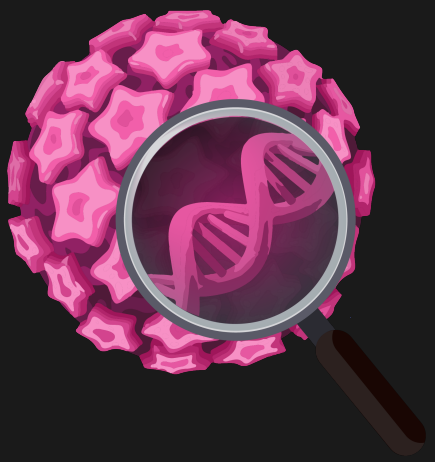

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Policy Review

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Cervical cancer is the second most common cancer of women in India, despite being largely preventable. As per Globocan 2020, 604,100 new cases of cervical cancer were detected globally in 2020 and 341,831 deaths were attributed to this malignancy. In India, cervical cancer accounted for 9.4% of all cancers and 18.3% (123,907) of new cases in 2020. It still is amongst the commoner cancers in India and a leading cause of cancer-related deaths in women in low and middle-income countries. It is the second leading cause of cancer deaths for females in 12 Indian states.

The situation is more alarming in the rural areas where the majority of women are illiterate and ignorant about the hazards of cervical cancer as well as healthcare resources are scarce. Poor prognosis due to late diagnosis is common in similar resource-constrained settings around the world, where women present with advanced stages of Human Papillomavirus (HPV) cause cervical cancer and lack treatment facilities. In addition to HPV infection, factors like age at the time of marriage, number of pregnancies genital hygiene, use of oral contraceptives, nutritional status, smoking, etc., are associated with the development of cervical cancer. Interventions ranging from prophylactic HPV vaccines to various screening approaches such as visual inspection with acetic acid or Lugol's iodine (VIA/VILI), Papanicolaou test (Pap test or Pap smear) and HPV DNA (Deoxyribose Nucleic Acid) testing are used for early detection and prevention of cervical cancer.

The Department of Health Research has recently released a Health Technology Assessment for early diagnosis of cervical cancer. There is sufficient evidence that suggests that screening leads to a reduction in the occurrence of cervical cancer cases with a decrease in cancer deaths. It also concludes that among various screening strategies, VIA every 5 years is the most cost-effective screening method in the context of India. The natural history of the disease suggests that early diagnosis should initially target those women who have a higher prevalence of high-grade precancerous lesions (Cervical Intraepithelial Neoplasia 2/3)—women mostly in their 30 s and 40 s.

World Health Organisation (WHO) South-East Asia Region developed a strategic framework for cervical cancer control in the region. The

framework recommends a multipronged approach towards comprehensive cervical cancer control:

- The **HPV vaccine** is one of the recommended interventions for girls aged **9–13 years** for primary prevention.
- Cervical cancer screening programs using **cost-effective tests** can be implemented for the early detection of pre-cancerous conditions and cancers.
- Health systems need to be strengthened for preventive, curative and palliative care services for cancers.

Management algorithms for screen-positive women in cervical cancer prevention programs have undergone substantial changes in recent years. Recently, the WHO headquarter released its global strategy to accelerate the elimination of cervical cancer in November 2020 which outlined three key steps: vaccination, screening and treatment.

The **National Cancer Control Programme (NCCP)** was first launched in 1975, with priorities given for equipping the premier cancer hospital/institutions. Central assistance was given to each cancer institution for the purchase of cobalt machines for radiotherapy. In 1984, the strategy was revised and stress was laid on primary prevention and early detection of cancer cases. In 1990–91, the District Cancer Control Programme was started in selected districts (near the medical college hospitals). And during the 2000s, it was further modified. In 2004, evaluation of NCCP was done and the program was further revised Cancer control is now a part of the **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) program** which was launched in 2010 to prevent and control major non-communicable disease.

Keeping in view that in most developing countries, due to the lack of necessary manpower, infrastructure and quality control, high-quality cytology screening may not be feasible for wide-scale implementation of the cervical cancer screening program [12], it was recommended that visual screening tests such as VIA/VILI could be adopted till a low-cost reliable HPV test became available in India. These techniques could be conducted by trained doctors and paramedical staff, with adequate training and quality assurance, and would also have the advantage of on-site screen and treatment of low degrees of abnormalities detected.

The **International Cancer Screening Network (ICSN)** also convened a meeting to share lessons, experience, and evidence regarding cancer screening in countries with established organized screening programs. The first regional consultation of the ICSN was held in Agartala (2016) and recommendations were published and submitted to the relevant stakeholders. Institute for Cytology and Preventive Oncology (ICPO) in conjunction with WHO India and the consensus findings were submitted to the Ministry of Health and Family Welfare (MoHFW), which constituted a high powered expert panel to finalise the modalities of early diagnosis of not only cervical cancer but also breast and oral cancers and the Operational Framework for Management of Common Cancers was prepared and released in Tirupati in 2016 by MoHFW. On the release of the guidelines the key contributors, the Minister of Health promised that the Initial implementation of the screening program across 100 districts will provide data for wider implementation across India. This will be accompanied by awareness campaigns in the community. The roadblocks, if any, would be removed, and the lessons learned may result in course corrections wherever essential doses of the HPV vaccine. Vaccine coverage should be monitored within the program framework and cervical cancer trends need to be monitored through a network of cancer registries.

Globally, it is now widely accepted that vaccination against high-risk strains of the human papillomavirus (HPV) is a safe and effective means of primary prevention of cervical cancer. Although the HPV vaccination was introduced in India in 2008, it is yet to be included in the universal immunization program in India. A vaccine delivery and demonstration project led by an international non-profit organization, PATH, was started in 2009 in Andhra Pradesh and Gujarat but had to be suspended in 2010 as a result of public concern, allegedly arising from the deaths of seven girls who received HPV vaccine. In 2016, a multidisciplinary Expert Group constituted by the Secretary, Department of Health Research and Director-General, Indian Council of Medical Research, Ministry of Health and Family Welfare, Government of India, reviewed the available evidence globally regarding immunogenicity and efficacy, adverse effects, and cost-effectiveness of the HPV vaccine. In addition, the burden of HPV infection and the status of the HPV vaccine in India were also reviewed. The Group

discussed the available guidelines and recommendations of WHO for the introduction of HPV vaccine at the country level and came up with the recommendation that adolescent girls 9–13 years should be vaccinated with two doses of the HPV vaccine. They recommended that the health system capacity should be assessed before introduction to ensure effective implementation and a reliable system should be established to monitor the adverse events. Vaccine coverage should be monitored within the program framework and cervical cancer trends need to be monitored through a network of cancer registries. Once the recommendations were received, a first of its kind HPV vaccination program for school children was launched in New Delhi, on the occasion of National Cancer Awareness Day (November 7, 2016) which vaccinated nearly 1200 girls. It was supposed to be expanded to cover 250,000 girls per annum. Simultaneously, the Government of Punjab initiated a similar campaign and succeeded in vaccinating young girls with 97.5% and 98.5% coverage initially. The Government of Sikkim also introduced HPV vaccination along similar lines and achieved high coverage and safety in 2018 with spectacular success. The key barriers encountered in the implementation of HPV vaccine rollout were sociocultural, health systems, and financial barriers as well as consistency in policy with change in governance. It is suggested that a policy of screening the mother and vaccinating the accompanying girl child (if of appropriate age) could be a viable approach.

To support the implementation of the cervical cancer screening program, the ICMR-NICPR was designated as a training hub for the Project ECHO (Extension for Community Healthcare Outcomes) model for training health care providers in cancer screening following which a study was conducted which reported the effectiveness of the training program in reaching primary care physicians/other HCPs across the country and improving their knowledge and skills related to screening for breast, oral, and cervical cancer. The ECHO model provided a cost-effective way to exponentially expand the capacity to mentor and train these HCPs in cancer screening best practices. ECHO used widely available video-conferencing technology, didactic presentations and case-based learning techniques to mentor and support HCPs to implement best practices in the field. Reports on the effectiveness of the innovative feasible approach of ‘satellite clinic’ which could enable

tertiary hospitals to contribute to cancer prevention, without compromising their primary mandate to provide treatment. In addition to online training, hard copies of training manuals were also designed by the MoHFW for doctors and paramedical workers.

The preparedness of the Indian healthcare system for implementing large-scale cervical cancer screening is also a concern. Dhillon et al. reported in their study that overall, readiness scores were low for cervical cancer screening. At Sub Health Centres, the lowest scores were observed in 'infrastructure' (0.55) and 'infection prevention (0.44), while Primary Health Centres (PHCs) had low 'potential staffing' scores (0.50) due to limited manpower to diagnose and treat (cryotherapy) potential cases. Scores were higher for tiers conducting diagnostic work-up and treatment/referral. Infrastructure and staffing were large barriers to screening at PHCs, which are crucial for the referral of high-risk patients.

The cervical cancer screening was bundled with breast and oral cancer screening as part of the NPCDCS program as a comprehensive package to be delivered at the Wellness centers and covered by the Ayushman Bharat Scheme of the MoHFW. At the time of writing, 70,000 wellness centers catered to 41.35 crore people and 917 hospitals under the scheme for oncology care, catering to slightly less than 2 lakh beneficiaries. These 900? hospitals include quite a range of hospitals from multi-modal treatment facilities to stand-alone nursing homes. These facilities are provided by the 174 oncology packages in the scheme.

Van Dyne et al. conducted a study to establish baseline cervical cancer screening coverage in India, which reported only 29.8% of women reported being screened and that the prevalence of screening was higher in the urban areas. Evaluation of the implementation of Population-based Cancer Screening Program as a Pilot Study was conducted at Silchar, Assam in 2018 which highlighted the lack of human resources, overburdening of the existing staff, and difficulty in motivating community for screening as the top 3 challenges, as observed by the healthcare providers involved in the implementation. Even though the alternative screening and management algorithms have simplified the logistics of cervical cancer screening,

implementation of the programs in the country is limited for several reasons. Among these are the needs to optimize fiscal and human resources, mobilize and educate communities, organize services that meet women's needs and preferences, and strengthen health information systems to track screen-positive women for follow-up. A truly point-of-care and affordable HPV test is still elusive.

There are still a lot of unanswered questions and challenges ahead, viz. determining appropriate cost-effective and point of care screening strategy, deciding intervals of screening, motivation of women to come forward for screening with optimal utilization and augmentation of existing health care infrastructure including diagnostic and treatment facilities [39]. India needs to develop the health system capacity to ensure efficient cervical cancer screening programs and community-level efforts to improve knowledge about cervical cancer and screening programs via enhancing community participation which can only be achieved by creating a workforce of health professionals and paramedical workers with screening awareness [40]. A recent review found that community healthcare workers (CHWs) can improve community awareness and help to carry out cancer screening and follow-up. Adopting participatory approaches in CHW interventions would enhance acceptability.

The COVID-19 pandemic has deeply affected all levels of our lives. New vulnerable groups and inequalities have emerged that require recognition and action. To prevent long-term increases in the cervical cancer burden due to the COVID-19 pandemic, it is crucial that organized screening is maintained and monitored in settings where it can be safely and comprehensively provided. Apart from early detection and screening, the treatment aspect has also been compromised and needs due attention.

The on-field implementation of early diagnosis of cervical cancer on a national scale is still a herculean task. ECHO training programs and satellite clinic models do help, however, a more robust commitment from the Government is required for the full-fledged implementation of these guidelines, with time-to-time modifications, to yield lasting fruits in the formation of an independent dedicated cell entrusted with the job of Monitoring and Evaluation the NPCDCS program and

coordinating with the various stakeholders, including the various state players. With health being a state subject in India, a concerted approach for the implementation of state-wide cervical cancer control and HPV vaccination will hopefully bring fruitful results.

Reference:

Cervical Cancer: Formulation and Implementation of Govt of India Guidelines https://www.researchgate.net/publication/357377020