WEEKLY EPIDEMIOLOGICAL REPORT
A publication of the Epidemiological Unit,
Ministry of Healthcare & Nutrition
231, de Saram Place,Colombo 01000, Sri Lanka
Tele:(+94-011)2695112,Fax:(+94,011) 2696583,E-Mail:epidunit@sltnet.lk
Epidemiologist:(+94-011) 2681548,E-mail:chepid@sltnet.lk

WER Sri Lanka - 2007

Vol. 34 No. 10 3rd - 9th March 2007

Cervical Cancer Prevention and HPV Vaccination

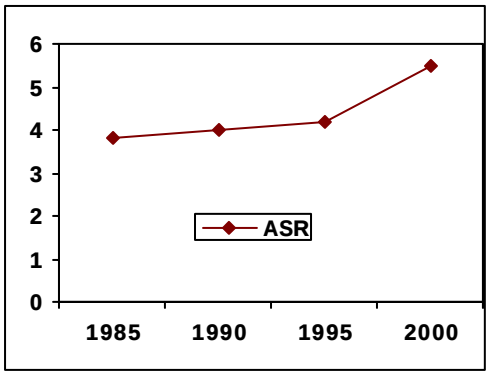
Human papilloma virus (HPV) causes cervical cancer, the second biggest cause of female cancer mortality worldwide. Estimates of the number of cervical cancer deaths are around 250,000 per year. International Agency for Research on Cancer figures show an incidence of 492,000 new cases for 2002 worldwide with 409,000 (83%) occurring in developing countries. It is the most common female genital cancer in Sri Lanka with 755 cases and an incidence rate of 6.9 per 100,000 population in the year 2000. The median age of the incident cases has been reported as 55 years. The incidence in Sri Lanka has greatly increased during the last 2 decades, especially with the implementation of the population screening programme with smear examination.

The prevalence of genital HPV infection in the world is around 440 million. HPV is a very common sexually transmitted virus. Most people who have ever had intercourse, both men and women, have been infected with HPV at some point in their lives. Most never even know that they have been infected, and show no symptoms since their bodies were able to fight off the virus.

There are about 40 genotypes of HPV which infect human mucosal areas of the upper digestive tract and the ano-genital tract. These are grouped into "high-risk" and "low-risk" types according to the degree of risk of development of cancer after infection. Genital HPV infection is extremely common and most often causes no symptoms. A proportion of individuals infected with low-risk HPV types such as HPV-6 or HPV-11 will develop genital warts, whereas a subset of women with high-risk HPVs such as HPV-16 or HPV-18 will develop preneoplastic lesions of cervical intraepithelial neoplasia (CIN). Low-grade cervical dysplasias are common and most regress spontaneously. In contrast, the minority of lesions that progress to high-grade dysplasias tend to persist and progress to carcinomas in situ before becoming invasive cancers.

The majority of adenocarcinomas of the cervix and of squamous cell cancers of the vulva, vagina, penis and anus are caused by HPV-16 and HPV-18, together accounting for about 70% of cases globally. The remaining 30% is due to other high-risk HPV types. The relative importance of different high-risk types varies between countries and regions, but type 16 has the greatest contribution to cervical cancer in all regions. HPV is also associated with other cancers of the anus, head and neck, and rarely, recurrent respiratory papillomatosis in children.

Figure: Incidence of cervical cancer in Sri Lanka 1985-2000



ASR = Age Standardised Rate (per 100,000 world population)
Source: Cancer Incidence Data: SL 2000: Cancer Registry

Contents ***Page***

Since last year, it has become possible to vaccinate against (HPV) that causes most cases of cervical cancer. In June 2006, *Gardasil* received approval from the US Food and Drug Administration and, shortly afterwards, was provisionally recommended by the US Advisory Committee on Immunization Practices for girls and women aged 9 to 26. The vaccine is to be given intramuscularly in three separate shots over a period of 6 months (@ USD 100 each: USD 300 for 3 shots). As of the end of 2006, the vaccine had been approved in 49 countries worldwide, with more expected to join the list this year. The quadrivalent vaccine gives 100% protection against infection from HPV types 16 and 18, which are responsible for around 70% of all cervical cancers. It also protects against HPV types 6 and 11 that cause genital warts. In the mean time, the manufacturer of *Cervarix* applied to the European Agency for the Evaluation of Medicinal Products for international regulatory approval in March 2006 to market the bivalent vaccine for HPV types 16 and 18.

But health professionals and health-care policymakers face tough decisions before making the vaccine widely available in their respective countries. Questions such as 'who should get the vaccine and at what age?', 'how to include HPV vaccination in a comprehensive cervical cancer control programme?', 'how to integrate it in to the existing National Immunization Programme' and 'which sustainable funding mechanisms should be in place?' are just the start.

Such decisions may be easier for developed countries which have data on HPV and cervical cancer prevalence, existing vaccination programmes and ample clinical trial data on the HPV vaccine itself. Most developing countries may not have a complete set of epidemiological data and some may not even have a mechanism to deliver the vaccine. But even for developed countries, the current cost is a major barrier to making the vaccine widely available.

Developing countries that acquire the vaccine would need to decide whether to start vaccinating females alone or both adolescent girls and boys. The most successful vaccination programmes have been community-wide, and avoid any stigma associated with single sex vaccination. The cost may restrict HPV vaccination to girls, especially since clinical data on efficacy in boys are still being gathered.

Another concern is how to reach the target population. Although the vaccine is approved for women up to the age of 26, it is generally considered to be best administered at the age of 9 to 13 years, before girls become sexually active and potentially exposed to HPV. For countries like Sri Lanka where schools are well attended by girls, a school-based vaccination programme can be the answer.

Apart from cost-effectiveness, vaccination delivery and health education of the public and health professionals, the advent of the HPV vaccine has raised other issues. Promoting an anti-cancer vaccine and, at the same time, making it clear that HPV is a sexually transmitted infection will require deft handling in the wording of policy, education and publicity materials. Screening and treatment services will still be required, because the vaccines only prevent about 70% of cervical cancer cases and because it will be years, if not decades, before we see the full benefit of vaccination in terms of a reduction in the incidence of cervical cancer.

More research regarding the HPV vaccines will be needed in future to ascertain the length of protection, the programmatic costs, mobilization of financial/human/technical resources through partnerships, work with international vaccine agencies to supply below market-cost vaccines and the development of next generation vaccines that are economically applicable to developing countries. At country level, epidemiological studies to ascertain the incidence, prevalence and the burden of cervical cancer in terms of mortality and morbidity are a must before we think of implementing HPV vaccination in Sri Lanka.

Meanwhile, the World Health Organization (WHO) has been developing information that countries can use to formulate their policies on HPV vaccination. Last year WHO made available to countries policy and programme guidance notes and technical briefing notes on introducing HPV vaccines. The documents drive home the need to educate governments, health professionals and the public about both viruses and vaccines, and the importance of collaboration between reproductive health, immunization, child and adolescent health and cancer control programmes. This year promises to be a significant one for HPV vaccination with WHO's six regions planning meetings to discuss these issues, starting with one in April of WHO experts and government officials from the South-East Asian and Western Pacific regions.

It is imperative that we understand that HPV vaccines are for prophylactic use, and more importantly do not mean that women can forget about routine screening with PAP smears and pelvic examinations. Similarly, HPV vaccines are no magic bullets: they have the potential to substantially reduce the prevalence of cervical cancer, but not to eradicate it. Hence the need for a holistic approach in the quest to prevent cervical cancer, incorporating basic principles of epidemiology. In that process, the HPV vaccines will be an important tool. But the discovery of a vaccine to prevent a major cancer with debilitating consequences marks a significant advancement of science in modern times nonetheless.

For further information, please visit the websites of

- World Health Organization (www.who.int),
- International Agency for Research on Cancer (www.iarc.fr)
- International Union Against Cancer (www.uicc.org).

Note

The Epidemiology Unit does not endorse a particular HPV vaccine product or manufacturer.

Table 1: Vaccine-preventable diseases & AFP

24th Feb - 2nd Mar 2007 (9th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	00	01 AM=1	00	00	00	00	01	06	14	30	-53.3%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	01 CB=1	01 NE=1	00	00	00	00	00	00	02	00	09	04	125.0%
Tetanus	00	00	00	00	00	00	00	00	00	00	08	10	-20.0%
Whooping Cough	00	00	00	00	00	00	00	00	00	01	08	13	-38.5%
Tuberculosis	108	13	10	09	22	25	08	00	195	114	1675	1689	-0.8%

Table 2: Diseases under Special Surveillance

24th Feb - 2nd Mar 2007 (9th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
DF/DHF*	30	08	05	02	10	01	01	02	59	167	1250	2119	-41.0%
Encephalitis	00	00	00	00	00	01 AP=1	00	00	01	02	47	22	+113.6%
Human Rabies	00	00	00	00	00	00	00	00	00	01	16	15	+6.7%

Table 3: Newly introduced Notifiable Diseases

24th Feb - 2nd Mar 2007 (9th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Total number of cases to date in 2007
	W	C	S	NE	NW	NC	U	Sab		
Chickenpox	15	05	09	03	05	01	03	08	49	478
Meningitis	00	00	00	00	01 KR=1	00	00	00	01	38
Mumps	02 KL=2	00	03 GL=1 MT=2	00	04 KR=4	00	00	01 KG=1	10	114

*__DF / DHF__ refers to Dengue Fever / Dengue Haemorrhagic Fever.
__NA__= Not Available.

Sources:
Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephalitis, Chickenpox, Meningitis, Mumps.
Special Surveillance: Acute Flaccid Paralysis.
National Control Program for Tuberculosis and Chest Diseases: Tuberculosis.
Details by districts are given in Table 5.

Provinces: W=Western, C=Central, S=Southern, NE=North & East, NC=North Central, NW=North Western, U=Uva, Sab=Sabaragamuwa.
DPDHS Divisions: CB=Colombo, GM=Gampaha, KL=Kalutara, KD=Kandy, ML=Matale, NE=Nuwara Eliya, GL=Galle, HB=Hambantota, MT=Matara, JF=Jaffna, KN=Killinochchi, MN=Mannar, VA=Vavuniya, MU=Mullaitivu, BT=Batticaloa, AM=Ampara, TR=Trincomalee, KM=Kalmunai, KR=Kurunegala, PU=Puttalam, AP=Anuradhapura, PO=Polonnaruwa, BD=Badulla, MO=Moneragala, RP=Ratnapura, KG=Kegalle.

Table 4: Laboratory Surveillance of Dengue Fever

24th Feb - 2nd Mar 2007 (9th Week)

Samples	Number tested	Number positive *	Serotypes				
			D_1	D_2	D_3	D_4	Negative
Number for current week	06	01	00	01	00	00	00
Total number to date in 2007	196	09	00	02	02	00	04

Source: Genetech Molecular Diagnostics & School of Gene Technology, Colombo. * Not all positives are subjected to serotyping.

Table 5: Selected notifiable diseases reported by Medical Officers of Health
24th Feb - 2nd Mar 2007 (9th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptos-pirosis		Typhus Fever		Viral Hepatitis		Returns Re-ceived Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	20	383	04	34	00	03	03	20	06	07	01	25	00	01	01	09	**86**
Gampaha	05	134	01	40	00	05	00	14	00	01	06	21	00	06	01	26	**50**
Kalutara	05	91	06	56	00	01	00	11	06	10	01	20	01	01	09	18	**91**
Kandy	07	164	05	41	00	00	03	16	00	02	01	25	02	18	11	59	**77**
Matale	01	46	08	45	00	03	00	03	00	00	01	13	00	02	01	36	**67**
Nuwara Eliya	00	17	01	32	00	00	03	21	00	342	00	05	03	15	04	57	**71**
Galle	01	39	01	22	00	04	00	04	00	03	00	15	02	12	00	06	**63**
Hambantota	01	15	00	12	00	00	03	06	00	01	01	13	00	14	01	05	**82**
Matara	03	39	07	53	00	02	02	12	00	01	10	30	15	66	00	04	**100**
Jaffna	00	02	00	22	00	01	00	132	00	00	00	00	00	63	00	05	**13**
Kilinochchi	00	00	00	00	00	00	00	02	00	00	00	00	00	00	00	02	**25**
Mannar	00	07	01	11	00	00	00	24	00	00	00	00	00	00	01	03	**25**
Vavuniya	00	10	00	11	00	00	00	07	00	05	00	02	00	00	00	03	**25**
Mullaitivu	00	00	00	04	00	02	00	08	00	00	00	00	00	00	00	00	**40**
Batticaloa	01	04	03	38	00	02	00	07	00	02	00	00	00	00	08	91	**36**
Ampara	01	01	01	20	00	00	00	02	00	00	00	00	00	00	00	03	**29**
Trincomalee	00	18	00	17	00	01	00	08	00	17	01	01	00	00	01	07	**33**
Kurunegala	08	95	03	55	00	00	00	14	00	04	00	09	01	20	02	07	**61**
Puttalam	02	57	00	20	00	09	01	14	00	00	01	04	00	00	02	25	**56**
Anuradhapura	00	12	01	22	01	05	00	12	00	01	00	09	00	08	00	14	**42**
Polonnaruwa	01	18	01	39	00	02	00	03	00	00	00	11	00	00	00	03	**43**
Badulla	01	10	04	85	00	00	02	16	00	08	01	14	03	20	08	51	**67**
Monaragala	00	05	04	46	00	00	00	10	00	00	02	14	01	14	00	04	**80**
Ratnapura	01	35	05	105	00	06	00	18	00	05	00	16	00	05	00	20	**50**
Kegalle	01	47	02	28	00	01	00	08	00	00	00	20	00	07	00	11	**36**
Kalmunai	00	01	05	23	00	00	02	05	00	00	00	00	00	00	06	47	**50**
SRI LANKA	**59**	**1250**	**63**	**881**	**01**	**47**	**19**	**397**	**12**	**409**	**26**	**267**	**28**	**272**	**56**	**516**	**76**

Source: Weekly Returns of Communicable Diseases (WRCD).
***Dengue Fever / DHF** refers to Dengue Fever / Dengue Haemorrhagic Fever.
****Timely** refers to returns received on or before 10 Mar. 2007. Total number of reporting units = 290. Number of reporting units data provided for the current week: 221.
A = Cases reported during the current week. **B** = Cumulative cases for the year.

PRINTING OF THIS PUBLICATION IS FUNDED BY THE UNITED NATIONS CHILDREN'S FUND (UNICEF).

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to chepid@sltnet.lk.

ON STATE SERVICE

Dr. M. R. N. ABEYSINGHE
EPIDEMIOLOGIST
EPIDEMIOLOGICAL UNIT
231, DE SARAM PLACE
COLOMBO 10