

SIXTEENTH ANNUAL REPORT OF

THE VICTORIAN CYTOLOGY (GYNAECOLOGICAL) SERVICE

FOR THE YEAR ENDING 30TH JUNE, 1981.

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During the period encompassed by this report the Service has continued to operate at a high level of activity. An increasing work load has created considerable stress on the staff of the Service relieved only in part by increasing automation of clerical activities.

BOARD OF MANAGEMENT:

During the financial year under discussion Dr. P. M. Dennis joined the Board of Management of the Service in his capacity as Chairman of Pathology Services, Prince Henry's Hospital. This position was formerly held by the Director, Dr. Michael Drake who was thus on the Board of the Service in a dual capacity. Dr. Dennis, in addition to being Chairman of Pathology Services, is the hospital's Director of Chemical Pathology.

DIAGNOSTIC ACTIVITIES:

From July 1st, 1980 to June 30th, 1981, the Service examined 246,225 smears. This represents an increase of 6,700 or 2.8 per cent., on the volume of specimens received in the previous financial year. Since the inception of the Service in January, 1965, 2,762,583 specimens have been received. As indicated previously it is difficult to determine the exact number of women screened but it would appear that approximately 900,000 women have had at least one cervical smear examined by the Service.

In the financial year under discussion 570 major abnormalities were detected. As previously explained, the term "major abnormalities" refers to all cases of invasive or established cancer and also to severe dysplasia and carcinoma-in-situ - conditions that are believed to immediately precede invasive cancer. Since the inception of the Service major abnormalities, as defined in this way, have been detected in a total of 8,495 women.

FINANCIAL ASPECTS:

For the year ending 30th June, 1981, the maintenance or operating cost of the Service was \$919,310 (in keeping with previous reports, expenditure on additional and replacement equipment, on this occasion

\$51,299, has been excluded.) This represents an increase of \$86,982 or 10.5 per cent., on the previous financial year. The major component of the operating costs was that of salaries and wages which accounted for \$700,282 or 76 per cent., of the total. This expenditure on salaries and wages was \$80,754 or 13.0 per cent., more than that for the previous financial year. The increased expenditure was a direct result of Wages Board determinations and National Wage increases.

The cost per specimen examined can be derived by dividing the operating costs for the full financial year by the total number of specimens examined in this period. This formula, which has been used in previous years, gives a cost per smear examined for the financial year under consideration of \$3.73. This represents an increase of \$0.26 on the cost per smear during the previous financial year. As in previous years this increase has been due largely to the increased salaries and wages as can be seen in Figure 1. Indeed it is of interest to note that the "Service and Materials" component has risen by one cent per smear only despite the general inflation that has occurred over the past year and the increase in service costs such as postage - the latter a major item of expenditure by the Service. This relative stabilisation of costs is due to efficient management and maximum use of the benefits of bulk buying.

The cost effectiveness of any health screening programme is obviously critical to the continued support of that programme. To justify such support it should be demonstrated that the cost of screening the population for a particular disease is less than the cost of not screening or, in the present context, that the cost of identifying one significant lesion in an asymptomatic patient is less than the cost of not identifying that lesion. The critical value judgement is what constitutes a "significant" lesion. This could be defined as any lesion which has a greater chance of persisting or progressing, than of regressing, if left alone. The evidence from many studies, both in this country and overseas, would indicate that a significant lesion, so defined, is the entity "moderate dysplasia" or worse.

As already indicated the total operating cost for the financial year ending 30th June, 1981, was \$919,310. During this period the number of cases detected of moderate dysplasia or worse was 2,760, giving a

VICTORIAN CYTOLOGY (GYNAECOLOGICAL) SERVICE

DETAILS OF COSTS (1965-1981)

<u>PERIOD</u> Financial years	No. of smears	Expenditure	Av. salary / staff member	Salary cost per smear	Service & materials	Total cost per smear
1965 - 66	65,859	\$76,659	\$1,725	\$0.56	\$0.60	\$1.16
1970 - 71	137,717	\$156,314	\$3,018	\$0.77	\$0.37	\$1.14
1975 - 76	218,062	\$470,959	\$8,640	\$1.60	\$0.56	\$2.16
1979 - 80	239,525	\$832,328	\$12,461	\$2.59	\$0.88	\$3.47
1980 - 81	246,225	\$919,310	\$13,111	\$2.84	\$0.89	\$3.73

FIGURE 1.

cost of \$333 per significant lesion detected. To this must be added the cost of procedures initiated by the detection, commonly colposcopy, biopsy and superficial ablative cautery. The cost of not identifying a significant lesion is considerable if this lesion progresses to invasive cancer as is likely in approximately one third of cases. The costs now include biopsy procedures, pre-operative irradiation and radical surgery with prolonged hospitalisation. Approximately half the patients will continue with progressive disease, repeated admission to hospital, chemotherapy and/or further radiotherapy. Ultimately death will occur with the loss of a woman who is often relatively young with dependent children. Of course, such costing procedures cannot measure the incalculable suffering of the patient and her family.

The cost of the screening programme could be reduced in two ways. Firstly, smears could be taken at less frequent intervals and, secondly, the size of the population to be screened could be reduced by imposing arbitrary age limits. Although the subject of smear frequency is extremely controversial two influential organizations have recently stated that smears at three yearly intervals are adequate for screening purposes, provided the initial smears are normal. However, analysis of the figures of the Service show that, despite a recommendation for two yearly smears, the women of Victoria have set their own "mean interval" of 3.5 years (Figure 2). In addition, as can be seen from this table, over half the women screened on one occasion do not present for a second smear - at least within the time encompassed by this analysis. It is believed that any lengthening of the recommended smear interval would result in the loss of even more women from the screening programme.

It has been suggested that the costs of a screening programme could be reduced significantly by imposing arbitrary age limits, e.g. by accepting smears only from women between the ages of 35 and 55. Whilst this is undoubtedly true such a policy would largely negate the value of the screening programme. Figure 3 shows an analysis of significant lesions detected by the Service, and verified histologically, in 5 year age groups. An examination of this table shows that any restriction of the age limits of

VICTORIAN CYTOLOGY (GYNAECOLOGICAL) SERVICEFREQUENCY OF REPEAT NORMAL SMEARS (1965 - 1979)

	<u>1965-1974</u>	<u>1965-1979</u>
One smear :	52 %	58 %
Two smears :	32 %	21 %
Three smears :	11 %	10 %

AVERAGE SMEAR INTERVAL = 3.5 YEARS

FIGURE 2.

the population to be screened would result in a failure to detect a very large number of significant lesions.

In summary, it is believed that, for the screening programme to remain effective and, indeed cost-effective, all sexually active women, regardless of age, should be screened and, if normal, should be re-screened every two years.

STAFF:

On June 30th, 1981, the staff consisted of:

Technical Staff:

Full-time: Two (2) Computer Scientists.
Thirteen (13) Scientists and Cytotechnologists.

Part-time: Thirty-four (34) Cytotechnologists and Technicians.

Clerical Staff:

Full-time: One (1) Secretary.
One (1) Receptionist.
One (1) Computer Clerk.
Six (6) V.D.U. Operators.
Five (5) Typist/Clerks.

Part-time: One (1) Computer Clerk.
One (1) Typist.
Two (2) Mail Clerks.

Although the total number of people has increased it must be appreciated that many are employed on a part-time basis and that the staff ceiling imposed in 1977, and based on full-time equivalent staff numbers, is being observed.

In addition to the staff members listed above an Administrative Officer is employed by Prince Henry's Hospital and seconded full-time to the Cytology Service, the salary of this person being recouped from the funds of the Service. Since the inception of the Service all medical staff have been full-time employees of the hospital and have been seconded on a part-time basis to carry out the work of the Service. This latter arrangement ensures that the Service attracts pathologists of good quality

and broad relevant experience. Dr. E. Sumithran was appointed to the staff of Prince Henry's Hospital in December, 1980 to replace Dr. J. Anson whose resignation was reported in last year's annual report. Dr. Sumithran is currently seconded to the work of the Service on a half-time basis. Prior to his appointment to Prince Henry's Hospital Dr. Sumithran was Associate Professor of Pathology, University of Malaysia, Consultant in Histology and Cytology, University Hospital, Kuala Lumpur, and Head of the Division of Cytology of that hospital.

During the financial year under consideration permission was granted by the Health Commission to re-classify one of the Hospital Anatomical Pathology Registrar posts to that of a Specialist Pathologist with the aim of attracting a pathologist experienced in cytopathology or one willing to be trained in this area. It is hoped that this action will further strengthen the medical staff of the Service - an area of concern for many years.

CLERICAL ACTIVITIES:

Computerization of the clerical activities has proceeded most satisfactorily and the computer is now essential for the continued operation of the Service. In addition to routine file searching and diagnostic report generation, the computer is central to the rather complex follow-up system and the quality control programmes, and is also used to carry out the many detailed analyses of data generated by the Service.

RESEARCH ACTIVITIES:

The research activities of the Service are continuing. The work carried out initially on the Herpes simplex, type 2, virus is now being applied to a study of the wart virus. The latter virus is now recognized as a very common cause of cellular abnormalities in cervical smears, some of these abnormalities resembling closely, or being identical to, the more clearly defined pre-cancerous changes. Appreciation is again expressed to the Anti-Cancer Council of Victoria for providing the financial support that enabled the Service to establish this research facility.

SPACE:

Previous reports have referred to the space problems being encountered by the Service. Not only is teaching space non-existent but all other activities, both technical and clerical, are hampered by the crowded conditions

that now exist in the building initially occupied in 1969. This is inevitable as the work load has more than doubled since that time and, since diagnostic cytology is a labour intensive activity, there has been a commensurate increase in staff numbers.

TEACHING AND EDUCATIONAL ACTIVITIES:

The Cytology Service, in collaboration with the Prince Henry's Hospital Cytology Department, continues to maintain its role as the centre for cytology training in Victoria. Indeed the reputation of the Service extends beyond Victoria, both pathologists and technologists from interstate and overseas visiting the laboratories to study the techniques of diagnostic cytology. Undoubtedly the major role of the combined Service/Hospital teaching programme continues to be the provision of the total cytology component of the Bachelor of Applied Science course conducted by the Royal Melbourne Institute of Technology.

ASSISTANCE FROM OTHER ORGANIZATIONS:

Already in this report reference has been made on several occasions to the collaboration of the Service with Prince Henry's Hospital. The assistance, both direct and indirect, received from hospital staff members is greatly appreciated. It is freely acknowledged that the continued success of the Service is due in no small measure to the harmonious relationship that exists with the hospital.

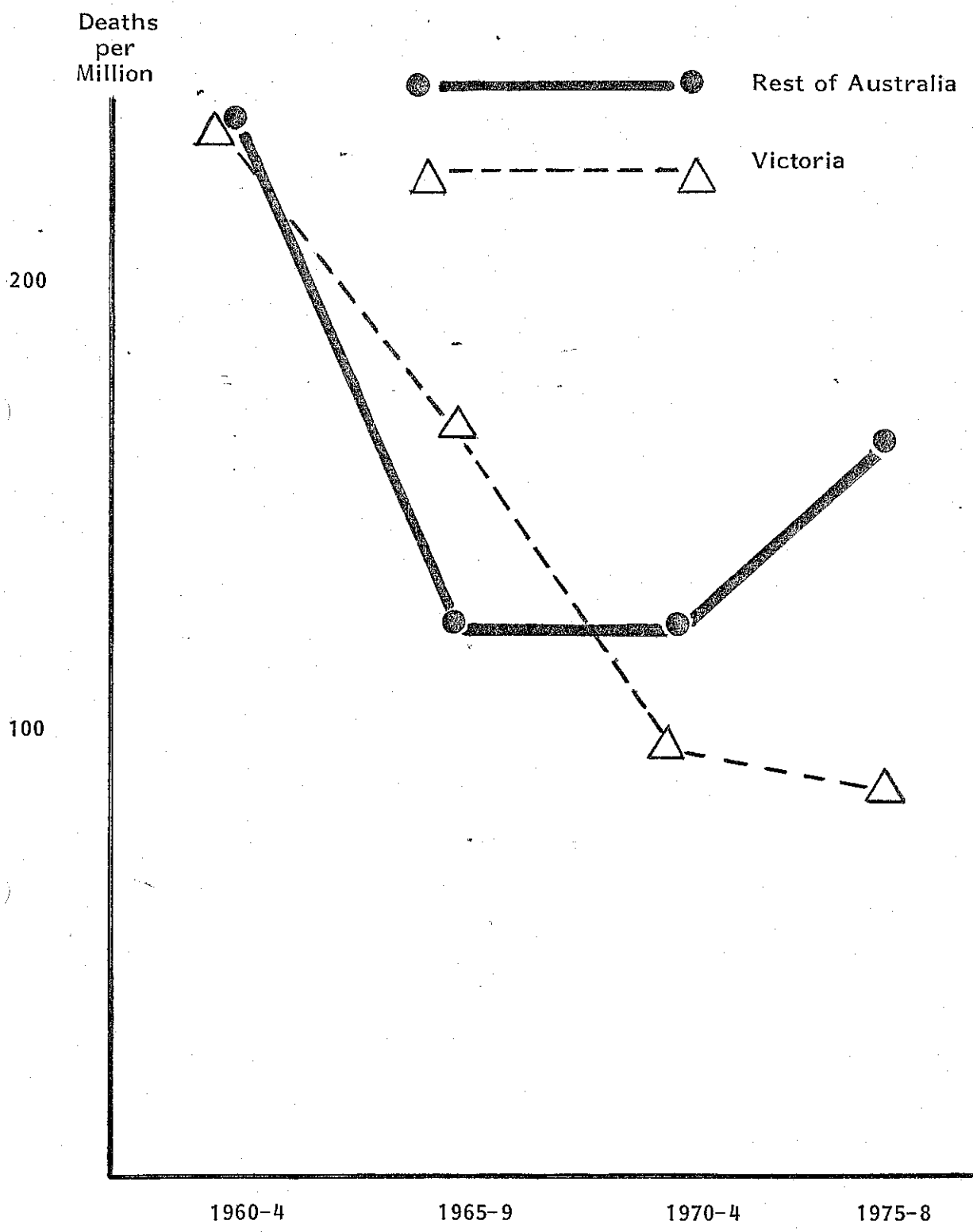
The Anti-Cancer Council continues to support the work of the Service in a number of ways. It was, of course, central to the establishment of the Service and throughout its sixteen years of operation has been most generous in supporting its activities.

It is always a pleasure to acknowledge the untiring efforts of members of the Floral Group of Prince Henry's Hospital Auxiliaries. Almost since the inception of the Service this group has been responsible for packing the kits of materials used by the medical practitioners throughout Victoria. This work, carried out under difficult circumstances, has been performed cheerfully and unobtrusively and has saved the Service many thousands of dollars over the years.

ACHIEVEMENTS:

In previous reports the achievements of the Service have been measured in terms of the progress that had been made in achieving its ultimate objective, namely, the elimination of death from cervical cancer amongst the women of Victoria. As indicated in the report for the financial year ending June 30th, 1980, an analysis of cervical cancer deaths in Victoria for the years 1961 to 1977, inclusive showed a 62 per cent. reduction in mortality in those women between the ages of 30 and 39 whilst a reduction of 74 per cent. had been achieved in women between 40 and 44 years of age. In this last annual report it was also noted that a study just published at that time had indicated an increase in mortality from cancer of the cervix in young women in Australia in recent years. A subsequent re-analysis of the mortality figures confirmed that this statement was true for the total Australian experience but also confirmed that the reverse situation existed in Victoria and that indeed the death rate was falling in this State in women under the age of 40. This contrast is perhaps best shown in a graph published in a recent issue of "Cancer News" and reproduced in figure 4.

The most recent mortality figures available, however, suggest that a plateau may have been reached in Victoria or even that the death rate in this younger age group may be beginning to rise in Victoria also. It must be appreciated that evaluation of cervical cancer mortality rates in younger women is extremely difficult since the absolute numbers are relatively small and hence variations from year to year tend to distort the actual trends. However, it is the experience of the Victorian Cytology Service, and indeed of all comparable services, that the incidence of cervical cancer, both pre-invasive and invasive, is increasing and that this increase is evident particularly in the younger women. Hence, it is not surprising that the death rate may rise. Quantitatively the increased cervical cancer death rate in women under the age of 40 throughout Australia, and possibly in Victoria also, is not of great significance since, as already indicated, the total number of women dying of cervical cancer in this age group is relatively small. However, what is particularly alarming is that the increased incidence of the disease and concomitant increased death rate in the young may portend dramatic increases in these factors in the middle-aged women of one or two decades hence - what has been referred to as an



CERVIX CANCER DEATHS IN WOMEN AGED 20-39.

FIGURE 4.

"epidemic" of cervical cancer. A parallel situation may be drawn with that of cancer of the lung. This disease which was relatively uncommon in the early part of this century is now a major cause of cancer deaths in Australia. The sudden increase has been related to tobacco smoking and increased pollution of our environment by other chemical substances. Whilst the causes of cervical cancer remain obscure there is considerable evidence that changing patterns in sexual activity could well be responsible for the increased incidence of the disease. In contrast to lung cancer, however, the detection of cervical cancer in its earliest stages and its successful treatment is relatively straightforward using the techniques of diagnostic cytology. The mechanism thus exists for preventing, or at least minimising the consequences of, a potential cervical cancer "epidemic". There seems no doubt that screening programmes such as that operated by the Victorian Cytology (Gynaecological) Service must not only be continued but intensified.

CONCLUSION:

As indicated, the Cytology Service continues to operate in a most effective and economic manner. The results to date are most encouraging but there is no room for complacency. The indications within Australia, and indeed from all comparable countries, are that cervical cancer is increasing in frequency and affecting younger women. There is a need for continued and intensified screening programmes if the effects of this increase are to be minimised.