

# Cervical Cancer: The Chilean Perspective

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## INTRODUCTION

Reports published by WHO state that the number of cancer cases is increasing all over the world. There are 10 million new cases per year and this number is expected to rise up to 15 million cases by 2020<sup>1</sup>. According to WHO's estimates for 2005, there was a total of 58 million deaths from chronic diseases and about 7.6 million of them were caused by cancer<sup>2</sup>.

Worldwide, the three main causes of death due to cancer among women, in descending order, are: breast cancer, lung cancer and cervical cancer with an age-standardized rate between 12.5 and 7.9 per 100 000 women<sup>3</sup>. However in developing countries cervical cancer is the second cause of cancer death

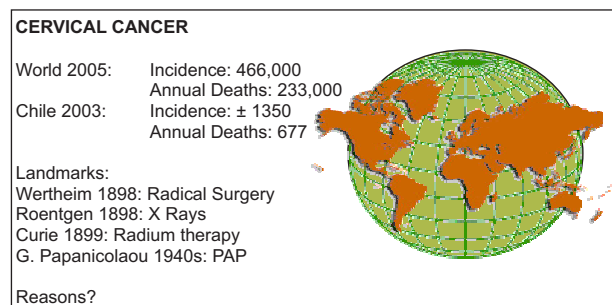


Fig. 1.

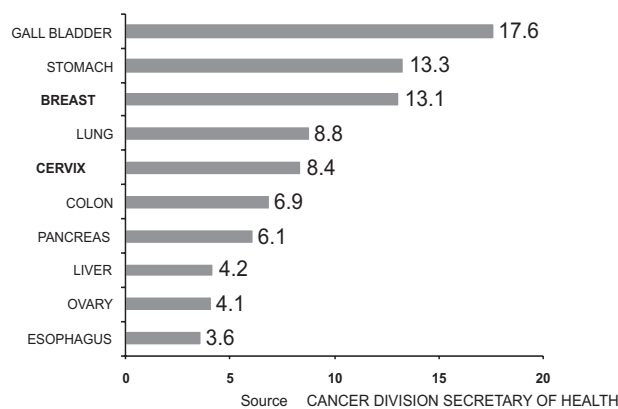


Fig. 2. Cancer mortality rate principal locations for women, Chile 2003.

## CHILE Demographic Data 2004

Total Population: 15,955,631  
 Public Health Insurance: 68.3%  
 Female Population: 50.5%



Fig. 3.

among women<sup>4</sup>. In Latin America and the Caribbean, Haiti has the highest mortality rate with 40 per 100 000 followed by Nicaragua with 28 and Bolivia with 22<sup>5</sup>. There are 466 000 new cases of Invasive Cervical Cancer (ICC) around the world every year. IARC has estimated that the number of women who die of Cervical Cancer is around 233 000. Eighty-three per cent of these deaths were in developing countries, most of which have no organized screening programs or treatment facilities. The adjusted mortality rate in these countries is at least 58% higher than in developed ones.

In Chile, ICC is a major public health problem. In 2003, 677 women died of ICC representing the fourth cause of death among women and the first in years of life lost (129 per 100 000 women). These deaths represent a major social and economic impact, because this type of cancer affects relatively young women in their reproductive age<sup>6</sup>.

## BACKGROUND

The Chilean health insurance system is based on a public insurance that covers around 68.3% of the population of whom 62.3 percent receive attention free of direct charge. 37.7% pays between 10 and 20% of the total cost. The remainder 31.7% percent of the population mostly of middle and upper incomes gets health coverage from private insurances (17.6%) or from other systems (14.1%). Cervical cancer is an important public health problem, especially in developing countries. To date early

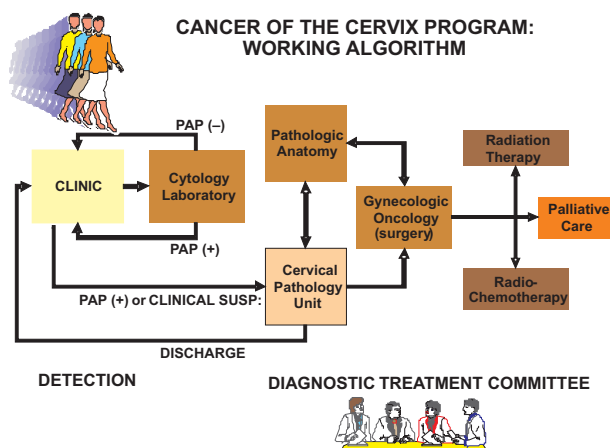


Fig. 4.

diagnosis is the most cost effective sanitary intervention: the average survival rate is 91.5% for cases with localized disease and only 12.6% for cases with distant disease<sup>7</sup>.

In Chile, since 1966 the Ministry of Health through its Cancer Unit started the first efforts to prevent cervical cancer by means of an agreement with the Universidad de Chile School of Medicine, and the support of PAHO-WHO. This initiative allowed the creation of the first cytology laboratories and professional training of related human resources on the three levels of health attention<sup>a</sup>. From 1966 to 1987 the Pap smear was offered yearly and focused on women attending the Maternal and Perinatal Program. As a result, the coverage of screening was arbitrary and oriented to a low-risk segment of women.

In 1987, in order to create a National Program for the Prevention and Treatment of Cervical Cancer the Cancer Division assessed the results of this strategic approach and took a decision based upon the evidence. The objective of the Cervical Cancer Program (CCP) was defined as "Diminishing the mortality rate and incidence of invasive Cervical Cancer by means of the detection of pre-invasive lesions and creating facilities for adequate and on time treatments"<sup>8</sup>.

The Chilean CCP consists of four main strategies. First, the CCP includes regional and national organizations each of them with a gynecologist and a midwife/nurse in charge. Second, the frequency of PAP exam should be every three years (since 1988) focalized (with the exception of those at highest risk) in women between 25 and 64 years (especially those older than 35).

<sup>a</sup> First level: screening primary assistance transient low resolution general consultations prevention and education, home care. Second level: Intermediate resolution, Intermediate complexity, specialized and laboratory diagnosis, transient treatment with hospitalization. Third level: High complexity, units for support (i.e. intensive care unit MRI) major surgery radiation therapy and chemotherapy.

Table 1

Highlights in Cervical Cancer Program (CCP)	
1987	Strategic re-orientation of the CCP.
1988	Metropolitan Region: demonstration area.
1993	Additional resources. Implementation of Second and Third Level. Promotional Campaigns. Foundation of National Reference Laboratory.
1994	National Expansion of CCP.
1996	Computerized Data Base for all of CitoLaboratories of the Program (Citoexpert) with on-line technology.
1997	Priorization in Surgical Treatment. Radiotherapy available free of direct charge in the Public System.
1998	Actualization and publication of program guidelines.
1999	National Consensus Conference on the treatment of cervical cancer.
2001	Chemotherapy coverage free of direct charge in the Public System.
2002	Future projections of CCP.
2003	Investment in infrastructure gaps on three levels of attention and services.
2003	Starting of Pilot Program AUGE (GES).
2004	Coverage rate increases to 68%.
2005	National Act on Explicit Health Warranties.
2005	Cervical Cancer Clinical Guidelines.

Third, the cytological exam must be reliable (internal and external quality controls) and on time. Fourth, the quality and timing of diagnosis and treatment must be applied to all detected cases. In addition, the CCP defined the duties and responsibilities of the three levels of health assistance, from the promotion of health to the palliation of the disease. All of them integrated in the National Women Program and coordinated with the National Adult Program (Figure 4).

From 1988 to 1993 these strategies were applied as a pilot program in the metropolitan region (the city of Santiago and its surroundings). Once the impact was assessed, the program was applied to the whole country (Table 1).

## ORGANIZATION OF THE CHILEAN CERVICAL CANCER PROGRAM

In Chile 92% of Pap smears are taken by midwives/nurses on the first level of health care in 1700 urban or rural primary health clinics. They are sent to one of 21 laboratories of cytology all over the country,

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according to regional distribution. All the exams are notified to patients and those defined as positive (as per national clinic guidelines) are sent for assessment to one of the 42 cervical pathology units (CPU) located in facilities corresponding to the second level of health care usually near or at hospitals. At the CPU the patient is evaluated and final diagnosis reached. Treatment for pre-invasive lesions is made according to national guidelines at the CPU. If a diagnosis of invasive cervical cancer is found staging is performed and then the patient is referred to the nearest third level of health care (major hospital center) where a Gynecological Oncology Board decides on the type of treatment based on the national guidelines and patient performance status. Usually radical surgery is administered at the same center and if radiation or chemo radiation is needed it is given at the nearest public or private center. (Public insurance pays for treatment not only at public centers of radiation therapy but also at private centers.)

In 2003 the government started a major health reform to improve the access of people to adequate and timely care (the main difference between public and private insurance) suffering from those diseases that represent the heaviest burden for national health. In short terms the final purpose is to guarantee access to diagnosis, treatment, rehabilitation, follow-up and palliative care (“GES”=“Explicit Health Warranties”, Table 2). In the event that health insurance (public or private) does not comply with such warranties, people legally have the right to file a suit at the hospital and the insurance. To date 40 diseases have been incorporated such as pre-invasive (CIN) and invasive cervical cancer (Act # 19.966).

### IMPACT OF CHILEAN CERVICAL CANCER PROGRAM

Coverage rate of PAP screening rose by 162% between 1990 and 2004 (Fig. 5). According to Fig. 6 the adjusted mortality rate for ICC continuously diminishes between 1987 and 2003. During the latter year there was only one death in the segment representing women younger than 25 years.

By reviewing mortality rates for age groups at higher risk and focusing on screening, one can obtain a reduction of mortality rate equivalent to 53% for women between 35 and 64 years. The reduction for the 25–64 year group is 48% during the same period (Figs. 6, 7). Another impact indicator of CCP is FIGO stage distribution at diagnosis. It shows the trend during the period 1990–2003 (Fig. 8).

Table 2

#### Cancer of the Cervix in the Explicit Warranties System 2005

##### Preinvasive Lesions

100% of women with (+) PAP will be seen at the Second Level of Health care (CPU) within 30 days after referral.

100% of women with (+) PAP will be given diagnostic confirmation within 30 days after biopsy.

100% of women with diagnostic confirmation of pre-invasive lesion will start treatment within 30 days after its indication.

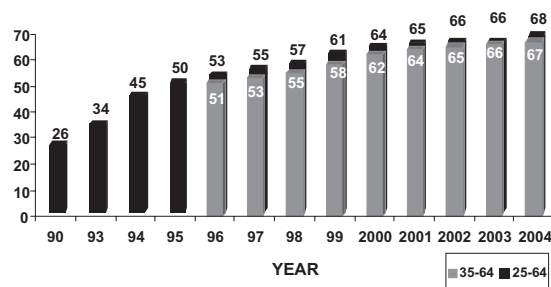
##### Invasive Cancer

100% of women with (+) PAP for invasive cancer or with clinical diagnosis will be seen at the second level of Health Care (CPU) within 20 days after referral.

100% of women with (+) PAP for invasive cancer or with clinical diagnosis will have histological diagnostic confirmation within 20 days.

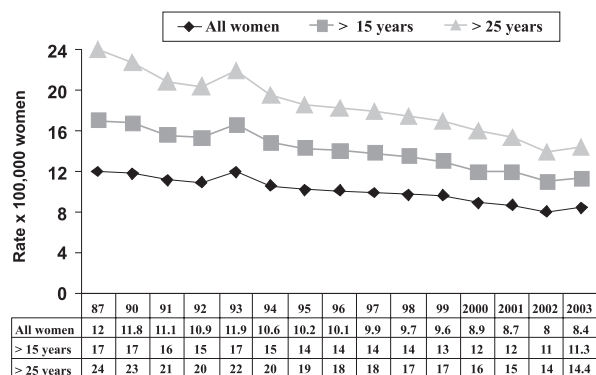
100% of women with a diagnosis of invasive cancer will complete staging within 15 days after diagnosis.

100% of women with invasive cancer will start treatment according to guidelines within 20 days after its indication by the tumor board.



SOURCE: CANCER DIVISION SECRETARY OF HEALTH PUBLIC SERVICES REPORT

Fig. 5. Screening coverage rate in the public health system, 25–64 years with PAP, Chile 1990–2004.



Source: Cancer Division Secretary of Health

Fig. 6. Cervical cancer mortality rate, total & age adjusted, Chile 1987–2003.

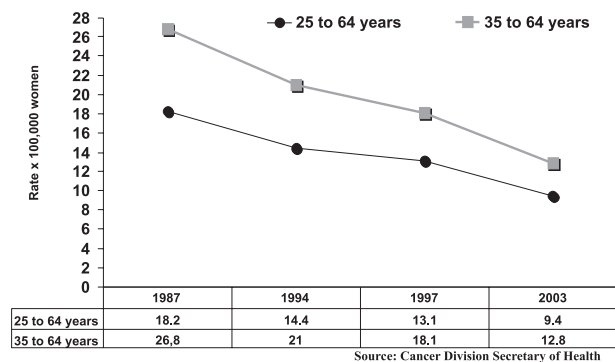


Fig. 7. Cervical cancer specific mortality by risk groups and age in landmarked years.

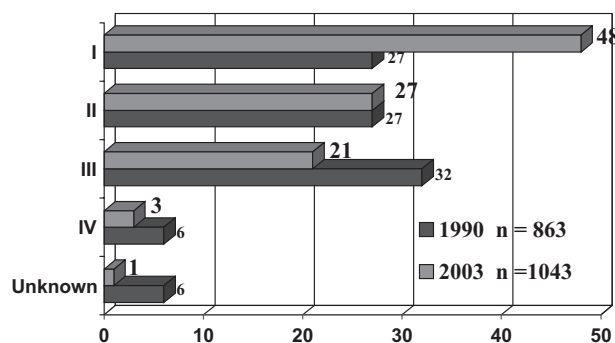


Fig. 8. FIGO stage distribution at diagnosis, 1990 vs. 2003.

## COMMENTS

Chile is a developing country. The total GDP of Chile is US\$ 30 323 060 000 and the GDP per capita amounts to US\$ 4747. Public health system spending reaches according to data from the World Bank 2002, US\$ 284

per capita<sup>9</sup>. It has a strong public health policy focusing on the population most vulnerable in economic terms. The bases of the system dates to the early 1950s. The results achieved by our cervical cancer program demonstrate that even in a scenario with scarce funding it is possible to obtain high impact results. It would be presumptuous to say that Chile has solved the problem, since we still have a long way to go. As everybody working in this field knows, death by cervical cancer can be prevented. This cause of death portrays the incompetence of the health system as well as ours.

We hope that this picture will change in the near future thanks to the introduction of HPV vaccines, together with a wide screening program. Nevertheless there remain some clinical questions regarding the vaccines, which will not be dealt with at present. For many countries including Chile it is going to be a matter of cost-effectiveness. For those, with a great burden due to ICC and without facilities for screening or resources for treatment, it seems that without the support of the international community these vaccines may be out of reach at least for a long period of time, thus being another inequality in the health system.

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