



ICTPH launches Oral Health Intervention at Alakkudi Rural Micro Health Centre

by

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IKP Centre for Technologies in Public Health (ICTPH) is a not-for-profit research organization with its mission to innovate health-systems for remote rural populations. The four elements defining the ICTPH Health Systems approach are human resource, infrastructure & technology, financing and interventions ([Johar, 2010](#)). The intervention development practices at ICTPH are protocol driven with a prime focus to develop an integrated comprehensive healthcare delivery model with a wide range of services being offered at the primary care level. The healthcare delivery pilot anchored by ICTPH, along with its field partner SughaVazhvu currently has various specialized interventions for Vision, Infant nutrition, Cardio vascular diseases (CVD) and Women's health. This report gives a detailed account of launch of oral health intervention at Allakudi RMHC.

In our pursuit to offer an integrated primary health care model to the community, the oral health intervention was launched at Alakkudi Rural Micro Health Centre (RMHC) on September 19th, 2011. The generic areas of great significance prior to the launch were-

- Infrastructure development
- Training
- Communication
- HMIS

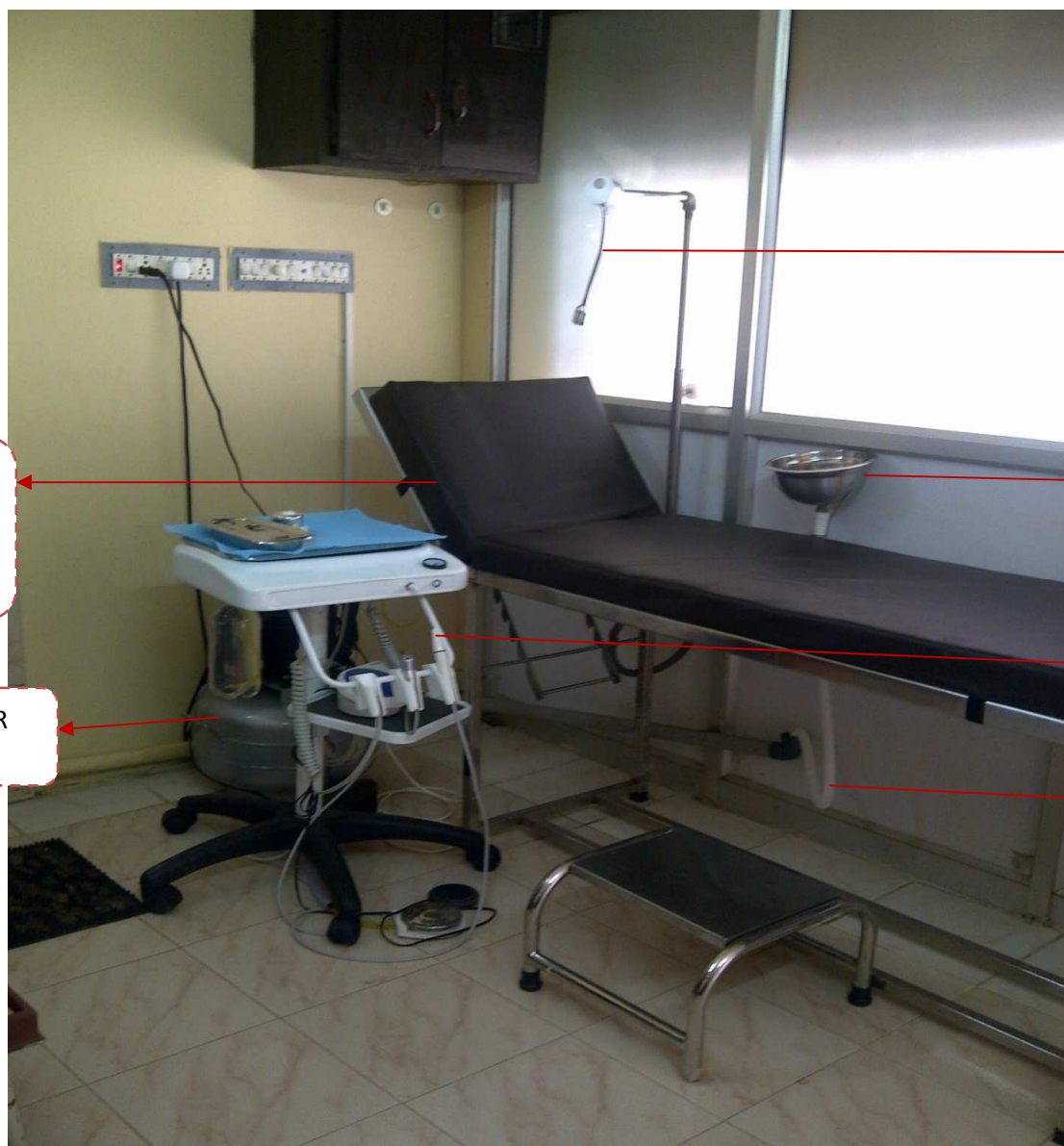


INFRASTRUCTURE DEVELOPMENT

The cornerstone to infrastructure development was the innovation in the design of dental chair. It was designed in-house as an alternative to the expensive non-customizable dental chair currently available in the market.

An adjustable examination bed was converted into a dental examination bed. A Light Emitting Diode (LED) fitted to an elevated stand on the side of the bed acted as the light source during examination and treatment procedures. A spitting bowl attached by the side of the bed has a direct connection to the drainage, which led to the hygienic disposal of by-products of scaling procedure. The design, conceptualized by Sabyasachi Das, design and innovation head, ICTPH, addressed not only the operational issues but also brought down the costs down substantially. Apart from the multi-functional utility of the dental bed, the entire set up cost Rs 50,000 less than dental chairs currently available in the market.

The novelty of the design was reinforced when it was shown to practicing dentists and representatives of a dental equipment company. They were fascinated by the simple but efficient design and clearly shared our view that this could be a solution to bring down the costs of services substantially if adapted in a resource poor setting.



LED LIGHT
SOURCE

ADJUSTABLE
DENTAL
BED

SPITTING
BOWL

COMPRESSOR

ULTRASONIC
SCALER

FLEXI TUBE
ATTACHING
SPITTING
BOWL TO
DRAINAGE

Innovative Dental Set-up at Alakkudi RMHC



TRAINING

In India, oral health services are presently offered only by the dentists, who are currently in short supply ([Provisioning Oral Health and Hygiene Services to Rural Indian Populations – ICTPH’s Integrative Primary Health-care Delivery Model](#)). To tackle the shortage of human resource availability to deliver specialist service, the concept of master trainer has been adopted. The idea is to recruit one qualified dentist and have him/her train our physicians. The master trainer’s role is not to treat patients by himself but to train the staff and oversee the quality of service delivery by the resident physicians in our RMHCs.

The master trainer is involved in all the aspects, right from the preparation of training manual to training of theoretical and practical aspects of oral health to the resident physicians. A hands-off approach was followed throughout the development of curriculum. The training manual comprised of both theoretical and practical aspects of dentistry. A practical module for sterilization was developed separately and was demonstrated at the RMHC to the physicians and the Health Extension Worker (HEW).

The training manual comprised of the following sections:

- Oral Anatomy
- Oral Pathology
- Treatment procedures (Atraumatic Restorative Procedure (ART), Scaling)
- DMFT (Decayed, Missed, Filled Teeth) and CPI (Community Periodontal Index)
- Instrument identification and Usage
- Oral Health education

The theoretical training went on for a week for the resident physicians, at the end of which they were evaluated. The practical training of the procedures included scaling, filling, DMFT, CPI. These were initially done on volunteers followed by treatment on patients. It was done under



constant supervision of the master trainer. Protocols have been developed for each procedure and are being strictly enforced.

COMMUNICATION:

Household (HH) distribution of pamphlets (Refer: Appendix I) was chosen as the mode of communicating the launch of oral health intervention to the community. Distribution agents were recruited specifically from the catchment area for this purpose. Printed pamphlets explaining the services being offered at the RMHC were distributed to each household in the catchment area. The agents were given specific instructions to stress on the availability of oral health services on a daily basis at the RMHC. This was done to avoid the misconception that occurred during the earlier vision launch, when the community thought that it was a one day camp. The availability of pre-enrollment data regarding the catchment area made the area distribution among the agents simple. Post distribution, a strict auditing procedure was conducted in a sample population across all villages to cross check on the information conveyed to the population. This also provided valuable feedback from the community of what they thought about the intervention prior to the launch.

HMIS

The HMIS changes are as follows:

PISP (Population based Individual Screening Protocol):

- What material do you use for cleaning your teeth?
- How many times do you brush daily?



The physician consultation page had the following changes:

CHIEF COMPLAINTS: (Refer: Appendix II Fig 2)

- Tooth ache
- Sensitive teeth
- Worn out teeth
- Ulcers in mouth
- Burning in mouth
- Cracks in mouth
- Bleeding in mouth
- Swelling in mouth
- Mobile teeth
- Missing teeth
- Misaligned teeth
- Broken teeth
- Stains on teeth
- Bad breath
- Misaligned jaw

REVIEW OF SYSTEMS: (Refer: Appendix II Fig 3)

- Tooth ache
- Calculus deposits
- Stains
- Sensitivity
- Mobile tooth

- Ulcers
- Bleeding gums
- Bad breath
- Swelling of tongue
- Cracks

PHYSICAL EXAMINATION: (Refer Appendix II Fig 4)

This part has been divided into

- Teeth
- Gums
- Mouth

The teeth component of physical examination has detailed standardized numbering of teeth which could be of great help during follow up visits, referral and also provides us with enriched data which could potentially be very useful in case of a detailed study.

DIAGNOSIS: (Refer Appendix II Fig 5)

- Glossitis
- Angular Chelitis
- Aphthous Ulcer
- Herpetic Labialis
- Gingivitis
- Dental Fluorosis
- Dental Caries



TREATMENT (Refer Appendix II Fig 6)

- Scaling
- Dental Filling

SERVICES AT OUR RMHC

Under Phase 1 launch of oral health intervention the following diseases conditions are treated
Glossitis-

- Angular Chelitis
- Aphthous Ulcer
- Herpetic Labialis
- Gingivitis
- Dental Fluorosis
- Dental Caries

The services offered are:

- Atraumatic Restorative Treatment (ART)
- Scaling
- Medication for Oral Health Lesions
- Oral Health Education



ART for Dental caries

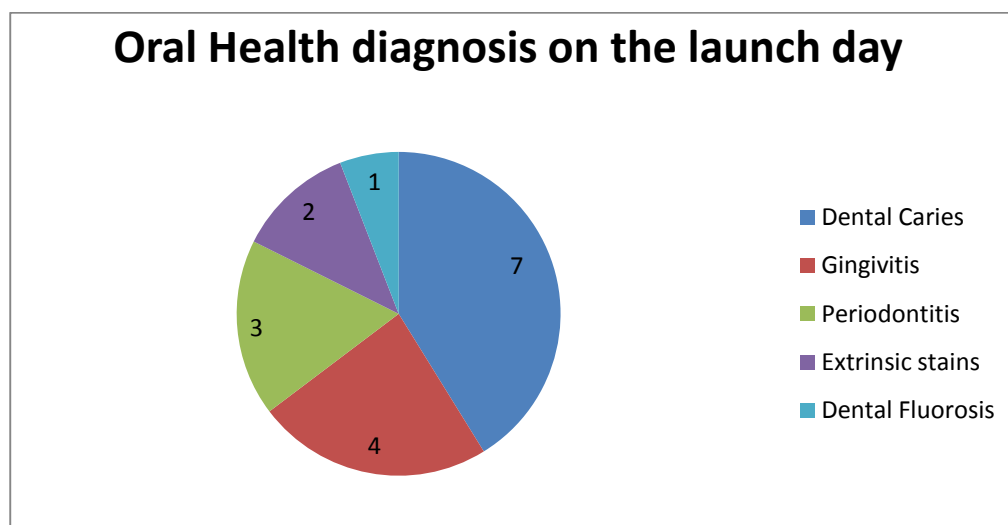
Rationale:

One of the preventive restorative treatment concepts that had emerged in the mid-nineties was the Atraumatic Restorative Treatment (ART) approach. ART is one of the existing minimal intervention approaches that removes demineralized tooth tissues using hand instruments and restores the cleaned cavity and adjacent pits and fissures with an adhesive filling material, usually glass ionomer cement. No electricity is required and local anesthesia is rarely asked by people treated by the ART approach. This was in contrast to the current method of treatment which involves cavity preparation by mechanical drilling which results in loss of normal tissue as well. Another important aspect was the fact that it preserved the normal tooth and just involved removal of decayed tissue. To counter the non-availability of dentists and to utilize the resource available to full potential we decided to adopt the World Health Organization (WHO) recommended ART approach to extend treatment for caries to our rural geographies. This method has been adopted after consultation with program officers of Mahatma Gandhi Post Graduate Institute of Medical Sciences at Pondicherry who were involved in a project with World Health Organization (WHO) to test the effectiveness of ART and came out with encouraging results.

ON THE DAY OF LAUNCH:

There were 17 patients on the day of launch at the Alakkudi RMHC. The patients examined on the dental bed were very comfortable and expressed satisfaction with the entire set up. Initially the physical examination component of HMIS which involved detailed numbering of decayed teeth was a challenge to the physician. But within few entries into the HMIS the physician was comfortable with it. The master trainer supervised the physician and kept a check on the accuracy of diagnosis of the physician. The HMIS entries were also closely monitored by the master trainer to prevent erroneous entry of data. Among the 17 cases, one case of Gingivitis

was advised scaling. The remaining 16 cases had to be referred because of the advanced nature of the ailments. The dental caries cases which were referred required either root canal treatment or had to be extracted. The advanced gingivitis cases required flap surgery. The periodontitic cases were mostly in advanced stages requiring tooth extraction. The dental fluorosis case required cosmetic treatment to remove stains and hence it was referred. Extrinsic stains were severe with very poor oral hygiene and were referred since the effect of scaling would have been limited. Most of the patients were accessing oral health service for the first time and were eager to hear about maintenance of oral hygiene and brushing techniques.



The figure shows the distribution of oral health diagnosis on first day of launch with 7 patients diagnosed with Dental caries; 4 with Gingivitis; 3 with Periodontitis; 2 with Extrinsic strains; 1 with Dental Fluorosis

LESSONS LEARNT:

During non-formal interviews with people accessing the RMHC for services, it was realized that the unavailability of any oral health services in the vicinity had forced people to try alternative methods to treat oral health ailments. Few common practices in vogue are tobacco chewing and



usage of locally prepared medicinal powders for toothache. The nature of complaints of majority of patients were advanced in nature (For eg: Mobile teeth, Pocket formation etc) .It required referral and was beyond the purview of being treated at primary care level. Tooth extraction was mostly preferred by the patients to get rid of the pain. There was a belief that extraction of teeth would solve the issue of recurrent infection. Oral hygiene practices were generally poor with most of the patients regularly using some form of tobacco or betel nut, which left excessive stains on their teeth. Majority of the patients were not aware of brushing techniques and brushed once a day. Interestingly, brushing with toothpaste was found to be extensively prevalent suggesting that old modes of brushing with brickpowder etc. are now being replaced.

WAY FORWARD

The launch of primary care oral health services at RMHC has provided an opportunity to the population in our catchment area to avail services for oral health ailments and prevent using unrecommended practices. But the curative services being provided at the RMHC can be fully utilized only by seeking treatment early. Hence in order to add value to our service provision we are on our way to include the following:

REFERRAL CHAIN

The advanced nature of cases of patients availing services at the RMHC has indicated the urgent need to have a referral chain with standardized rates and quality of service. There have been several challenges in setting up of referral chain. A survey conducted in the nearby areas of Thanjavur and Pattukottai revealed that the pricing of services was not standardized with the quality of services depending on the individual's capacity to pay. The pricing was also found to be disproportionately high for certain services especially the Root Canal treatment, which was recommended for advanced dental caries. These reasons have had a profound impact in the way we set up referral chain with specific focus being given on standardized pricing and quality of services.



SCHOOL BASED INTERVENTION:

The advanced nature of oral health ailments has brought to the fore the urgent need to change the perception of community towards oral health. One of the community based initiatives will be provision of oral health education through a school based intervention to increase the awareness of importance of oral hygiene. It will soon be launched in the public school adjoining the RMHC.

PHASE II LAUNCH

The second phase of oral health intervention will be aimed towards Oral Candidiasis, and oral cancer with specific objective to prevent oral cancer by focusing on tobacco cessation. It would also involve identification of pre-cancerous and malignant lesions and setting up of a referral chain for further investigation and treatment.

ORAL CANCER

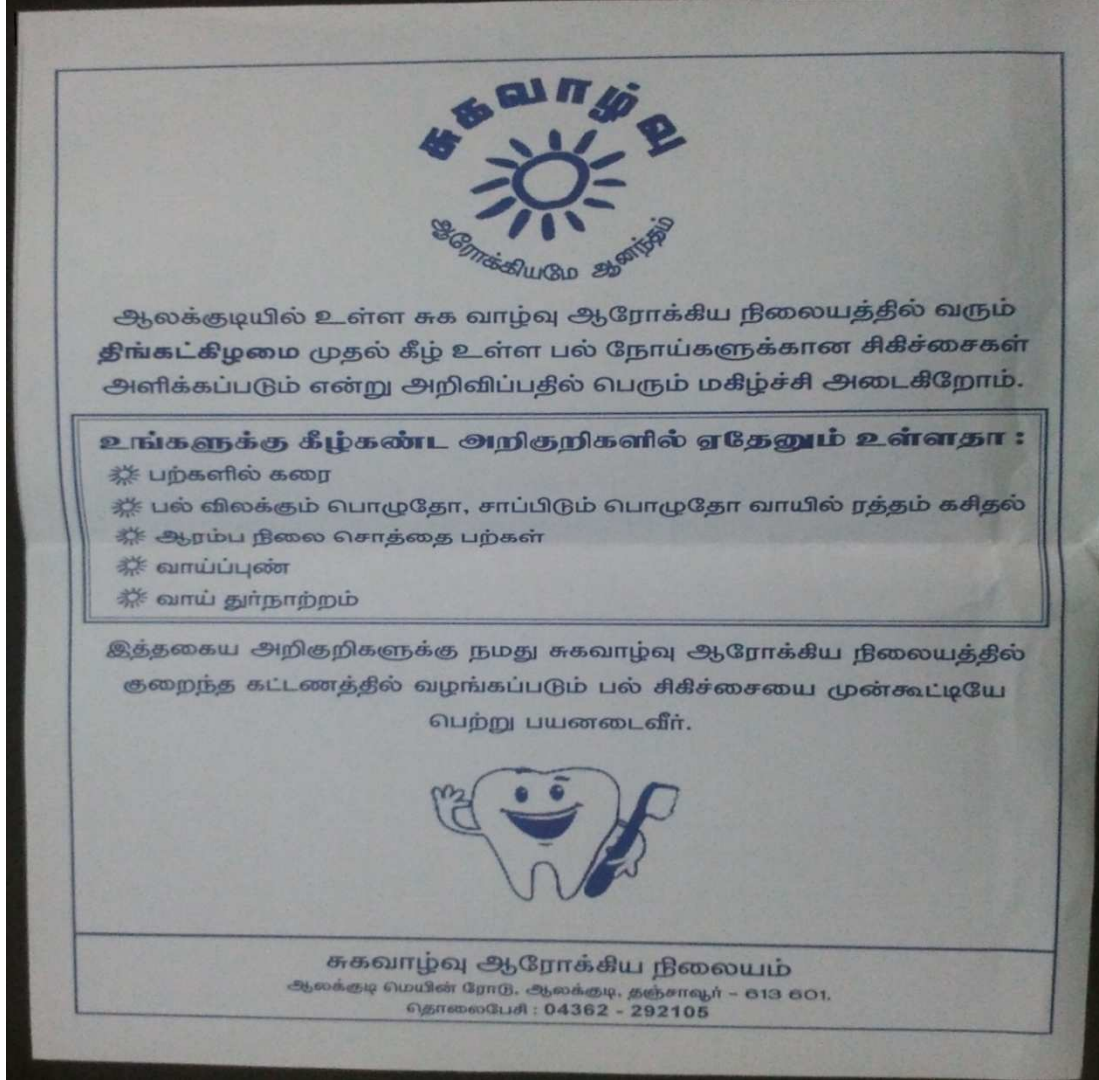
According to the Global Adult Tobacco Survey (GATS 2010) released in October 2010, nearly one-third of the Indian population, including children and youth, were addicted to smokeless tobacco. The country has the highest number of oral cancer cases in the world with 75,000 to 80,000 new cases of oral cancer being reported every year. Tobacco consumption has been found to be a major problem in our catchment area as well, with PISP data showing that 35-40% of population who have accessed RMHC services being regular users of various forms of tobacco. Continued usage of tobacco leads to an individual getting addicted to the habit. Prolonged usage of smokeless tobacco is found to be associated with various forms of oral cancer, which is increasingly becoming a major public health problem. The acuteness of the problem has been recognized and ICTPH is actively involved in identifying institutions to partner with that could help play a major role in prevention of oral cancer by a tobacco cessation program.



Oral Health Intervention

Overall the launch of oral health intervention has been positive with the community actively accessing the RMHC for oral health services. The measures mentioned above, combining both the preventive and curative aspects of oral health with setting up of referral chain would go a long way in mitigating the oral health related morbidity with simultaneous improvement of overall oral hygiene status of the community in which we serve.

APPENDIX I:



This snapshot shows the Tamil pamphlet that was distributed to the community communicating the launch of oral health intervention at our RMHC

APPENDIX II

Fig 1: PISP

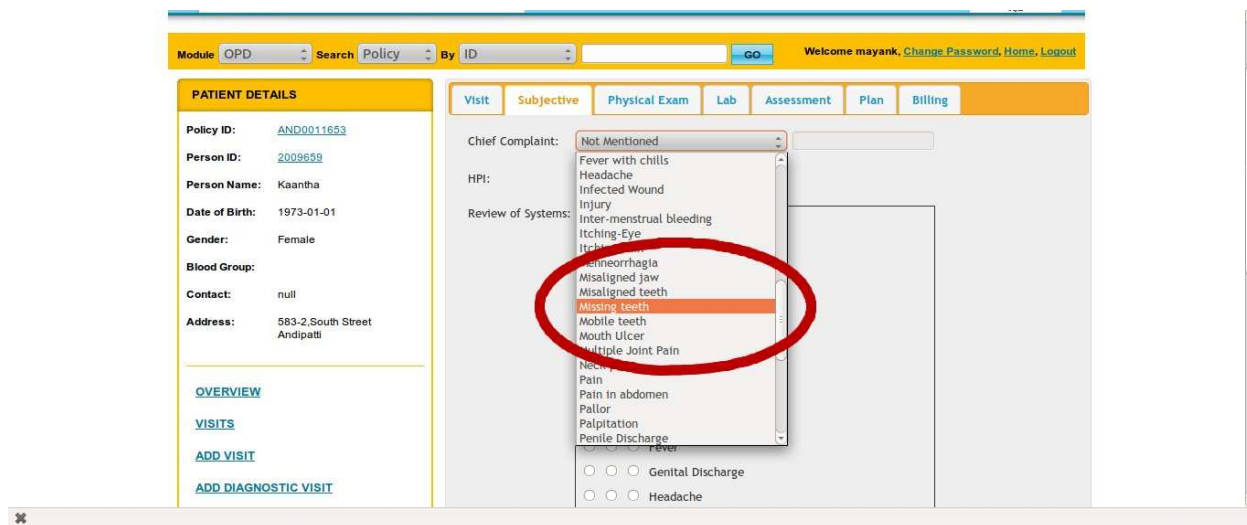


Height in centimetres cm
Weight in kilograms kg
Waist circumference in centimetres cm
Hip circumference in centimetres cm
Visual Acuity
Distance vision (Right)
Distance vision (Left)
Near vision
Cataract
Oral Hygiene
What material do you use for cleaning your teeth?
How many times do you brush daily?

Once
Twice
After every meal
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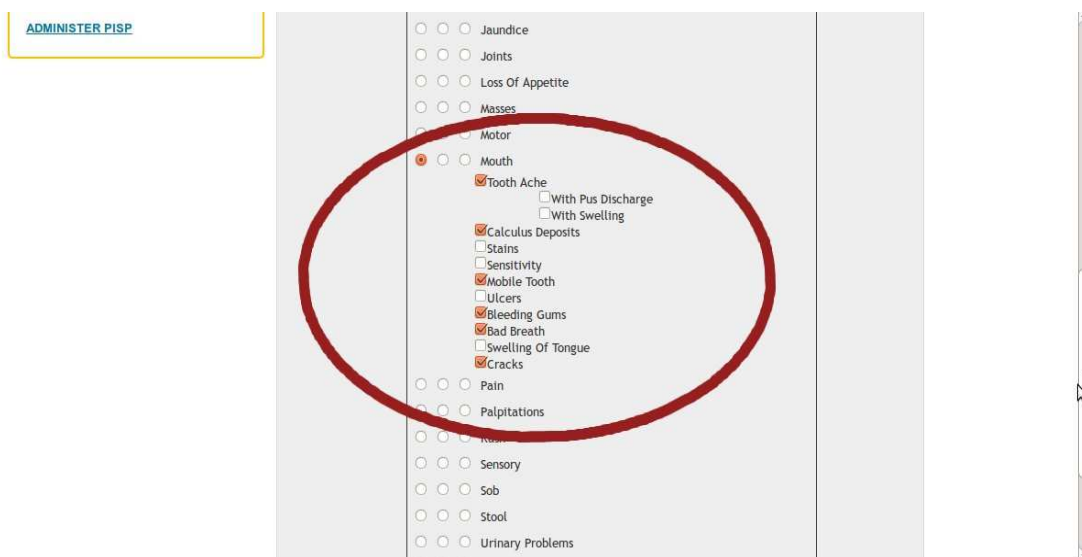
This snap shot shows the 2 questions that were included in the PISP to assess the oral hygiene status of the individual and this will be done by the HEW

Fig 2: 'S' in SOAP methodology- Chief complaints



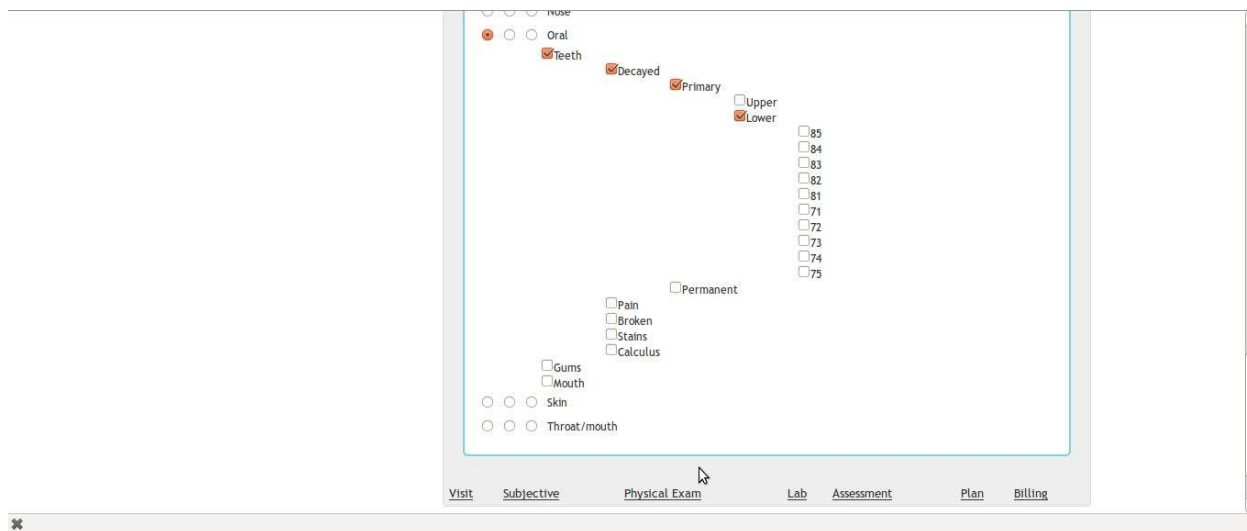
This snapshot shows the data entry of chief complaints on the clinician's page as a part of consultation protocol

Fig 3: Review of systems -Mouth



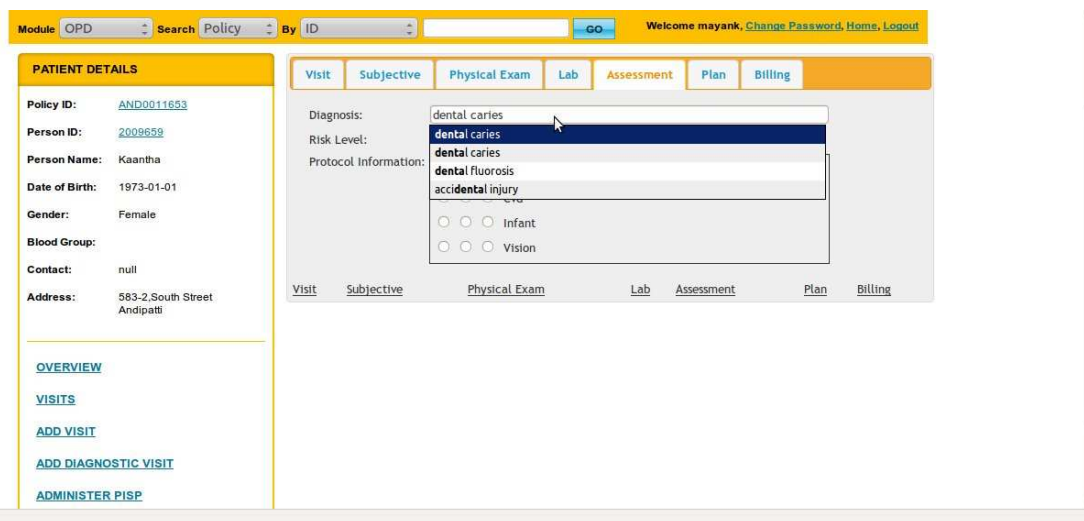
This snapshot shows the data entry of Mouth component as a part of review of systems done by the physician

Fig 4: Physical examination –Teeth, Gums, Mouth



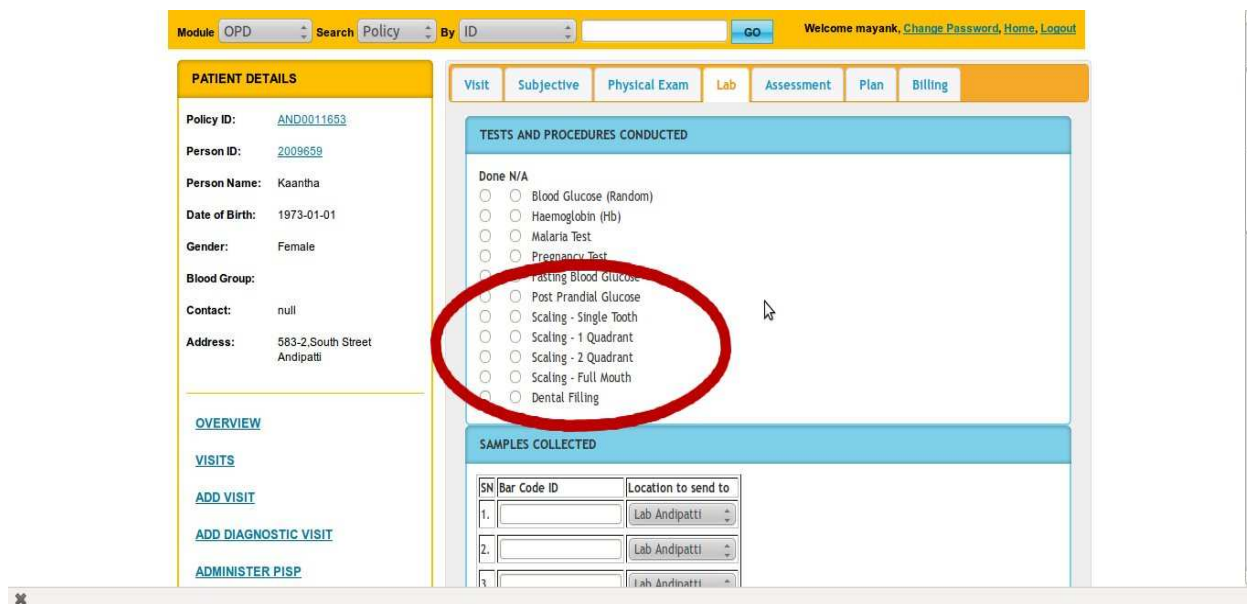
This snap shot shows the data entry of Oral component as a part of physical examination by the physician. It shows the detailed entry for decayed teeth under sub component teeth with separate entries for gums and mouth

Fig 5: Diagnosis



This snapshot shows the data entry of diagnosis as a part of assessment done by the physician

Fig 6: Treatment



This snapshot shows the scaling procedure and the dental filling as a part of procedures that are prescribed after diagnosis



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