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## **Female Sterilisation in New South Wales, 1981 to 1994-1995**

Farhat Yusuf, Stefania Siedlecky and Stephen Leeder

Voluntary sterilisation has had varied acceptance in Australia as in other countries. The 1904 *Royal Commission into the Decline of the Birthrate and Infant Mortality in New South Wales* questioned the practice of removal of tubes and ovaries but concluded that this was not responsible for the decline in births (1). Vasectomy dates back at least to 1893 as a means of non-traumatic castration, for the treatment of sexual disorders, and even as a means of 'rejuvenation' (2). Sterilisation of the 'unfit' was recommended by the early eugenicists, although it was considered immoral for otherwise healthy men and women. It became a usual practice to sterilise a woman after two or three Caesarean sections or for other contra-indications of pregnancy.

Sterilisation fell into disrepute following the excesses of the Nazis. Although there were no specific laws in Australia forbidding sterilisation, the various State laws on maim were invoked. In 1962 the New South Wales Branch of the Australian Medical Association (AMA) advised that 'except for therapeutic reasons, no member should perform an operation for sterilisation of a male or female', and considered the operation ethically and legally wrong, even if consent had been given (3). A similar view was incorporated into the Federal AMA Code of Ethics, and this view persisted until 1971, when the entire subject was deleted from the code in spite of strong opposition from Catholic doctors. In 1976 the Queensland Department of Health

informed all hospital superintendents that sterilisation operations were illegal, in spite of the fact that vasectomy was already frequently performed in private clinics (4).

Following the introduction of the oral contraceptive pill in 1961, and the development of new endoscopic techniques, there was a great resurgence of interest in all methods of contraception including sterilisation of both men and women. In 1980, Selwood and Leeton estimated that 35% of women and 25% of men would undergo sterilisation as a final method of birth control, in addition to the women who underwent hysterectomy (5).

According to health insurance data, the number of vasectomies outstripped female sterilisation for the first time in 1986-1987, but while the annual rate of male sterilisation has remained around 8% , the rate of female sterilisation declined by two-thirds between 1984 and 1994 (6). Figures for New South Wales alone follow a similar pattern. There are some anomalies in health insurance statistics. Medibank/Medicare data cover only patients for whom a rebate has been paid, and do not include public ward patients. Vasectomies are most frequently performed as an outpatient procedure in a private clinic and are more accurately reflected in Medicare data, except for some family planning clinics which are covered by government block grants and are not included in Medicare statistics. Since female sterilisation generally requires hospital admission its decline in Medicare statistics may not reflect the whole situation.

To further investigate the apparent large decline in female sterilisation the authors have analysed a more comprehensive dataset based on New South Wales' hospital discharge summaries. This provided an opportunity to study not only the temporal changes in incidence but also the socio-demographic characteristics of

patients, diagnoses, and associated procedures.

## DATA

Data on hospital discharge summaries for the three years (1981, 1991 and 1994-1995), from all public and private hospitals were made available to the authors by the New South Wales Department of Health. These contained demographic information as well as the diagnoses and procedures listed according to the International Classification of Diseases (ICD). In 1981, the ICD codes were from the 8th revision (ICD-8), and in 1991 and 1994-1995 from the 9th revision - Clinical Modification (ICD-9-CM). In ICD-8 there was a specific code 5980: *surgical operations to produce female sterilisation* which accounted for 89% of cases. In ICD-9-CM, sterilisation was covered by codes 662: *bilateral endoscopic destruction or occlusion of fallopian tubes* and code 663: *other bilateral destruction or occlusion of fallopian tubes*. Two codes 5663 and 5664 from ICD-8 which corresponded to these were also used in the 1981 data. All cases where any of these of codes were listed as primary or subsequent procedures were included.

Population data from the 1981 and 1991 censuses and the estimated resident population (average of mid-1994 and mid-1995) were used in conjunction with the hospital data to calculate sterilisation rates for women of reproductive age.

Classification of public and private patients in public hospitals was available in 1981 but not in the other years. Legislation was introduced into New South Wales Parliament in the early 1990s laying down regulations for registration of day surgery clinics as private hospitals. Data from these clinics were included in the 1994-1995 dataset.

## FINDINGS

### *Overall*

In 1981, a total of 16,417 female sterilisations were recorded in New South Wales hospitals, declining to 9,202 in 1991 and 8,281 in 1994-1995 (table 1). The overall rate per 1,000 women aged 20-49 years declined by more than 60% between 1981 and 1994-1995. Among women undergoing sterilisation the proportion of women under age 35 declined from 63% in 1981 to 55% in 1991 and 54% in 1994-1995. This was reflected in the increase in median age from 33.9 in 1981 to 34.4 years in 1991 and 1994-1995.

The age-specific sterilisation rates declined for all ages, but the biggest decline was among women under 30 and those aged 45 and over (table 1 and figure 1). The lifetime probability of a woman having had a sterilisation has increased slightly for women under age 35 but overall has fallen by more than 50% (figure 2). The implied assumption in the calculation of these probabilities was that the particular set of age-specific rates would continue throughout the life-span of a given cohort of women, and that they would be subject to the appropriate female life tables for New South Wales.

In 1981 almost 85% of the women undergoing sterilisation were currently married, compared with under 80% in 1994-1995.

### *Principal diagnosis*

While all sterilisations might be said to be performed for prevention of pregnancy, in 68% to 70% of cases the main indication was contraceptive management, in 6% to 7% legally induced abortion, and the remainder included pregnancy complications and abnormalities of the pelvic organs.





### ***Procedures***

In 1981, only 6% of sterilisations were coded as *bilateral endoscopic destruction or occlusion of fallopian tubes*, 89% as *surgical operations to produce female sterilisation*, and the remaining 5% as *other bilateral destruction or occlusion of fallopian tubes*. In both 1991 and 1994-1995 nearly 80% of cases were coded as endoscopies, and a definite age gradient in the choice of technique was evident. Around 76% of women under age 35 had endoscopies compared with 83% of women 35 and over.

### ***Associated procedures***

The proportion of women who had a sterilisation as the only recorded procedure increased from 17% in 1981 and 1991 to 21% in 1994-1995 (table 2). Half of the sterilisations were accompanied by dilatation and curettage, the remainder were associated with Caesarean section, termination of pregnancy, removal of IUDs and various obstetric procedures.

There has been an overall decline in the number of Caesarean-associated sterilisations although the proportion performed for this indication has increased (table 2). In New South Wales hospitals, the number of Caesarean sections has shown a continuing increase between 1981 and 1994-1995 and the proportion of operations where a concurrent sterilisation was performed increased from 2% in 1981 to around 6% in 1991 and 1994-1995 (table 3).

By 1994-1995, there was a marked decline in the number of IUD removals in hospitals (table 3). Most IUD removals do not require hospitalisation except when they are associated with another procedure such as sterilisation which in 1994-1995 accounted for more than half of the IUD removals. The decline in sterilisation

associated with the removal of an IUD reflects the large decline in use of IUDs over the past decade (7).

There was a drop in pregnancy terminations performed in hospitals between 1981 and 1991 and an unusual increase in 1994-1995. This was due to the inclusion of data from accredited free-standing abortion clinics and not, as might appear, a dramatic increase in the number of abortions (table 3). Comparing 1981 and 1991 data only, there has been a decline in the number of women undergoing abortion who were concurrently sterilised. In 1981, 25% of women having a hospital abortion also had a sterilisation; which may have been the main reason for them to choose a hospital abortion; by 1991, this had declined to 12%. Although the proportion of abortions concurrent with sterilisation seemed to have dropped markedly, they still accounted for 9% of all sterilisations in 1994-1995 (table 2).

### *Hospital type and length of stay*

The widespread adoption of the endoscopic techniques has resulted in a great reduction in hospital stay and consequently a marked reduction in hospital costs. The mean length of stay in all age groups and for both private and public hospitals is less than 2 days, with longer stays among younger women, and in public hospital patients. In 1994-1995, 69% of operations were day only procedures and 84% less than 2 days (table 4).

Over the period there has been little change in the proportion of operations in public and private hospitals. With some fluctuations, around 70% are performed in public hospitals. The discharge data do not provide a break-down of public /private patients in public hospitals. A comparison with Medicare figures for female sterilisation for the approximate periods 1991-1992 and 1994-1995 shows that the number of women for whom a Medicare claim was paid, declined from 55% in 1991-

1992

to

44% in 1994-1995 , which suggests that fewer women were private patients within the public hospital system (6).

### *Ethnicity*

The decline in the age-adjusted incidence of sterilisation affected women from all ethnic groups except those born in New Zealand. Australian born women and those born in UK/Eire and Europe were most likely to have a sterilisation and the differences between these groups has diminished. Rates among Aboriginal and Asian women remain much lower than among these groups and have also shown a relatively larger decline (figure 3).

## **DISCUSSION**

Our analysis based on the three years' data shows a substantial decline in the number of women undergoing sterilisation since 1981. Hospital data for the intervening years confirms this trend with the exception of data for 1987-1988 which was affected by the changeover from ICD-8 to ICD-9-CM, and is not considered to be reliable (figure 4).

Other studies have shown that some groups of women from non-English speaking backgrounds have lower rates of sterilisation and in many groups, vasectomy is not acceptable (7, 8). The same groups of women also had lower than average hysterectomy rates (10).

There have been claims that female sterilisation is more likely to lead to hysterectomy. In fact, Santow and Bracher have found that female sterilisation actually reduced the rate of hysterectomy (9). Our recent study showed that after a fall over some years, hysterectomy rates had started to rise again between 1991 and 1994-1995, which may be related to the decline in sterilisation (10).

New South Wales Medicare data show that the proportion of sterilisations

performed by general practitioners (GP) has declined from 9% in 1984-1985 to 3% in 1994-1995, and the ratio of specialist to GP operations rose from 10:1 to 33:1. This reflects both the withdrawal of GPs from minor surgery, and the lack of endoscopic facilities in the smaller private and district hospitals where GPs are able to work. Australia-wide, Medicare figures show a similar decline in sterilisation operations from 28,046 in 1984-1985 to 9,842 in 1994-1995. The proportion of operations performed by GPs declined from 11% to 8% over this period and the specialist to GP ratios rose from 8:1 to 11:1. These ratios do not take into account public ward patients who are mostly operated on by specialists.

Further investigations would be needed to identify the reasons for the decline in popularity of female sterilisation, particularly since vasectomy rates have remained more or less constant. Various social and medical factors may be postulated:

- It is now generally accepted that women over age 35 can continue to use oral contraceptives in the absence of other risk factors such as smoking, obesity, and hypertension.
- Decline in IUD use and the accompanying risk of menorrhagia which may have led some women to choose sterilisation.
- Better access to abortion which may allow women to delay or avoid making the decision to adopt a terminal method of contraception.
- Women are starting and completing their childbearing at a later age. This is reflected in the shift to higher ages at which women have a sterilisation, which means that they may be more prepared to accept hysterectomy instead of sterilisation.
- Unwillingness to adopt a terminal method of contraception which might be

irreversible.

- Continuance of high rates of hysterectomy. The rise in sterilisations in the late 1970s and early 1980s coincided with the decline in hysterectomy rates. Conversely, while sterilisations have declined since 1981, the rate of hysterectomies has started to rise again, in spite of the widespread use of endometrial ablation.
- Greater involvement of the male partner indicated by the fact that vasectomy rates have remained steady.

## **CONCLUSION**

It is obvious that there has been a remarkable decline in the popularity of female sterilisation since 1981 which would appear to contradict the prediction of Selwood and Leeton in 1984. It appears that women may have different choices and less pressure to use a non-reversible terminal method of contraception. They experience more involvement of the male partner, better and longer use of reversible methods, and better access to abortion. In spite of the decline in the incidence of sterilisation, the age specific fertility rates indicate that women are still successfully limiting their family size.

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Table 1. Age Distribution of Sterilisation Patients, and Age-Specific Sterilisation Rates

Age	1981		1991		1994-1995		Rate per 1,000 women		
	No.	%	No.	%	No.	%	1981	1991	1994-1995
<20	32	0.2	11	0.1	16	0.2	0.1	**	**
20-24	820	5.0	340	3.7	319	3.9	3.8	1.6	1.4
25-29	3,734	22.7	1,705	18.5	1,448	17.5	18.2	7.6	6.4
30-34	5,769	35.1	2,988	32.5	2,671	32.2	27.9	12.7	10.8
35-39	3,973	24.2	2,618	28.5	2,457	29.7	23.3	12.0	10.4
40-44	1,640	10.0	1,320	14.3	1,174	14.2	11.4	6.3	5.3
45-49	421	2.6	196	2.1	185	2.2	3.3	1.2	0.9
50+	28	0.2	24	0.3	11	0.1	**	**	**
Total	16,417	100.0	9,202	100.0	8,281	100.0	15.4#	7.2#	6.0#

\* *In the calculation of the total rate the female population aged 20-49 was used, and women under 20 years and 50+ were included in the 20-24 and 45-49 age groups respectively.*

\*\* *<0.1%*

# *For women aged 20-49*



Table 2. Distribution of Sterilisation Patients by Procedure

Sterilisation and associated procedures	1981		1991		1994-1995	
	No.	%	No.	%	No.	%
Sterilisation only	2,799	17.1	1,569	17.1	1,740	21.0
Caesarean section and sterilisation	1,106	6.7	864	9.4	917	11.1
Removal of IUD and sterilisation	1,181	7.2	703	7.6	388	4.7
Termination of preg- nancy and sterilisation	1,047*	6.4	767**	8.3	744**	9.0
D & C (not for TOP) and sterilisation	8,458	51.5	5,193	56.4	4,087	49.4
Sterilisation and other procedures	1,826	12.1	106	1.2	405	4.8
Total	16,417	100.0	9,202	100.0	8,281	100.0

\* Includes vacuum aspiration and other terminations of pregnancy.

\*\* Includes dilatation and aspiration curettage for termination of pregnancy.

Table 3. Percentage of Women Undergoing Selected Procedures, and Percent Concurrently Sterilised

Procedure	1981		1991		1994-1995#	
	Total cases	% sterilised	Total cases	% sterilised	Total cases	% sterilised
Caesarean section	10,956	2.1	14,274	6.4	14,993	5.8
Removal of IUD	7,625	5.3	2,056	18.9	1,261	55.8
Termination of pregnancy	8,201*	25.4	6,479**	11.5	18,505**	4.2
D & C (not for TOP)	68,333	12.4	50,098	10.4	47,115	8.7

\* Includes vacuum aspiration and other terminations of pregnancy.

\*\* Includes dilatation and aspiration curettage for termination of pregnancy.

# Includes data from registered day surgery hospitals.

Table 4. Percentage Distribution of Length of Stay, and Mean  
Length of Stay by Hospital Type

Length of stay	1981	1991	1994-1995
Day only	12.6	57.1	69.0
1-2 days	44.9	25.2	15.1
3-6 days	22.3	9.7	9.2
7+ days	20.2	8.0	6.7
Total	100.0	100.0	100.0
Mean length of stay			
(in days):			
All hospitals	4.0	1.6	1.3
Public hospitals	4.5	1.8	1.4
Private hospitals	2.7	1.1	1.0





