community health programmes. The planning and development was to be undertaken in conjunction with the States.

In Victoria the beginning of the concept of community health services arose with a pilot community health facility at Queenscliff and the early support of the State to a number of long established organisations, namely, the Singleton Dispensary, renamed the Collingwood Community Health Centre, and the Richmond Dispensary, which became the

Richmond Community Health Centre. In addition, services for infants and children existed in a developed network of infant welfare centres and the School Medical Service.

Rapid growth occurred in 1974 and 1975 when, in the areas of general health, community mental health and early childhood services, 92 projects were initiated. Since 1978, the Health Commission has sought to integrate various types of community health services.

The requirements for community based services, which had been recognised prior to the expansion, had the following objectives: the establishment of comprehensive, updated services in medical, nursing, and welfare areas; an emphasis on services related to prevention of ill health; accessible primary medical care with supporting facilities and resources; an integrated and co-ordinated health system with continuity of care; and the general concept of health education.

These services were at all times intended to complement those already in existence. Many difficulties have been encountered and the provision of permanently funded community services has been seen by many medical practitioners to be competing with private practice. However, some progress towards community health care has been made since the mid-1970s.

In 1980, there was re-direction of emphasis through a rationalisation of services on a regional basis, with greater co-ordination between institutional and community care, continued development of health education and disease prevention programmes, and rehabilitation activities for the disabled.

At the end of 1982 the Community Health Programme had, in nine years, initiated projects varying in pattern from major centres to minor facilities, specialised nursing centres, special projects responding to the needs of vulnerable groups, and a variety of day hospitals, day centres, and services for the handicapped and disabled.

MEDICAL RESEARCH

In 1934, medical research in Victoria was at a relatively low ebb, although there was notable work at the Walter and Eliza Hall Institute on the nature of the toxic effects of snake venoms and the development, with the Commonwealth Serum Laboratories, of anti-venenes. The Bundaberg, Queensland, tragedy in 1928, in which twenty-one children died, was shown to be due to a staphylococcal contamination of anti-diphtheria toxoid. There were preliminary studies in immunology and the nature of virological action, while tissue injury studies revealed the importance of liberated agents such as histamine. In the 1930s, work at the Women's Hospital demonstrated the significance of anaerobic infections of the uterus, leading to great advances in treatment in pre-antibiotic times.

Following the Second World War there were significant advances in virology, a by-product of which was the postulate of immunological tolerance to non-self substances introduced early in life. There followed the clone selection theory of cellular immunological reaction, which stated that a cell of a type which produces antibodies, can produce only one antibody and this realisation was expanded by an understanding of the immunological parts played by the various lymphocytogenic sites and cell types, the investigation of the growth characteristics of malignant cells of these types, and autoimmunity disorders, respectively. These advances opened the way to the immunology of transplantation.

The 1940s were also marked by the studies in tuberculosis, the elucidation of the cause and characteristics of Murray Valley encephalitis, and the discovery of the source of the transmission of the indolent (i.e. slow in healing) Gippsland ulcer. This period also saw the beginning of a progressive study of the control of salts in the body which gave rise to a number of unique animal preparations to allow serial studies on the hormones in each animal over several years.

A study of metabolic processes, originated in the 1930s, has continued, and in 1957 a most memorable development in biochemistry occurred with the introduction of procedures for the automation of chemical sequential dissection of proteins and their synthesis. This has produced a world wide revolution in the study of protein structure and function.

A notable contribution in the clinical field occurred in 1957 with the discovery that high oxygen concentration in the crib was the cause of ocular opacities developing in premature infants, and that prevention was possible. The next decade saw the introduction of clinical research into high blood pressure and coronary artery disease, while experimental

programmes in the same field, along with the studies of analgesic nephropathy, were also very active.

Research into the blood supply of tumours in the 1930s pre-dated cancer research in Victoria, which developed particularly in the 1970s and related principally to blood cancers of all types, and the developing knowledge of their behaviour under treatment. At the same time the immunological characteristics of cancer were being assessed with a view to using such information for treatment purposes.

The 1970s witnessed work of world standard on the endocrinology of sexual function, important mineral studies, the factors controlling the growth of the foetus in utero, and the genetic abnormalities of the child.

In contrast to the 1930s, when medical research in Victoria was conducted on a very limited scale, the range and depth of research work by the 1980s had won Victoria a place in many areas of medicine.

SURGERY

Although very few surgeons practising in the 1980s experienced the frustration and dismay of treating patients in a septic ward of a general hospital in the 1930s, the control of infection has been considered by some as the greatest single advance in surgery in the last 50 years.

The introduction of sulphonamide drugs (synthetic chemical compounds active as anti-bacterial agents) in 1930, followed by penicillin in the early 1940s, led to the abolition of septic wards. In those early days of chemotherapy the results were momentous but, in more recent times, a host of new products has been required to cope with organisms which have become resistant, while others have been developed as new treatments for a number of diseases.

The control of infection paved the way for unparalleled change in the period under review with fragmentation of surgery to specialities and sub-specialities and the emergence of academic university departments. Most advances have been based on technological discoveries such as the operating microscope, heart-lung machine, artificial joints, fibre-optic endoscopy, vascular prostheses, ultra-sound, computerised axial tomography (sectional radiography to constitute a three dimensional scan), and electronic monitors. Hand in hand with surgical progress and crucial to it have been advances in anaesthesia and resuscitation, including blood transfusion.

Although used between the wars, it was not until after the Second World War that blood transfusion became a routine procedure. During the 1930s, advances in the collection and storage of blood made transfusion less difficult and enabled the blood bank, as it is now known, to be established in 1937. The intensive care ward, for patients with medical and surgical emergencies, has been a more recent development of transfusion and resuscitation and it has become more "intensive" with the use of modern electronic equipment. This concept has been extended to the ambulance service.

So far as surgical technique is concerned, probably the most spectacular advance has been in the field of vascular and cardiac surgery culminating in open heart surgery. Until 1955 closed cardiac surgery was the only form practised, and there were between 20 and 30 operations per year in Victoria. Hypothermia (artificial reduction of body temperature to slow processes) was introduced in 1955 and, in 1957, the first operation under cardiopulmonary bypass in Australia was carried out at the Alfred Hospital. This opened the way for the treatment of congenital abnormalities and acquired valve disease. In the early 1970s the first satisfactory technique for the operation of coronary by-pass was developed. In 1970, twenty patients underwent surgery for coronary artery disease; in 1978 this figure was 600, and increased to 1,200 patients in 1981.

Associated with vascular surgery has been the development of plastic prostheses for replacement of blood vessels. An important factor in undertaking this form of surgery is the ability to visualise vessels and organs in the body by means of arteriography and/or catheterisation of the heart or major vessels. Progress in radiology has made this possible and, in the 1970s, the diagnosis and visualisation of arterial obstruction have been advanced by non-invasive methods through the use of ultra-sound and computerised axial tomography. In Victoria, in 1981, there were some 3,000 operations to restore the blood flow to the

legs, 600 carotid endarterectomies to prevent stroke, and 90 patients had an aortic aneurysm, previously a fatal condition, safely removed.

Great advances have been made in the transplantation of organs such as the kidney and, less commonly, the liver. Although the first two renal transplants were performed at the Royal Melbourne Hospital in 1956, the first successful one was in 1965. These have been made possible following research into immunological responses of the body to the introduction of heterogeneous tissues. The number of transplants in Victoria steadily increased, with a total of 136 performed in 1981. Mortality has been reduced by techniques in organ preservation and better post-operative management, particularly in avoiding excessive treatment of rejection episodes.

The 1930s witnessed the introduction of neurosurgery, in the main by general surgeons who had some training in intracranial work but, after the Second World War, neurosurgery became an established speciality with units in larger hospitals. The important advances have been in the field of localisation of intracranial lesions and the use of the operating microscope.

Microsurgery itself commenced in the 1950s with the operating microscope for middle ear surgery, and followed in the next decade in ophthalmology and plastic surgery. A microsurgery research unit developed at St Vincent's Hospital, concentrating on experimental work in the 1960s and on clinical progress in the 1970s, and becoming a referral centre for digit and limb transplantation. This sub-speciality has produced spectacular results in the treatment of mutilated or avulsed (i.e., forcibly separated) limbs and hands.

In orthopaedic surgery the early advances in the 1950s related to internal fixation of fractures, notably those of the neck of the femur in elderly patients. The next decade saw the introduction of the hip replacement operation which has given comfort to thousands of persons, and developments have made it possible for other joints such as the knee and ankle to be replaced. A further major development has been in the surgical care of children with spinal deformities. The period under review witnessed a rapid escalation in the number of motor vehicle accidents which reached a peak in 1974 before the introduction of compulsory seat belts which produced a marked effect on patterns of injury following road accidents. The use of blood and breath testing for alcohol also helped to reduce the number of accidents. In parallel with the effects of these measures, the standard of treatment of fractures of the long bones has improved, through the use of image intensified X-ray equipment, the technique of closed Kuntscher nailing of femoral shaft fractures, and the application of microsurgical techniques for orthopaedic trauma.

OBSTETRICS

In the last fifty years the practice of obstetrics has been assisted by increasing medical knowledge. Most of the common complications can now be anticipated, conception can be controlled by family planning, and the obstetric team is endeavouring to produce a neonate of the highest quality. There has been a dramatic improvement in maternal and perinatal (stillbirth plus neonatal) mortality. The former has fallen from 61 in 1934 to 1.3 in 1982, per 10,000 live births, while in the same period perinatal mortality was reduced from 57 to 15 per 1,000 births.

The most important factors in achieving this reduction in mortality have been the control of puerperal fever and haemorrhage. In the period prior to 1934 at least one in every three maternal deaths was due to infection but, with the discovery of the sulphonamides in the 1930s and later of penicillin and other antibiotics, deaths from this condition have become quite rare.

Death from haemorrhage had always played a major part in maternal deaths. The establishment of blood banks during this period has been responsible for the saving of many lives. Control of antepartum haemorrhage has been achieved by the availability of blood, the frequent use of caesarian section, and of fibrinogen in the case of accidental haemorrhage; while post-partum haemorrhage has also been almost eliminated as a cause of death, again from the availability of blood and use of oxytocic (i.e., hastening) drugs in the third stage of labour.

Antenatal care is now given to all pregnant women and with its introduction the incidence of pre-eclampsia, a disease peculiar to pregnancy, has been remarkably reduced. This has

been achieved in spite of the fact that the aetiology of the condition is still not understood, although most authorities believe it is preventable.

The place of delivery has changed. Before the 1930s, the majority of women gave birth in their homes but by the 1980s most were confined in hospitals, although there are still deliveries at home. There has also been a move for a more domestic atmosphere in obstetric hospitals. The scene in the birthroom is quite different today. In the 1930s strict isolation was observed and it was common for labour to last two days with caesarian section occurring only rarely. In the 1980s the father is often present with the mother, the surroundings are quiet and labour usually lasts less than twelve hours, but there is a caesarian section rate of 15 to 20 per cent. Only easy forceps deliveries are taking place and general anaesthetics are not given for normal deliveries.

Solutions to two important problems faced by obstetricians were discovered. First, the Rh factor which produced erythroblastosis in the baby can be prevented by the administration to the Rh negative mother of an injection within 48 hours of delivery of her first baby. Second, the abnormalities resulting from a pregnant woman contracting rubella in the first three months of pregnancy can now be prevented by immunisation of young girls.

The development of ultrasound in obstetrics has facilitated the early diagnosis of pregnancy and the detection of congenital abnormalities and foetal growth retardation at a later stage. This has practically eliminated the need for x rays and the small risk to the foetus associated with their use.

Finally, the early 1980s have witnessed the successful outcome of the "test tube" baby project where human egg cells are fertilised by spermatozoa outside the human body, with subsequent culture of the fertilised egg and transference by artificial means to a uterine cavity which has been hormonally prepared to receive it.

Improvements in methods of obstetric practice and in mortality as well as the elimination of mental retardation have been continuing objectives of the obstetrician and the neonatal paediatrician, and the elucidation of the aetiology of pre-eclampsia and accidental haemorrhage has still to be achieved.

PERINATAL DEATHS AND DEATH RATES (a): VICTORIA, 1935 TO 1982

Year	Stillbirths (b)		Neonatal deaths				Total perinatal deaths (b)	
	Number	Rate	Under one week		One week but less than one month		Number	Rate
			Number	Rate	Number	Rate		
1935	849	29.5	611	21.9	159	5.7	1,619	56.3
1940	895	27.2	669	20.9	177	5.5	1,741	53.0
1945	981	23.3	727	17.7	143	3.5	1,851	43.9
1950	963	19.0	628	12.6	105	2.1	1,696	33.4
1955	788	13.8	660	11.7	100	1.8	1,548	27.1
1960	850	13.1	770	12.0	108	1.7	1,728	26.6
1965	747	11.6	700	11.0	107	1.7	1,554	24.2
1970	782	10.6	697	9.5	81	1.1	1,560	21.1
1975	636	10.2	439	7.1	83	1.3	1,158	18.5
1980	447	7.6	284	4.9	75	1.3	806	13.7
1981	443	7.4	280	4.7	75	1.3	798	13.3
1982	490	8.1	316	5.3	90	1.5	896	14.8

(a) Number of stillbirths and perinatal deaths per 1,000 births (live and still) and number of neonatal deaths per 1,000 live births.

(b) Until 1945, figures on stillbirths in this table were subject to notification being given to registrars under the Cemeteries Act and the (Commonwealth) Maternity Allowance Act. For the 1950 figures, the latter Act was replaced by the (Commonwealth) Social Services Consolidation Act. Since 1955, registration of stillbirths has been compulsory. Figures up to 1975 in this table relate to stillbirths of 28 weeks or more gestation. Figures from 1975 only include perinatal deaths where the birthweight was 500 grams or more, or if the birthweight was not known, a period of gestation of 22 weeks or more, and therefore are not strictly comparable with those for earlier years.

MATERNAL AND INFANT HEALTH SERVICES: VICTORIA, 1955 TO 1982

Year	Infant welfare services				Immunisations		
	Number of infant welfare sisters	Total attendances of children	Home visits to children	Attendances of expectant mothers	Triple antigen (a)	Poliomyelitis	Measles
1955	n.a.	1,128,292	103,649	13,274	n.a.	n.a.	n.a.
1960	296	1,335,455	158,902	16,038	n.a.	n.a.	n.a.
1965	345	1,383,407	(b)176,139	15,852	49,099	40,723	n.a.

MATERNAL AND INFANT HEALTH SERVICES: VICTORIA, 1955 TO 1982—*continued*

Year	Infant welfare services				Immunisations		
	Number of infant welfare sisters	Total attendances of children	Home visits to children	Attendances of expectant mothers	Triple antigen (a)	Polio-myelitis	Measles
1970	395	1,560,085	(b)184,042	21,572	59,130	45,932	n.a.
1975	443	1,399,310	153,575	18,192	56,762	43,777	33,801
1980	507	1,325,033	170,667	21,944	49,057	48,651	38,113
1981 (c)	507	662,797	81,147	11,858	33,294	33,294	18,769
1982 (d)	521	1,323,801	173,078	n.a.	52,068	51,977	40,094

(a) Number of full courses completed (whooping cough, tetanus, and diphtheria).

(b) Includes visits to children in hospitals.

(c) Figures are for six months (1 January to 30 June 1981).

(d) Year ended June 1982.

ANAESTHESIA

The developments in surgery and obstetrics described could not have taken place without simultaneous notable advances in anaesthetic methods, as well as resuscitative procedures which were based on experience gained before and during the Second World War. At this time anaesthetic practice was almost totally concerned with the administration of anaesthesia during surgery. The mid-1940s saw great changes in techniques with the replacement of chloroform and later, ether anaesthesia, by modern methods of relaxation and intubation of the trachea. It was the introduction of relaxant drugs in particular which assisted dramatically the scope and technique of surgery.

In the years following, a wealth of discovery and research has extended the interests of specialist anaesthesia into several overlapping areas of medical care. As a natural development of their management of casualties requiring prolonged and repetitive surgery, wartime anaesthetists felt compelled to apply their skills to the treatment of coma from brain trauma or other causes, and to the care of patients paralysed by injury or disease. There emerged a new concept of intensive (critical) care medicine and a vast extension of anaesthetic practice into these and other clinical areas. One example was the parallel extension of interest in the management of pain, resulting in pain clinics and pain study groups. Thus, in addition to his or her traditional role, the present day anaesthetist has increasing commitments to medical care outside the operating theatre.

Anaesthetic practice developed early and rapidly in the post-war period, and it is of particular interest that the Melbourne teaching hospitals were the first in Australia (1950) to establish departments of anaesthetics under the direction of salaried full-time specialists—a trend which was later to be developed throughout the world. Whereas, in 1945, there were fewer than ten full-time anaesthetic specialists in Victoria (all in Melbourne), in 1983 there were over two hundred in practice throughout the State. It did, however, take thirty years from the establishment of the first training programme in Victoria to overcome the serious backlog of shortages inevitable to a new and rapidly expanding medical speciality.

PHARMACY

Numerous changes in the practice of pharmacy since 1934 have been due to advances in pharmaceutical education, the introduction of the Pharmaceutical Benefits Scheme, the prescribing trends of medical practitioners, and to developments within the pharmaceutical industry, and within community and hospital practice as the two major areas of employment for pharmacists. Pharmacy practice was formerly subject to the Medical Act but control is vested in the *Pharmacists Act* 1974, the *Pharmacists Regulations* of 1976, and the *Poisons Act* of 1962.

The Victorian College of Pharmacy, founded in 1881, had some major additions in 1936, but was moved to new premises in Parkville in 1960. The latter, built originally as a war memorial by the Pharmaceutical Society of Victoria, was subsequently expanded when government finance provided for further land purchases in 1965 and the opening of a laboratory block in 1971.

Until 1960, pharmaceutical education had been conducted through a four year apprenticeship scheme which included specific study requirements at the College. In that year,

coinciding with the move to Parkville, a full-time, three year course in pharmacy was approved by the Pharmacy Board of Victoria to replace the apprenticeship system. Following affiliation with the Victoria Institute of Colleges in 1966, the College was granted permission to award the Bachelor of Pharmacy degree in 1967, thus becoming the first non-university school in Australia to offer a bachelor's degree. A Master of Pharmacy degree followed in 1970 and graduate diplomas were introduced in Hospital Pharmacy in 1978 and Community Pharmacy in 1983. The academic activities of the College are controlled under the *Post-Secondary Education Act 1978*, while at the same time there is a close liaison with the Pharmaceutical Society and the Pharmacy Board of Victoria.

The reform of pharmacy undergraduate education was fundamental to the development of research which has increased markedly since 1960 due to the activity of the College staff in many areas.

Until the post-war period, the major role of the community and the hospital pharmacist was to prepare medicines from basic ingredients through what is referred to as extemporaneous dispensing. With the development of synthetic drugs in the 1940s and 1950s and the rise of an extensive pharmaceutical industry, the art of the pharmacist gradually gave way to the distribution of pre-packed medication in the form of tablets, capsules, injections, and other modern dosage forms. The new drugs and techniques came from research centres throughout the world which had participated in the "therapeutic revolution". The practice of pharmacy changed from product orientation to one in which the pharmacist became an adviser and consultant on drugs and medicines. In Victoria, the number of approved pharmaceutical chemists was 1,038 in 1950 and 1,379 in 1982.

The Pharmaceutical Benefits Scheme also had a great impact on the practice of pharmacy. A person receiving treatment from a medical practitioner or a participating dental practitioner registered in Australia is eligible for benefits on a wide range of drugs and medicines when they are supplied by an approved pharmacist upon presentation of a prescription or by an approved private hospital when that person is receiving treatment at the hospital. Special arrangements exist to cover the supply of pharmaceutical benefits in situations where the normal conditions of supply do not apply, e.g., in remote areas. The list of drugs controlled by the scheme has expanded to nearly 1,000, a patient contribution has been introduced, while drugs have remained free for pensioners and some special classifications of eligible persons. In 1981-82, the total cost to the Commonwealth Government of the Pharmaceutical Benefits Scheme was \$390m, with approximately one-quarter of this amount expended in Victoria.

Between 1950 and 1970 hospitals undertook the manufacture of a range of drugs, but ceased this practice as a result of changes in payment arrangements through the National Health Scheme. This allowed hospital pharmacists who, like their community counterparts, had moved from extemporaneous dispensing to the supply of drugs manufactured by the pharmaceutical industry, to introduce ward pharmacy in recent years.

Hospital pharmacy has been upgraded through the requirements of the National Health Act and the *Pharmacists Act 1974* with the latter Victorian Statute, in particular, creating more exacting standards of practice. The appointment of a consultant pharmacist to the Health Commission of Victoria in 1972 provided hospitals and the Commission with expert advice on staffing, equipment, and development roles for hospital pharmacy. These pharmacies also play a leading role in the training of pharmacy graduates. Following the completion of the Bachelor of Pharmacy degree, students must complete a year of practical training prior to registration. Seventy per cent of trainee positions are offered within hospitals.

Community pharmacists have become linked with hospital pharmacies through sessional practice whereby they service the smaller city and country hospitals where the employment of a full-time pharmacist cannot be justified.

SUBSTANCE ADDICTION AND ABUSE

The history of drug use in Victoria reveals inconsistencies of opinion and action. Against a background of enduring permissiveness towards the consumption of alcohol and tobacco, a number of other mind altering drugs have been accepted or rejected in no logical fashion. In the 1930s, the only government institution which accepted alcoholics and drug addicts,

based at Lara, was closed. After that, no sustained treatment programme was provided until a special ward at the Royal Park Psychiatric Hospital was opened for alcoholics in 1954.

Between 1933-34 and 1947-48, the per capita consumption of beer rose from 36.5 litres to 70.3 litres, an increase of 92.6 per cent. The relevance of 1947 is that the first meeting of Alcoholics Anonymous in Melbourne took place on 13 October. It attracted a strong core of membership because it offered hope to thousands who were being treated as either criminal or insane. The hope was combined with friendship, support, and concern. This was a major change from depersonalised and stigmatised institutional care.

Three events occurred in 1959 which ultimately proved to have a powerful impact. First was the foundation of an Alcoholics Anonymous group in Oakleigh, resulting in its firm establishment in 1961, and thriving as a major self-help group for persons whose lives were affected by the alcohol problem of a family member. Second, a survey at St Vincent's Hospital indicated that some 14 per cent of the medical inpatients were suffering from illnesses directly caused by the excessive use of alcohol. This resulted in 1964 in the formation of the Alcoholism Clinic within that hospital. The third was the formation of the Alcoholism Foundation of Victoria, created because a group of people in the community was very concerned at the magnitude and extent of what was described as Victoria's "greatest unsolved public health problem".

Existing legislation concerning the treatment of alcohol and drug dependent persons was amended from time to time. Nevertheless the original pattern of compulsory committal of alcoholics and drug addicts to institutions had been adhered to, and these provisions were re-enacted in the *Inebriates Act* 1958. In 1963-64, the Royal Commission into the Sale, Supply, Consumption and Disposal of Liquor received a clear demonstration of the relationship between alcohol consumption and social and health trauma. The Report recommended the introduction of 0.05 per cent blood alcohol legislation and dramatic changes in trading hours and conditions of supply.

The most significant change then to occur was the passing of the Alcohol and Drug Dependent Persons Act in 1968, although it was not proclaimed until 1974. It allowed for the creation of a range of treatment services under the care and control of the Victorian Government so that, by the time the Act was proclaimed, many of the much needed treatment services were already in existence, and many more were developed in the second half of the 1970s.

The Alcoholism Foundation of Victoria was renamed the Victorian Foundation on Alcoholism and Drug Dependence (VFADD), and was responsible for drawing together persons from an extremely wide range of expertise derived from such fields as medicine, psychiatry, social and preventive medicine, pharmacology, pharmacy, social work, the law, police, judiciary, penal institutions, treatment services, counselling services, research centres, church groups, media representatives, and legislators. As a result, in 1969, VFADD published a very significant report devoted to the care and treatment of alcoholics in Victoria, followed by a second report entitled *Drug Dependence: The Scene in Victoria*.

An immediate aim of the Alcoholism Foundation of Victoria, formed in 1959, was to develop programmes in the work force. By 1979, these programmes were able to make use of an intervention technique, aimed at providing maximum helping resources to persons with alcohol and drug problems at the earliest possible stage, when the chances of successful recovery are at their greatest. The Foundation was also able to enlist the support of many employers and unions. These industry programmes were developed together with, and at the same time as, other intervention strategies, such as those designed to identify and assist drinking drivers.

Hence for the last 50 years, the overall community preoccupation has been with the question of how the community copes with persons who are alcohol and drug dependent. Until the 1970s, persons involved in the field of drug addiction and abuse worked in such a way as to reflect the belief of the community that medical treatment and the implementation of the law were the most effective ways of coping with addiction. More recently, the major area of attention moved from the treatment area to that of the early identification of drug problems. Increasingly there is concern with primary prevention in order to reduce the demand for the excessive use of mind altering drugs. These strategies are emerging together with systematic intervention processes and a range of suitable treatment provisions.

DENTISTRY

In the 1930s and 1940s, the Australian College of Dentistry and the Dental Hospital of Melbourne were responsible, respectively, for dental education and service in Victoria. The former implemented the curriculum as determined by the Faculty of Dental Science of the University of Melbourne until 1963, when the staff of the College was formally taken over by the University. In 1947, the Faculty was strengthened by the creation of two additional Chairs, one in Conservative Dentistry and the other in Dental Prosthetics.

Both the College and the Dental Hospital occupied a building in Spring Street, Melbourne, and attempts to improve the overall service met with little success until 1935, when the Royal Melbourne Hospital Act allocated land for the purpose of a dental school and hospital on what was known as the "Haymarket Site". Planning was interrupted by lack of finance and the occurrence of the Second World War.

The accommodation at Spring Street had always been inadequate for both the service and educational needs of the College and the hospital, which was pushed beyond limits during the post-war influx of students. However, in spite of frequent submissions for extra staff to meet present and future needs, little was done in this regard, so that on entry to the new building in 1963, the first intake of 72 new students was met by a totally inadequate number of staff. To maintain standards and to develop research projects, the quota was reduced to 45, an action which caused political repercussions and the formation by the Minister of Health of the Dental Advisory Committee in 1965.

The research accommodation at Spring Street consisted of one small room, which was also known as the "Pathology Laboratory", the Professor being responsible for any hospital specimens. In 1934, a special dental materials laboratory was set up to study amalgams used in dental fillings. With its establishment, interest moved from the study of pathological aspects to that of materials used in dentistry. The laboratory did considerable work in relation to the quality of dental materials, which was of particular value during the war. In 1947, it was reconstituted as the Commonwealth Bureau of Dental Standards and taken over by the Commonwealth Government—it has since been known as the Australian Dental Standards Laboratory.

The Laboratory was separated from the College, and with it went the personnel, and most of the equipment. However, with the introduction of new Chairs to which reference has been made, research interest was redeveloped in the Dental School and appropriate accommodation planned for the new building. By the 1980s, the various laboratories were well equipped by international standards, and the members of Faculty share such large pieces of equipment as electron microscopes and modern testing machines. Since 1934, the most significant contributions have been in the field of dental materials and fluoridation.

Since 1963, the Dental Hospital has extended and raised the level of its services, so that now it recognises a number of specialist areas. Included in its activities are the supervision of peripheral clinics at country base hospitals and the establishment of clinics in educational institutions. Since the hospital is the only one in Victoria, its staff has felt that more peripheral clinics will be required in order to make available treatment in the areas where it is needed, so that the Dental Hospital can develop as a centre of specialised excellence.

In 1943, the Health Act incorporated the independent School Dental Service of the Education Department as a division of the Health Department.

There were proposals for specially trained dental nurses and with the passing of the Dentists Act in 1972, provision was made for the training and registration of school dental therapists, now undertaken by the Dental Health Branch of the Health Commission. Similarly, the Dental Technicians Act of 1972 allowed certain technicians who passed a stringent series of examinations, to deal directly with the public for the supply of dentures.

By the end of the 1970s, community dental health requirements needed to be examined and a service designed to meet these changing needs and train appropriate personnel. For economic and other reasons, there was a demand for more therapists whose activities could cover all age groups and most forms of restorative treatment. This would require fewer dentists, whose training and experience would be different from that of the last 50 years.

The most outstanding controversy in dental practice during this period was undoubtedly the question of fluoridation of domestic water supplies. Although there were some prominent academic dentists who were in opposition, the professional advice to State and local governments was that such a procedure would be beneficial to the population in

reducing the incidence of cavities. After many years of debate the Melbourne water supply was fluoridated in the early 1970s and local government water catchment areas were similarly treated. Opposition still remained intense in many community groups which variously claimed that such a procedure was an infringement of civil liberties or that fluoride would have serious toxic effects. This culminated in an inquiry being commissioned by the Victorian Government in 1979, the findings of which did not support the contention that there were harmful effects from fluoride in the quantities used in treatment of the water.

In the 1930s, orthodontic treatment was essentially of an empirical nature and consisted of moving teeth by mechanical means to give either a more pleasing appearance or a better occlusion. The subsequent development of stainless steel alloys, in a variety of forms and produced to strict tolerances, considerably widened the field of appliance therapy. The replacement of the very difficult gold soldering technique by spot welding which could be carried out at the chairside brought treatment to a much wider range of patients. Technical improvements have continued with the application of advances in the field of plastics research to specific dental problems, so that today orthodontic attachments may be cemented directly to the teeth. More recently the philosophy of treatment has changed with the development and application of special radiographic techniques in the study of the growth of the skull. Measurements can now be made and forecasts of growth predicted, and as a result the optimum time and best method of treatment may be determined.

In the late 1930s, the old treadle powered "foot engine" was replaced by an electric motor to drive the dental burr, but a true revolution in tooth preparation occurred in the mid-1940s with the application of precision engineering techniques to the production of miniature air driven turbines, by which burr speeds of up to 250,000 revolutions per minute could be obtained. The modern handpiece contains its own power source, operating light and cooling water spray and its efficient use requires the continuous presence of an assistant to manipulate the oral evacuator and retractor. The necessity for cooling the tooth during preparation resulted in oral evacuation units to supplement the familiar saliva ejector.

Physical strain on both patient and dentist directed attention to their comfort so that now the former is fully supported at a horizontal level with the dentist and nurse seated at a convenient operating height. The once familiar dental unit as a monolithic structure has now been replaced by low mobile trolleys with retractable hoses.

DENTISTS REGISTERED WITH THE DENTAL BOARD: VICTORIA, 1935 TO 1982

Year	Total names on register	Year	Total names on register
1935	740	1970(a)	1,169
1940	686	1975 (a)	1,415
1945	634	1978(a)	1,745
1950	845	1979(a)	1,848
1955	982	1980	1,869
1960(a)	1,021	1981	1,881
1965(a)	1,060	1982	1,914

(a) At 30 September.

NURSING

Developments in nursing in Victoria since 1934 have been dominated by a trend towards independence, which in the 1930s had been typified by an increasing awareness by the community of the needs in certain areas of health and welfare. Concern about infant mortality and maternal welfare resulted in a longer training period for midwives and a new training programme for infant welfare services. Furthermore, the increasing interest in psychiatry led to the recognition of mental health as an important area of nursing

practice, although this did tend to be regarded by general nurses as of somewhat lower status, due probably to the deplorable conditions in mental hospitals prior to this period.

The next decade was characterised by increasing shortages of nurses, particularly in country hospitals, as large numbers joined the Armed Forces. This resulted in the acceptance of males as nursing trainees, and nursing aides were trained and registered—developments which were to continue to influence nursing practice in later years. There was also an increased demand for nurses brought about by medical advances, which not only increased the work load, but led to the delegation of more complex tasks, resulting in a demand for new technical skills and specialisation in nursing. However, it took some thirty years for Victorian nurses to question seriously whether increased knowledge about a medical speciality and technical competence would necessarily lead to improved nursing care and it is only in recent years that a satisfactory theoretical model, on which to form a sound basis for postgraduate programmes, has been established.

It was in 1956 that the Royal Victorian College of Nursing succeeded in persuading the Victorian Government to establish, by Act of Parliament, the Victorian Nursing Council. The Council was given wide powers to cover all aspects of nursing education, including conditions of training. Some years earlier, in 1949, some nurses were convinced that nurse teachers, hospital matrons, theatre supervisors, and ward sisters needed additional preparation for their responsibilities, and this led to the establishment of the College of Nursing, Australia, in St Kilda Road, Melbourne, purchased as a memorial to nurses who had been killed in two world wars. The first full-time postgraduate courses were commenced in 1950, followed in 1966 by the incorporation of nursing education into the Colleges of Advanced Education system.

The first new development in basic, or undergraduate, nursing education occurred in 1951 with the formation of the Melbourne School of Nursing. Using a programme of rotating study blocks, the education was at the forefront of other nursing courses in the State. However, the course terminated in 1963, although a similar school based in Bendigo continued. Nevertheless, both schools have had an important influence on the future of nursing in Victoria and a number of graduates are in leadership positions in the profession today.

A major pre-occupation in the 1960s was the development by the Victorian Nursing Council of a new curriculum for basic training. A proposal was presented in 1965, with 1970 as the tentative date for implementation. It was delayed by recommendations of a Committee of Inquiry into Nursing established by the Minister of Health, which ran counter to the thrust of the proposals. However, the Council stood firm; the new curriculum was introduced in 1972 and was mandatory by 30 June 1974. This event was of importance, not only because it enabled much needed and long delayed improvements in nursing education to be introduced, but also because it indicated the increasing aggression of the profession in the interests of its members.

During the 1970s, it was recognised that truly professional nursing practice could not be achieved if nurses continued to gain their basic preparation as employees of acute medical and surgical hospitals and that there was a need to provide more co-ordinated community nursing services and establish courses more appropriate to nursing practice outside hospitals. With the development of community health centres, the College of Nursing revised its Public Health Nursing Diploma Course, extending it to a year long programme. The College was concerned, not only that the course should prepare nurses for the centres who could foster integrated service, but also recognised that specialised services, such as maternal and child health, should continue. A four month infant welfare course conducted by the babies' homes was integrated into the diploma course in 1979.

In the 1970s, the conviction of the professional bodies was that all programmes leading to general nursing registration should prepare nurses for practice in all health care settings, including psychiatric and community health services, and should be conducted by colleges or universities at least at the level of a three year tertiary diploma. It was maintained that programmes for registered nurses should continue to be upgraded, at first to undergraduate degree level and later to postgraduate degree level. This policy was formulated subsequent to an important development in 1974 when the College of Nursing, affiliated since 1971 with the Victoria Institute of Colleges as an autonomous College, commenced the first College three year basic course leading to registration as a general nurse. Three similar

courses were established in other States in the following year and, in 1976, a second Victorian College, the Preston Institute of Technology, commenced a basic diploma programme in conjunction with a major teaching hospital.

There has been a steady progress in nursing education from hospital conducted apprentice-type preparation to the professional College conducted programme, comparable with courses preparing other practitioners in the health services. In 1930 there were 4,368 nurses with General Nursing Certificate qualifications registered in Victoria; the number in 1981 had increased to 38,813.