



## Health System Preparedness for Screening of Cervical Cancer: Situational Analysis in Tribal District of Gujarat State, India

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## ABSTRACT

**Introduction:** Cervical cancer control program is well implemented prevention and control programme by health system in India. The study is to understand the health system situation for implementation of the programme as per WHO Framework theme and findings. The second objective is to propose Screening Model in one of the tribal district of Gujarat.

**Methodology:** Cross sectional study was done in randomly selected blocks of Aravalli district. Data were collected by using quantitative facility checklist and questionnaires for health care providers, health official were interviewed by using semi structured questionnaire. Secondary data review was conducted to understand financial condition and reporting mechanism.

**Results:** Majority of Health facilities have basic infrastructure to carry out screening programme for cervical cancer, although only 2% health institution are providing pap smear services. A few women are being screened. Lack of community awareness, Lack of skill based training and awareness among health care professionals for screening methods for cervical cancer were the most common reasons reported in our study.

**Conclusion:** The study suggested urgent need to generate demand from the community by increasing community participation, provide skill based training and motivation for work among health care providers to increase uptake of screening for cervical cancer programme to reduce mortality among women.

**Keywords:** Health system preparedness, screening of cervical cancer, aravalli

## INTRODUCTION

Cervical cancer is fourth most common cancer and fourth most common cause of cancer death among women worldwide, as estimated in 2012<sup>1</sup>. Globally, 70% of cervical cancer burden are on low and middle human development and resources settings. More than one fifth of new cases of cervical cancer are diagnosed in India<sup>2</sup>. Many developed countries have special cancer control programme and they have been successful to achieve significant reduction in incidence and mortality of cervical cancer due to their well-established regular screening policy under the programme<sup>3</sup>. Every

year, around 1.23 lakh new women are diagnosed with cervical cancer and 67,500 of these women die of the disease in India<sup>1</sup>. Incidence of Cervical cancer is most common in women aged 15 to 44 years women and also a 2<sup>nd</sup> leading cancer in India<sup>4</sup>.

Every year cost of disease treatment is huge, hence prevention of cervical cancer is considered one of the cost effective strategies in these countries. Women who are in the age group of 25 to 65 if diagnosed early, chances of successful treatment are higher and it also helps to reduce the cost of the treatment and premature death of the patients. Prevention will reduce the chances of the devel-

opment of the diseases.<sup>5</sup> In low resources setting it is very important to focus on early prevention strategies to reduce the economic cost and disabilities. Over a period of time, (1983 to 2007) cases of cervical cancer have 2.91 times increased and Out of all cervical cancer 46.4% women with invasive cervical cancer cases are below 50 years of age in India<sup>6</sup> Primary cervical cancer screening by cytological examination of cervical cells with a Pap test is considered to be the most successful cancer screening programme to date. In developed countries, reduction in cervical cancer mortality rate can be attributed to effective cytological examination of all sexually active women.

India is one of the few developing countries who have formulated national cancer control program. National cancer control programme was launched in 1982 with the objective of primary prevention of cancer by creating awareness through health education and it also provides cancer data base of the country. It has been integrated under NPCDCS (National program for prevention and control of cancer, Diabetes, CVDs and stroke) program<sup>7</sup>. The NPCDCS program was started in 2010 with the primary objective of prevention and health promotion for the NCDs (Non communicable diseases) and strengthening infrastructure containing human resource and early diagnosis and management of the diseases integration of primary health care system under NCD cell<sup>8</sup> The primary target was to screen once in a lifetime for all women within age of 40 years by government and private healthcare providers' joint effort.

As per NHM operational guideline of NPCDCS primary health facilities need to be equipped to provide services for screening and early detection of cervical cancer. Health care providers should have enough knowledge about the cervical cancer risk factors and ways to prevent it, and then substantial reduction in mortality can be achieved. Gujarat is one of the top ten states which has higher deaths due to cervical cancer. As per national registry programme, 6 districts of Gujarat had more than 36.2/1 lakh MAAR (Age Adjusted Mortality Ratio) Sabarkantha (including Aravalli) is one of these 6 districts. Cancer of the cervix (8.7%) is the leading cause in this district. Most common risk factors for the occurrence of cervical cancer are multiple pregnancies, early age of marriage, multiple partners, poor reproductive & sexual hygiene and limited access of health care services typically in this tribal district<sup>9</sup>. As per a study done on Chennai corporation health care provider's shows that misconception regarding screening should be urgently addressed, and there is no such study available for the health system preparedness especially for cervical cancer in the state of Gujarat. So the study's aim is to analyse the situation and

document gaps in the health system concerning screening of women for cervical cancer with the objective, Identifying the gap and challenges in the health system related to human resource, infrastructure and other logistics & based on study findings propose model for effective implementation of screening for cervical cancer

## METHOD

**Study design:** The method of cross-sectional study was exploratory both quantitative and qualitative approaches were used to understand the situation of the healthcare system related to cervical cancer screening.

**Study Setting:** The study was carried out in one of the newly formulated tribal districts named Aravalli which is situated in the North-east part of the State of Gujarat with a population of 10.27 lakh. As per census 2011, tribal population of the district is around 22% of the total population. The Aravalli district is one of the high priority districts of Gujarat, since the district has a tribal population, risk factors related to cervical cancer like early age of marriage, multiple pregnancies, and prevalence of sexually transmitted diseases are seen which make this district more vulnerable to the disease. Hence the health system of the district should be strong enough to provide essential services for cervical cancer under health program.

**Sampling:** The sample size for the study was selected by using random sampling of the blocks in the district, total of 31 PHC are placed in 6 blocks. The composition of study blocks one urban, two tribal and three rural blocks. Since there is only one urban block in the district, Modasa it was included in the study. Other blocks were randomly selected.

All 15 PHC, 4 CHC and 1 UHC and their Medical officer, Ayush Medical officer and staff nurses of these three blocks were included in the study. In addition 50% of the sub centers from each PHC were randomly selected for the study to understand the situation at the grass root level facilities. From CHCs 50% of medical officers and 50% of staff nurse were interviewed. Total 55 facilities, 21 MBBS medical officers, 8 Ayush medical officers and 12 staff nurses participated in the study.

**Data collection:** One structured and one semi structured questionnaires were developed. Quantitative questionnaires were of two types: one was a facility check list for health centre and the other was for service providers. The questionnaires for health providers included questions on knowledge, attitude and practices. The questions included training related to screening of cervical cancer, knowledge about risk factors, symptoms,

various screening methods for cervical cancer. It also included questions for data management and reporting. The facility check list captured information based on the theme of the WHO framework components such as human resources, medical equipments, stocks required for screening and service deliveries.

The qualitative method of the interview was conducted by using a semi structured questionnaire for administrative officials as block health officers and chief district health officer (CDHO) to understand the overall management of the programme. Both checklist and service providers' questionnaire were piloted in the study blocks before being used as data collection tool for the study.

On desk secondary data review of NCD cell was conducted to understand the reporting mechanism of the programme as well as the finances, the training and the structure of human resource at administrative level.

**Ethical Consideration:** Study protocol was approved by an Institutional Ethical review committee. Anonymity of participants was maintained and confidentiality of the data was ensured. Informed consent was taken from every participant in the study.

**RESULTS**

Total of the 55 facilities 19 health centres have one MBBS medical officer, other primary health centres

have Ayush medical officers and sub centres are run by Female health workers. Of the 41 service providers 21 MBBS medical officers, 8 Ayush Medical officers and 12 staff nurses were interviewed from the facilities. Majority of the doctors were in the age group between 21-40 years, and had been working for no more than 5 years in the particular facility. 57% of doctors were male. Mean age group of the service providers were 33 years with 6.5 SD.

Out of 15 PHCs, 60% have their own building with enough space to conduct screening for cervical cancer. Out of 4 CHCs only one is functioning in an old PHC building which was recently converted from PHC to CHC, while the remaining three CHC have adequate infrastructure with required services. Of the 94 sub centre only 34% have well-constructed new building.93% PHCs has facility of examination room. However, the facility is very poor at grass root level only 35% sub centres have provision of examination room. Equipments like speculum, anterior wall retractor (Standard Cu-T set) were available at 80% of PHCs, 75% of CHCs and 14% at sub centre level and other required stationary to screen the beneficiary.(Table 1)

**Available Services**

Screening for cervical cancer with Pap smear was not offered in all PHCs and Sub centres facilities, while is only one CHC offered screening with Pap smear. Of the 15% facilities had referred system for pap smear from sub centre or PHC to CHC.

**Table 1: Infrastructure in the selected centres**

Indicators	Type of Facilities			Total
	PHC	CHC	Sub centre	
<b>Total facilities visited</b>	<b>15</b>	<b>4</b>	<b>94</b>	<b>113</b>
No building/Under construction	27%	0%	27%	26%
New building//Old building	73%	100%	73%	74%
<b>Provision at facilities</b>				
Examination room	93%	100%	35%	93%
Examination Table/Curtain	80%	100%	61%	69%
Availability of Equipment (*Standard Cu-T set)	80%	75%	14%	36%
Availability of Basic Amenities (Water, Electricity)	87%	100%	25%	47%
Availability of consumable and Stationary	67%	75%	19%	36%

**Table 2: Available services in the selected centre**

Indicators	PHC	CHC	Sub centre	Total
<b>Type of services</b>				
Gynaec OPD/IPD	73%	100%	NA	27%
Cu-T	67%	75%	19%	48%
Anc care	100%	100%	86%	91%
Normal delivery/Minor surgery	53%	75%	0%	58%
Screening Test(Pap smear)	0%	25%	NA	2%
<b>Reporting system</b>				
Reporting Mechanism for cervical cancer cases/Suspected	100%		89%	91%
Any New initiative has taken or thinking	33%	25%	6%	15%
Referral Mechanism (Yes)	13%	25%	14%	15%

**Table 3: Manpower knowledge information**

Indicators	MBBS	Ayush	Staff Nurse	Total
<b>Training for collection Pap smear</b>				
Yes	38%	0%	67%	38%
<b>Knowledge (%)</b>				
Heard about Cervical Cancer	100%	100%	100%	100%
Believe C.C is Preventable	100%	100%	100%	100%
Believe C.C is Treatable	100%	100%	100%	100%
Association HPV and Cervical cancer	95%	50%	50%	71%
Know the common risk Factors	100%	63%	92%	90%
Know the common symptoms	90%	50%	33%	64%
Know the common screening methods	100%	75%	75%	88%
<b>Practices</b>				
Screening done	5%	0%	0%	2%
Referral for Suspected	90%	0%	58%	63%
IEC campaigns (Counselling)	90%	0%	75%	68%

However, as per national guidelines sub centre refer patient to the primary health centre and PHC refer suspected patient to the community health centre or another facility as per patient convenience. 33% PHCs have referral form book for suspected cases. Common reasons for referral were lack of equipments, staff vacancy or lack of trained staff. Only one CHC has received feedback from other institution. (Table-2)

**Available Services**

Only 2% of women who had come to facility were screened by service providers in last one year. Only 15% of the providers had taken any initiative to improve cervical cancer screening in their facilities. Majority of the facilities (91%) were found to have monthly reporting mechanism for suspected cases and 15% facility has referred suspected women in last one year, but no records for referral were found in the facilities. As per district health officer, now Pap smear test is not conducted at PHC, it will be implemented at PHC in phase two of the program, as per guideline it will be done at only CHC level. Providers also mentioned lack of training material for the screening of cervical cancer. There is no motivation for cervical cancer screening in MBBS medical officers, indicated one taluka health officer.

Although our quantitative data revealed that common reasons for referral were lack of equipments, staff vacancy and lack of trained staff whereas referral rate of the facilities was only 15%, hence to understand the contradictory findings, current situation, barriers, challenges and suggestion to overcome the challenges were included in our qualitative interviews of Taluka health officers and district officials.

Major barrier of the program is non-availability of tertiary care centre. There is only one pathologist in the district. Some of the MOs were trained for the collection of the smear at sub district hospital by gynaecologist. Because of limited patient flow at

hospital practical exposure was less for screening of cervical cancer. As all officials agreed that community awareness is much needed for mobilization of the women at the facilities. Chief district health officer said that staffs are well aware about the program and majority of officials agreed on required motivation towards the work among the staff. The Chief district health officer also believes that cervical cancer is not so prevalent in the district.

*“.....More common cancer is oral cancers, in our district cervical cancer is not common....” CDHO*

**Human resource or manpower**

Each PHC has one allopathic medical officer and one ayush doctor sanctioned post for well implementation of all national programs. Fifteen of the primary health centre had one MBBS doctor but not all had Ayush doctors. Some of the new Ayush doctors recently joined within 1-2 years under RBSK scheme; hence they were not included in the study. One of the challenge is MOs are newly joined in the system so they have to first understand the system functioning, so it's seem to that experiential power is more valued than positional power. Out of 41 service providers 38% were trained for Pap smear. None of the Ayush doctors were trained in any of the screening methods for cervical cancer.

All service providers knew about cervical cancer and it can be prevented and treated if it is diagnosed early but 71% knew about association between cervical cancer and HPV. Majority of Medical officers had the knowledge of common risk factors, symptoms and screening methods for cervical cancer, other providers were found to have less knowledge (64%) about common symptoms of cervical cancer. Majority of counselling (90%) for creating awareness regarding screening among women who came in OPD were done by Medical officers at PHCs and staff nurses at CHCs. (Table-)

## Other issues

There is no separate programme for prevention of cervical cancer in the study district. Majority service providers did not know about the programme or when it was launched. They were not aware about the guideline of the programme, said guideline was not provided in the training. No community awareness regarding cervical cancer screening programme.

On desk secondary data review showed that only 3 cases of cervical cancer were diagnosed in last one year. All reporting of the program was done by NCD cell at sub district hospital that handle current NPCDCS program and nodal officer of the program was superintendent of the sub district hospital. Nodal officer was dealing with the training part of the doctors and other health providers. Convergence between Nodal officer and chief district health officer in the department was lacking. District coordinator explained how much fund was allocated for the programme. There was no absolute inadequacy of the fund for the programme as mentioned in the financial reports.

## DISCUSSION

Information, Human resources, service delivery, good governance and adequate finance are essential elements of the health system as per WHO Framework. Women of the developed countries know the importance of the regular screening and the health system have adequate resources to implement cytological screening for cervical cancer but in developing countries cytological screening could not be feasible because of limited finance and resources<sup>10</sup>.

NFHS-4 data showed that only 22.3% women age 15-49 years that have ever undergone for cervix examination for any reasons in India. Screening method for cervical cancer is Pap smear (Cytological examination) in which cytopathologist required as per the programme guideline, but other literature suggested that VIA method is better than cytological examination in low resources setting. VIA is an alternate approach to cytology screening in developing countries<sup>10, 11</sup>. It can be performed by female health worker at PHC level and no need highly qualified professionals<sup>12</sup> but in the study district the Pap smear based screening was launched as screening method by the state and they are providing training for it.

Community involvement to generate demand is essential for increase high coverage of women for the screening of cervical cancer<sup>13</sup>. Study finding shows that there is availability of the screening services but there is no awareness in the community for the accessibility of the services. As per

WHO guideline, service delivery element is at four levels such as community, primary health centre, district level and medical college are suggested for population based screening for cervical cancer however in the district there is difficulty at base level.

The study done in Tanzania showed significant association between knowledge of the cause of cervical cancer among health care providers and diseases transmission<sup>14</sup>, the study showed that knowledge was quite good among health professionals about cervical cancer however it was not translated into actions. Majority HCPs were aware about only one screening method as Pap smear. Knowledge is essential but not sufficient for the utilization of the cervical cancer screening services by female health worker<sup>15</sup>. Motivation among health care providers play important role to work in the public health system and it comes from other source than knowledge. Continuous training and re-training of health care providers is very essential to implement any quality of screening program for cervical cancer in the public health system<sup>16</sup>. This study finding was unique because no other studies were done before in India or other South East Asian countries especially to understand the situation of tribal area's health system for screening of cervical cancer. One study was done in Malawi health system shows different major challenges like human resource, infrastructure and finance etc.<sup>17</sup>, However in this study there were major challenges in community mobilization and skill based training of service providers. Health workers are the backbone of the health system for effective implementation of any programme and both male and female health workers do home visit; maintain records and village level health promotional activities. Medical officer has to take lead for implement screening programme at PHC level and paramedical staff need to be trained for cervical cytology by skilled development workshop to screen community women<sup>18</sup>. High level stakeholder commitment from the decision maker should be needed for developing and strengthening cervical cancer screening programme<sup>19</sup>, the study finding suggested lack of political commitment is also one of the challenge to implement the programme. The programme coordinator must have ability to facilitate screening programme and provide supportive supervision for better monitoring and evaluation of the programme<sup>13</sup>, but there was vacant post of programme manager in the study district.

The limitation of the study was not explored the community woman's perspective about accessibility and availability of the health services. The sample size of the study was too small so it cannot

be generalized although it can be usable as per the geographic situation and demographic indicators.

### RECOMMENDATIONS & CONCLUSION

Effective implementation and utilization of the cervical cancer screening is depending on many factors from the health system as well as the community. For cervical cancer prevention and control programme, three components are more important in service delivery such as community Information and education, screening services and diagnostic and treatment, supported with referral and feedback structure of the health system

Based on study findings following Service Delivery Model was suggested for screening of cervical cancer.

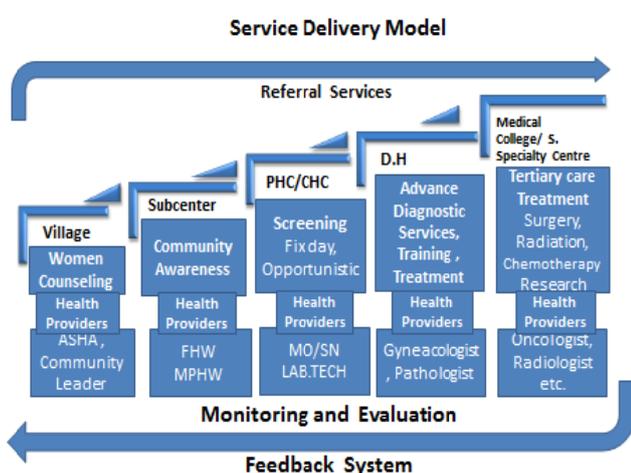


Figure: 1 Adapted Services Delivery Model for Screening of cervical cancer

Female Health workers and ASHA plays important role for counselling the women for screening of the cervical cancer. MPH can help to counsel male partner to give permission to get test done because in our country still Male dominant. Sensitisation of the health providers are needed during regular meeting.

- Strengthen mechanism for monitoring and evaluation by including indicators such as no.of screened women, no.of women consulted in OPD in Health management and information system's monthly reporting. Regular visit of the programme officer is required to facilitate screening services and check any difficulties.
- Opportunistic screening is the best way to initiate screening for cervical cancer and gain trust of the community to increase coverage of the screening services. Medical and Para medical staff should be trained enough to obtained opportunistic smears from relevant facilities, and it should be skill base and continuous.

- Set up mechanism of referral and feedback for the positive screened women for further management like advanced diagnosis including colposcopy.

In current study the health system of the district has provision of infrastructure to conduct a screening program at primary level. There are no financial constrain for planning of cervical cancer screening. Health system challenges in the study have found such as no community awareness as community perspective and lack of skill based training to conduct cytological based screening among health care providers. There was lack of motivation towards screening among health providers and low priority given to the programme was found in the study district.

Cost of the screening and treatment is high; so many women cannot afford to pay to private health sector. Integration of the cervical cancer control programme in NCD programme may cause of low priority compare to other non-communicable diseases.

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