



Study Report

**Qualitative assessment of Kayakalp programme for Public Health care
Facilities**

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Family Welfare, Government of India**

Conducted by

**POPULATION RESEARCH CENTRE
INSTITUTE OF ECONOMIC GROWTH**

Prof. Suresh Sharma, Ms. Bindiya Kumari and Ms. Ritwika Mukherjee

**INSTITUTE OF ECONOMIC GROWTH
UNIVERSITY OF DELHI ENCLAVE, NORTH CAMPUS
DELHI 110007**

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Abstract

Cleanliness & hygiene practices in any healthcare facility are regarded as important factors to determine the quality of services delivery. In this context, Ministry of Health and Family Welfare (MoHFW) has launched a Kayakalp Award Scheme to promote cleanliness, hygiene and infection control practices and also enhance the quality of public healthcare facilities. The purpose of this initiative was not only to recognize such public healthcare facilities but to also show exemplary performance in adhering to standard protocols of cleanliness and infection control. Under this backdrop, this study will investigate the impact of the programme on cleanliness, sanitation, hygiene and infection control practices in the Kayakalp awarded public health facilities in selected districts of Uttar Pradesh. This study will also try to identify the path through which Kayakalp would have an impact on patient satisfaction and staff satisfaction/motivation. Apart from these, the study will also examine whether monetary factor is the sole motivation for health care staff to maintain cleanliness, or are there other factors at work. Lastly it will attempt to establish whether the Kayakalp award selection processes were based on fair criteria. Descriptive statistics have been employed to analyze the data collected for fifteen facilities at the secondary and primary level of health care. Impact assessment of the Kayakalp programme have been attempted with a pre-post analysis using perception data collected from the facilities to determine any significant change in the performance of the facilities after the programme implementation. Results from the paired t-test depict statistically significant shift in facility performance for infection control, hygiene promotion and sanitation and hygiene among others with relatively higher means during the post implementation period. Across districts, the highest positive change was observed in case of Sultanpur due to its relatively lower value prior to the programme implementation whereas Ghaziabad and Ayodhya were performing better even before the launch of the programme. At the facility level, major improvement was noticed for the upper health tiers (District Hospitals) in comparison to the lower tiers (PHCs). Willingness of the staffs to work for the betterment of the facilities primarily came through self-motivation and recognition factors than through monetary incentives particularly at the primary level of care. Innovative practices were adopted by the facilities in par with the programme using cost-effective utilization of resources. Thus, the programme appeared as a blessing for the health care facilities although it has scope for future improvements.

Keywords: Public health facilities, Kayakalp selection, Cleanliness, Infection Control and Impact assessment.

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Prof. Suresh Sharma
Ms. Bindiya Kumari
Ms. Ritwika Mukherjee

Abbreviations

BMW	Bio Medical Waste
CHC	Community Health Centre
CMS	Chief Medical Superintendent
DCQA	District Consultant Quality Assurance
DH	District Hospital
DWH	District Woman Hospital
ETO	Ethyl Oxide Sterilization
HQM	Hospital Quality Manager
ICC	Infection Control Committee
MO	Medical Officer
MOCH	Medical Officer Community Health
MoHFW	Ministry of Health and Family Welfare
MOIC	Medical Officer In-Charge
MS	Medical Superintendent
NHM	National Health Mission
NHSRC	National Health System Resource Center
NQAS	National Quality Assurance Standards
OPD	Out Patient Department
OT	Operation Theatre
PHC	Primary Health Center
PPE	Personal Protective Equipments
PVC	Poly Vinyl Chloride
RKS	Rogi Kalyan Samiti
SBA	Swatch Bharat Abhiyan
SDH	Sub-Divisional Hospital
SOP	Standard Operating Procedures
ETP	Effluent Treatment Plant
UP	Uttar Pradesh
UT	Union Territory

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Introduction

Kayakalp programme, which was launched in the year 2015 was a cleanliness and Hygiene drive initiated to promote proper sanitary standard in the public health premises in India. To complement the Swacchta Guidelines of the public health facilities, Ministry of Health & family Welfare has inaugurated the Kayakalp program to commend those health facilities that have demonstrated excellent sanitation, cleanliness and hygiene promotion. The award is given at the level of three health tiers: District Hospital, CHC and PHC. Cleanliness & Hygiene promotion practices had always been a neglected area with respect to public health care facilities. Kayakalp programme has evolved as a revolutionary strategy towards up gradation of public healthcare facilities. Its main objective was to inculcate a culture for promotion of cleanliness, infection control and hygiene practices in the facilities by incentivizing & recognizing the facilities showing exemplary performance in adherence to Kayakalp guidelines & thereafter sustaining such practices as well.

The assessment process consists of three steps:

- Internal Assessment (by facility staff & scores to be reported to the district: Facility)
- Peer Assessment (by team of other district hospital under the divisional purview: Other District)
- External Assessment (by team of trained external assessor: State)

The assessment involves a stepwise procedure. After being nominated in the internal & peer assessment it goes for review for external assessment that is usually constituted at the state level. After reviewing these steps, the facilities are ranked based on scores obtained and the facilities acquiring maximum scores are declared the winners and awarded accordingly. Peer assessment provides the basic foundation of this assessment process because of more validated results conducted by the team of other district on which the external assessors may rely upon. Internal assessment is often biased and left to the discretion of its own facility staff. Peer assessment helps to identify the gaps and with shared experiences they can help in innovating how to further improve the program.

Criteria for the application to the Awards Scheme:

Following are the prerequisites in order to apply as a recipient of Kayakalp award -

- Constituted a Cleanliness and Infection Control Committee.
- Instituted a mechanism of periodic internal/peer assessment based on defined criteria.

- Achieved at least 70 % in the criteria during the peer assessment process.

Selection of facilities

The awards for individual public health facility will be given to those that score the highest based on a set of defined criteria. There are three sub categories i.e. DH, SDH/CHC & PHC for awards:

Table 1: Cash Awards for States/UTs (DH, CHC & PHC)

Category	Number of Districts	Assessment Score	Amount (Rs. in Lakhs)
DH level			
I. A	10-25	Highest (Best)	50
2. B	26-50	Highest (Best)	50
		Runner up	20
3. C	>50	Highest (Best)	50
		Runner up-1	20
		Runner up-2	10
SDH/CHC Level			
Small State	<10	Highest (Best)	15
Large State		Highest (Best)	15
		Runner-up	10
PHC Level			
For all States		One in each District	2

Above table clearly depicts that, in every state, the first- and second-best district hospitals shall receive cash award of Rs fifty and Rs twenty lakhs respectively. For small states only the first ranking facility in this category will be awarded. At CHC level, first and second ranked CHCs/ SDHs will receive cash awards of Rs. fifteen and ten lakhs respectively. In relation to Primary Healthcare Centre, the best PHC (24x7) will receive a cash award of Rs. two lakhs. Moreover, in order to motivate, sustain and improve performance in facilities that scored over 70%, but could not make it to the list of top two/one in a particular year, a Certificate of Commendation plus cash award would be given as follows:

- District Hospital Rs. 300,000
- CHC / SDH Rs. 100,000
- Primary Health centres Rs. 50,000

As per the Kayakalp programme guidelines, 75% of the cash award amount will go to the Rogi Kalyan Samiti for investments in improving the amenities, upkeep and services, while 25% of the cash award will be given to the facility teams as a team incentive.

Situational assessment of Kayakalp program in Uttar Pradesh

Kayakalp programme was implemented in Uttar Pradesh under the stewardship of Shri Shivakant Ojha in 2015-16. The scheme initially began for the District Hospitals, later expanded upto PHC level in the second phase and finally incorporated all the urban public health facilities by the year 2017. Within four years of launch in the state, 65 DH, 46 CHCs and 66 PHCs were Kayakalp awarded in the state out of 196 DHs, 766 CHCs and 3679 PHCs in 2018-19.

Program hierarchy: The program is constituted at three tiers of implementation. The apex body i.e. at the state, the Mission Director is responsible for co-ordinating the whole sanitation program with guidance from the General Manager of Quality Assurance. While at district level, the program is monitored by the DPM and ACMO-RCH Nodal Officer with support from District Quality Consultant. The role of the Quality Consultant assumes of larger significance as they provide the link through which the nodal officers officiate their tasks. They are chiefly responsible for grading the health care facilities and assist the scoring for each health facilities thereby selecting which facilities should go for Kayakalp certification. At facility level Hospital Quality consultant (Quality Manager at DH level) is responsible for ensuring quality in non-clinical services such that hospitals meet the regulatory compliances under the program.

Roles, responsibilities and trainings: The state supports the districts through regular training of programme at regular interval of time that complies with regards to the programme. Training and capacity building are important to retain and improve skill and knowledge so that the health staffs understand what is required with regard to the programme. In the study districts, the following training were conducted: Record Keeping, Cleanliness, Hand Washing, BMW Segregation, Infection Control Practices, use of ETP in lab, Proper Implementation of 5's & Use of PPE. Training and workshops led by NHSRC quality management cell that are targeted to Quality Manager, Hospital Manager, Quality assurance team and various nodal officers of Quality and Assurance in respective health departments from time to time have created a sustainable culture of the program initiative. The state is also responsible for conducting external assessment in order to notify which facilities are the final winners of the state programme. Besides this state also facilitate the peer review assessment which are done by officials of other districts. The state is instrumental in charting out the guidelines from time to time and distributing financing to the lower tier. The health administration served as an intermediate yet important position because whatever sort of assessment (external or peer) is done has to pass via the health administration. The district

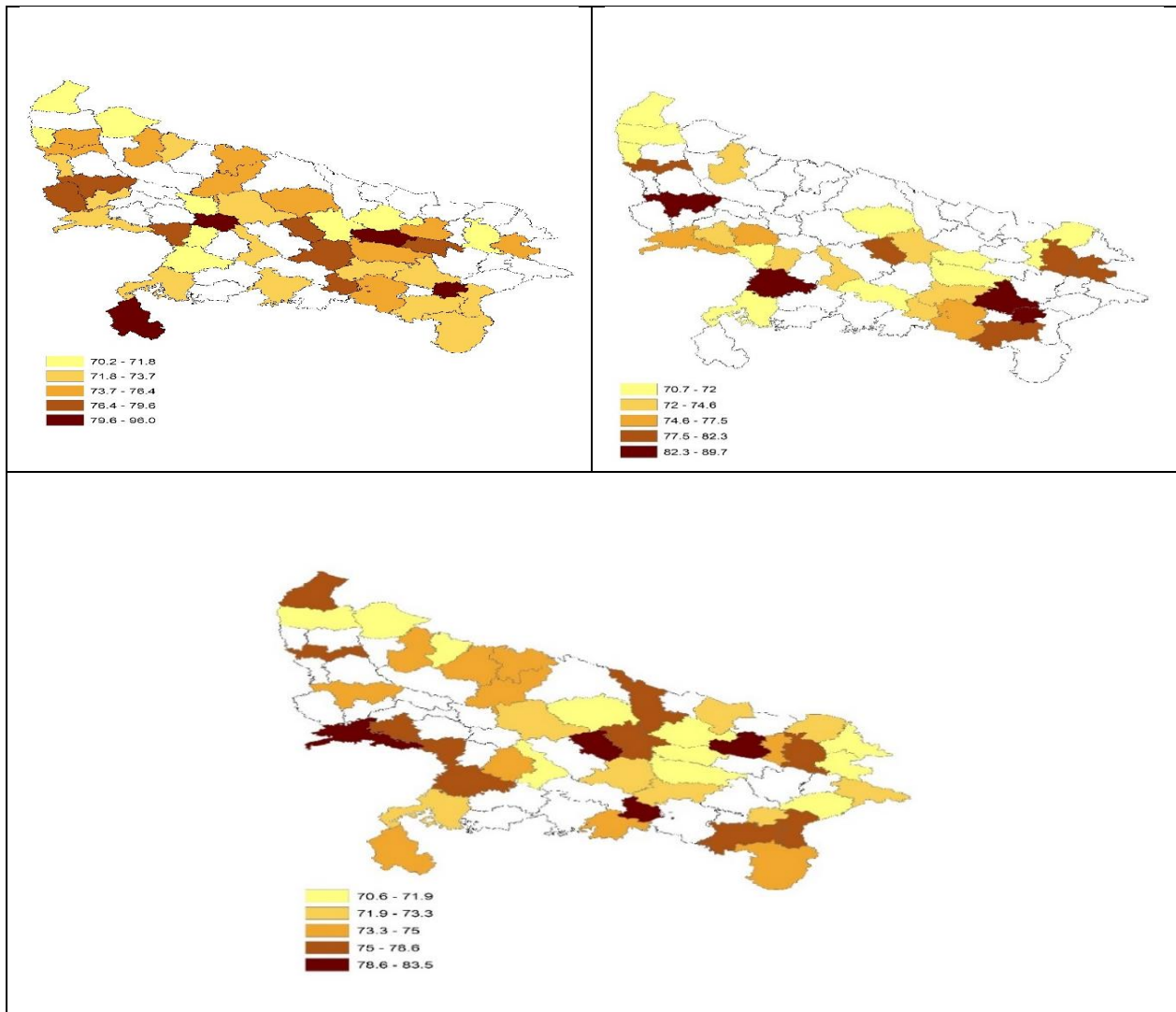
regularly conduct training regarding quality care services and provide roadmap to improve score which has been lagging behind in the internal assessment.

A brief review: The programme has a mixed bag of review in the state and it follows a top-heavy structure. It has been more beneficial in improving the sanitation standards at the DH level. Out of 196 DH, 65 are Kayakalp certified, accounting to 33.16 percent. While in case of PHCs only 1.79 has been awarded.

As in case of any programme implementation, chances of appropriating programme benefit lie with those who can easily access through position of power and administrative strength, in the same way it was also observed in this programme. How far the programme can reach to the bottom facilities needs to be seen and is a matter of time and will. The current scenario observed in the state points to certain deviations from the state mandate of the programme. For example, in support services the state is lagging behind, whereas infection & hygiene promotion, lot of improvement can be seen even in the backward district. Effective training and monitoring have rendered to this improvement. Overall, the programme had a positive touch and the competitive aspect of the programme has especially helped the facilities to improve, unless serious handicaps due to delay in flow of funds and poor infrastructure exists.

Our study has been confined to a few selected districts of Uttar Pradesh. Figure. 1 gives the situational analysis of all the Kayakalp award winners in Uttar Pradesh for the year 2018-19. Internal heterogeneity of Kayakalp awardee can be observed within the districts. As stated before, overall the district hospitals have registered a higher score than the CHCs and PHCs. The maximum score obtained for district hospitals corresponds to 96% in Kannauj district followed by Faizabad scoring 90.2%. The CHCs stand at an intermediary position with maximum score observed for Jalaun scoring 89.7%. In case of PHCs, the best performing district is Kaushambhi that has obtained Kayakalp score of 83.5% in 2018-19. Lucknow is one of the few districts that has shown consistent performance for all the facilities. It has scored 77.5% for district hospitals, 79.7% for PHCs and 81.8% for CHCs. Varanasi has performed well for DH (85%) and CHC (88%). But in case of PHCs, it has just crossed the Kayakalp award criteria scoring 72.8%. There are some districts that have bagged awards for some facilities but have missed for other facilities. For instance, Jaunpur district has been awarded for its district hospital and CHC, but it could not achieve for its PHC. Bahraich has achieved award for PHC, but missed for district hospital and CHC. There are some others like Kheri, Shrawasti, Mahoba, etc which was not awarded for any facilities whatsoever.

Figure 1: Kayakalp awarded districts of Uttar Pradesh (2018-19)



The study is divided under three parts. The first part deals with the impact assessment of the program of pre and post implementation. The next section will assess the implementation differentials in Kayakalp protocols due to intervening factors. The third section will emphasise on the innovative practices adopted by facilities and the study will then conclude by critically assessing the successes and drawbacks of the program and it's solution. The unit of analysis of this study is at the facility level which are Kayakalp awardees. In depth analysis has been conducted through structured questionnaire and information collected from concerned quality assurance team of the facilities.

Background

Medical mishaps and hospital related infections are some of the adverse causes that lead to whooping number of loss of healthy life in India. Worldwide it has been found that improving the quality and safety of care related services can critically improve mortality and morbidity levels and strengthen the public health facilities. In India specific quality assessors have been incorporated to evaluate the performance of critical care variables in public health units. The Kayakalp scheme is one of the mission targets that were launched with the intention to achieve tangible improvements in sanitation and hygiene of the public health care facilities. It goes hand in hand with the National Quality Assurance Standards and was believed to be scaling up the standards of the overall quality certification of the health care facilities. It is a complete guide to assess the status of cleanliness in public health facilities. The healthcare facilities are awarded based on their performance on six parameters/thematic areas namely; Hospital/Facility Upkeep, Sanitation & hygiene, Waste Management, Infection Control, Supportive services & Hygiene promotion as shown in Figure 1.

Figure 2: Key areas of assessment



The Programme was a blessing for the district hospitals across India in improving hospital infection, sanitation and hygiene. Case studies of particular facilities for specific themes have highlighted the in-depth mechanisms and practices of the secondary health care facilities, for example like waste management, what change in outcomes and processes has evolved after the program implementation. The impact assessment of the program has been studied keeping

in light the scorecard of the Kayakalp awardees after the program implementation. In this context, the study will uniquely aim to understand the structural shifts following the program implementation for both primary and secondary health care facilities and the major factors that drives the quality improvement parameters from a facility centric approach.

Study area

Uttar Pradesh one of the largest states in India has shown considerable upliftment in health care outcomes since the launch of the National Health Mission. It is one of the states where patient load is excessively high upon the health care facilities. Hence it becomes essential to administer the quality parameters of the program in the light of the cleanliness drive of the mission program. 5 districts that have been randomly chosen for the study are: Ghaziabad, Pratapgarh, Sultanpur, Faizabad (Ayodhya) and Kaushambi. Figure 1 depicts the location of the study area. The following Table (2) illustrates the details of all the visited healthcare facilities. The main motive of the visit at facility was to see the impact of Kayakalp for the same. Moreover, the interaction provides an enriching insight about the government initiative & public health care facility.

Figure 3: Location of the Study Area

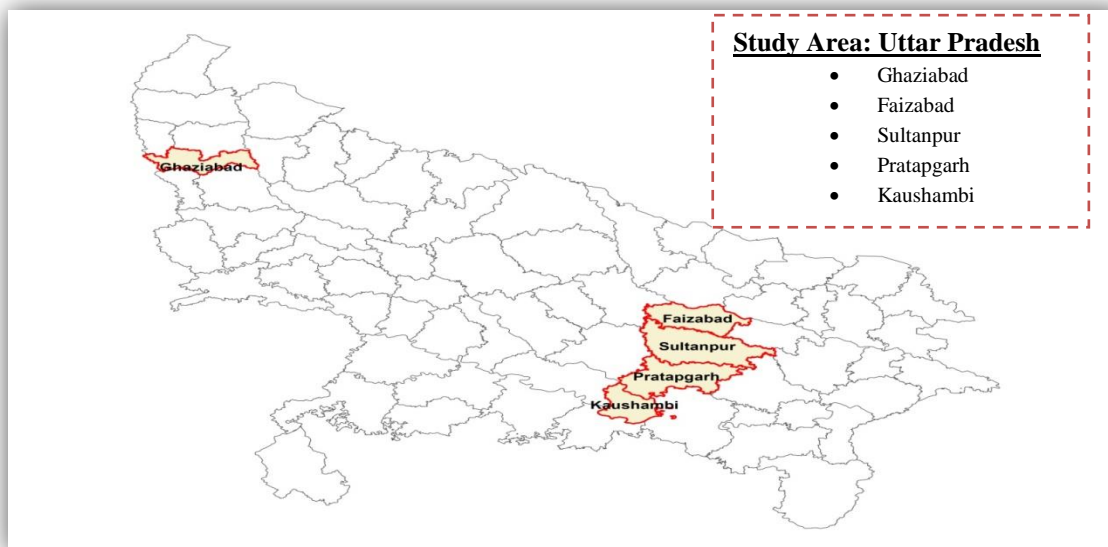


Table 2: List of visited healthcare facilities

Name of Facilities		
DH	CHC	PHC
DH, Ghaziabad	CHC Dasna, Ghaziabad	PHC Newari, Ghaziabad
DH, Kaushambi	CHC Kada, Kaushambi	PHC Newada, Kaushambi
DH, Pratapgarh	CHC Kunda, Pratapgarh	PHC Sukhpal nagar, Pratapgarh

DH, Sultanpur	CHC Dubeypur, Sultanpur	PHC Haliyapur, Sultanpur
DH, Ayodhya	CHC Poora Bazar, Ayodhya	PHC Patranga, Ayodhya

Research Questions

The following are the questions which are intended to be answered in the given study:

- What is the impact assessment of Kayakalp on cleanliness, sanitation, hygiene and infection control practices in public health care facilities?
- Can monetary factor be the sole motivation for health care staff to maintain cleanliness, or are there other factors at work?
- What are the innovative and good practices adopted by the health care facilities in compliant with the Kayakalp programme?
- What is the level of fairness with respect to Kayakalp award selection?

Objectives of the study

- I. To evaluate the impact of Kayakalp on cleanliness, sanitation, hygiene and infection control practices in public health care facilities.
- II. To evaluate/ monitor whether monetary factor serves as a sole motivation for health care staff to maintain cleanliness, or whether there are other factors which drive them towards Kayakalp Award Scheme.
- III. To assess the staff motivation for Kayakalp in planning and implementation.
- IV. To assess how fair are the Kayakalp award selection.

Rationale of the Study

Quantifying quality in public health facility has never been an easy task in India, despite quality framework/ standards being available. In India reportedly 16 lakhs die every year owing to poor quality of healthcare facilities. However, India can save 3 out of 5 lives by providing good & quality health care (The Lancet Global Health Commission, 2018). Cleanliness & hygiene practices in any healthcare facility are regarded as important factors to determine the quality of services delivery. Moreover, cleanliness not only prevents the spread of infection but also provides the patients a positive experience. Hence, Quality of care in health care services offer manifold benefits to the facilities as well as the patients in terms of goodwill, upkeep, lower infection rates and promotion of healthy behavior. In this context, this study will try to assess impact of Kayakalp programme in maintaining & promoting

cleanliness, hygiene and infection control practices in the public healthcare facilities. This study will be beneficial in bringing forth the public health service delivery to surface in terms of hygiene & cleanliness promotion at beneficiaries and community level which will in turn promote trust and confidence of the community in public health care facilities.

To achieve the ambitious target of the program, the program's intention was to promote competitiveness among the health facilities. Based on the literature of competitiveness, there exists a powerful connection between the interests of individual and collective efforts to uplift the institutional standards because of monetary incentives attached to it. However, the levels of motivation differ across groups and sometimes other factors may work in addition to monetary incentives. Delay in disbursement of the cash award may disincentivize in appropriating the benefits at the needed time. Felicitation and national level recognition as well as supervision from upper authorities may drive the facilities to effectively secure the targeted criteria to bag the award. As we know that the Kayakalp programme has created competitive environment between the various healthcare facilities, thus in turn can lead to potential avenues for unfairness due to increased competition. Putting this backdrop into context, the study will attempt to assess the influence of monetary benefits and fairness of selection process which in turn will add a new dimension of evaluating the existing program.

Methodology

The study is based on primary and secondary data collected from 3 tiers of health facilities, i.e., District hospital, CHC & PHC in 5 districts (Ghaziabad, Kaushambi, Pratapgarh, Sultanpur & Ayodhya) of Uttar Pradesh, India. The sampling method employed towards the said study is purposive random sampling. One healthcare facility at each health tier who was Kayakalp awardees in the year 2018-19 has been included in the study. Thus, key information was collected from a total of 15 facilities in Uttar Pradesh and data collected thereby has been analyzed to study the programme impact.

Structured checklists were used for assessing the implementation adherence in healthcare facilities. Personal interviews were conducted with Medical officer/ Facility In-charge, Quality Assurance Nodal Officers as well as the other associated staff. Direct observations were also recorded to identify the path through which Kayakalp has had an impact on public healthcare systems. Descriptive as well as statistical tools have been used to cater the need of the objectives. Paired t-test and average statistics measure has been used to calculate the test statistics using the Likert scale.

$$T = \frac{\sum d}{\sqrt{\frac{n(\sum d^2) - (\sum d)^2}{n-1}}}$$

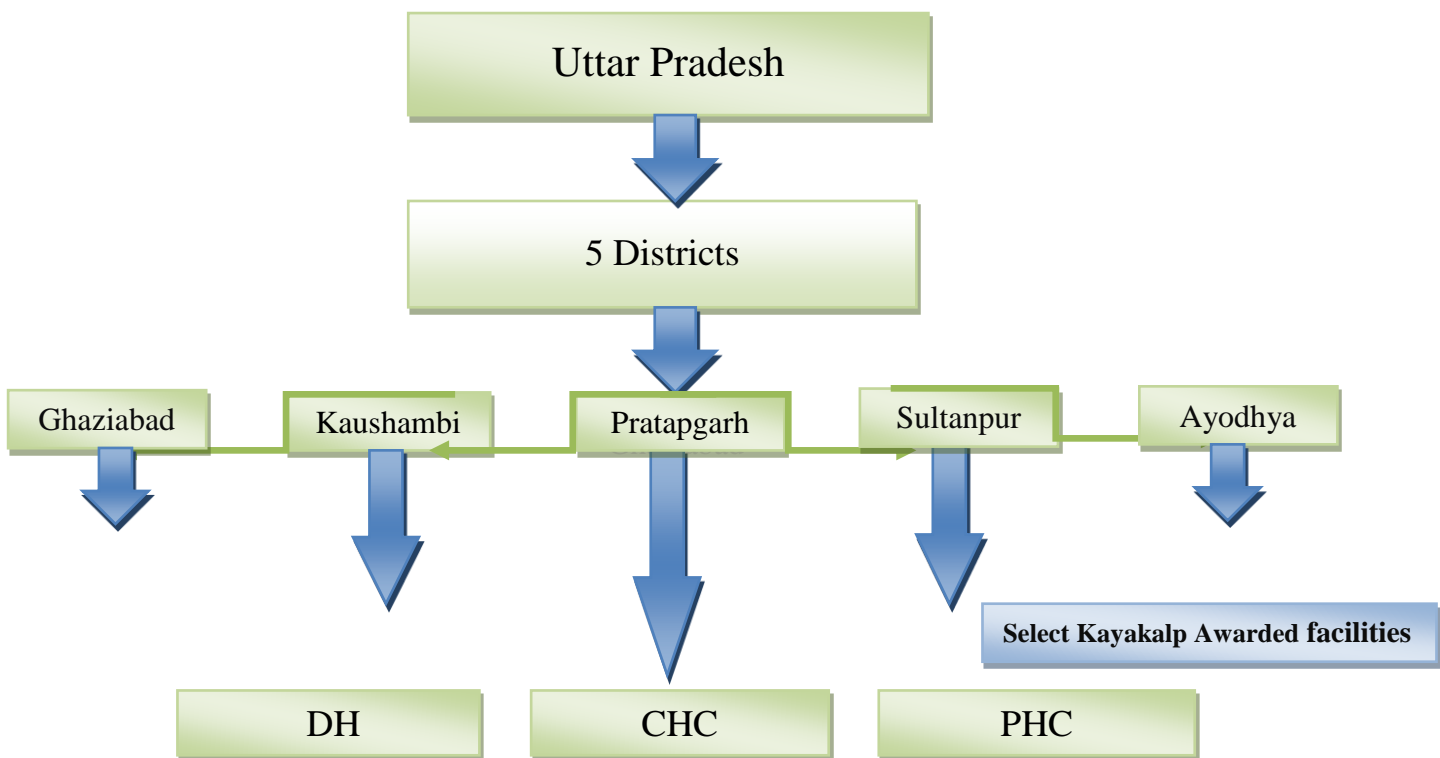
Where d = difference per paired value

n = number of samples

Impact assessment was measured by the five-point Likert scale (determined by the means score for items in the scale). Scoring range was 1–5 with a higher score corresponding to maximum ranking/rating. Furthermore, for assessing staff motivational factor in Kayakalp protocols/standards implementation, four-point Likert scale has been used i.e. strongly disagree, disagree, agree and strongly agree.

Stepwise procedure of selection of sample for the study has been described below:

Sample Design of the Study



Impact assessment of quality of care: Pre & post Kayakalp implementation

Kayakalp programme has a significantly positive impact on public health sector as observed in the selected health facilities. Facilities are taking an initiative towards clean healthcare

provisioning. Better awareness scope for quality and good practices in a hospital/ facility environment has evolved. A series of training i.e. Hand washing, BMW segregation, Infection control practices, use of ETP in lab, proper implementation of 5's done & use of PPE made the staff more conscious about the cleanliness because of which healthcare facilities has indeed reached a higher standard of cleanliness. With the increase in cleanliness level, confidence of the beneficiaries & community has increased in public healthcare facilities as well.

Facility performance: Baseline assessment and year of award

The following table depicts comparison of external assessment score (at the time of the awarded) with baseline assessment score in all the visited healthcare facilities. Results from the table are as follows:

Table 3: Comparison the external assessment score with baseline assessment score

BASELINE VS AWARD (%)					
Name of the facility/district	Year of baseline assessment	Baseline Kayakalp score (%)	Year of Kayakalp award	Kayakalp score in the year awarded (external)	% Change
District Hospital Level					
Ghaziabad (DWH)	2017-18	71	2018-19	81.8	10.8
Kaushambi (DCM)	2017-18	41.4	2018-19	77.2	35.8
Pratapgarh (DWH)	2017-18	73.2*	2018-19	72.2	-
Sultanpur (DWH)	2016-17	27	2018-19	74.2	47.2
Ayodhya (DWH)	2017-18	68.2	2018-19	80.4	12.2
CHC Level					
Dasna, Ghaziabad	2017-18	68	2018-19	88.8	20.8
Kada, Kaushambi	2016-17	69	2018-19	73.3	4.3
Kunda, Pratapgarh	2017-18	76*	2018-19	75.7	-
Dubeypur, Sultanpur	2016-17	25	2018-19	76.5	51.5
Poora Bazar, Ayodhya	2017-18	73.8	2018-19	72	-1.8
PHC Level					
Newari, Ghaziabad	2017-18	34	2018-19	78.6	44.6
Newada, Kaushambi	2017-18	70	2018-19	84.4	14.4
Sukhpal nagar, Pratapgarh	2017-18	54.7	2018-19	72.5	17.8
Haliyapur, Sultanpur	2016-17	22	2018-19	71.9	49.9
Patranga, Ayodhya	2018-19	71.1	2018-19	71.1	-

*Peer assessment score: Qualify internal assessment & peer assessment but not qualify external assessment

There have been significant differences observed in base line score level and final assessment score at the time of awarding except Poora bazar, CHC. The maximum positive difference or change has been observed in CHC Dubeypur (Sultanpur) while the minimum positive difference was observed in CHC Kada, Kaushambi. In Sultanpur district, baseline score of

facilities (DH, CHC & PHC) were quite low due to poor record maintenance, lack of cleanliness, no proper mechanism of disposal of BMW & no infection control committee. Post kayakalp implementation, in a short span of time Sultanpur healthcare facility has seen drastic changes in hospital/ facility upkeep and cleanliness. A committee had been constituted for periodic monitoring of the cleanliness activities. Furthermore, to improve the performance in the healthcare facilities, facility team started to work on fulfilling the gap.

The contrary result was observed in case of CHC, Poora Bazar, Ayodhya. The total score obtained in 2017-18 was 73.8% and for the year 2018-19 it was 72%. Thus, there has been decline in total percent score due to poor record maintenance in OT & lack of colored bags for BMW. It was reported that the facility didn't receive red and yellow bags; they have only blue bag. Another reason cited was non availability of Surgeon which posed difficulty in maintaining the record of OT procedure. Complaints for the same have been lodged several times, but the issue has not been yet resolved.

Facility team is more liberal/ lenient while carrying out the internal assessment process at its own facility. On the other hand, external assessment refers to the evaluation of performance by outside team from the state. The team of external assessor has a better training as well as quite rich experience in the field of assessment, and they also have knowledgeable standards of the other healthcare facilities i.e. what standards exists in other healthcare facilities by which they can easily identify differences.

Apart from these, two other facilities show a somewhat different picture due to incomplete assessment between different periods. Pratapgarh District Women Hospital despite having scored more than 70 points in the peer assessment couldn't qualify the said score in the external state committee board in the year 2017-18. While in the following year 2018-19 the hospital has been able to achieve the requisite score to bag the Kayakalp award (72.2% score). In the same way, CHC Kunda in Pratapgarh district also lagged in external assessment score in 2017-18 although had well above score in the peer assessment. In 2017-18, the facility scored 76% in the peer assessment while in 2018-19 it had surpassed the score in external monitoring (75.7%) which enabled it to achieve the award during the said period.

Overall, there are variations across the different facilities but Ayodhya stands undisputedly different from the other districts due to its consistent performance in cleanliness, hygiene, waste management, infection control and facility upkeep. In case of Ghaziabad the upper tier of healthcare had shown good and consistent performance compared to the lower healthcare tier. For example, district hospital of Ghaziabad was both times Kayakalp awardees and CHC

Dasna have shown remarkable improvement in kayakalp score particularly attributed to patient centric services i.e. call bell alert system for the solution of long queue and day to day changing of bed sheet of varied colors in accordance to the protocols. Efficient monitoring of this procedure has been possible as the facility has also displayed a board showing the bed sheet management in the ward.

Intra-district variation in public healthcare facilities with regards to their performance due to effective leadership or supervision, competitive culture between the healthcare facilities, staff motivation, infrastructure of the facilities (old building or new), OPD load, time constraints and work preferences. Effective leadership or supervision has played a significant role in better functioning and as well as improving the performance of the facility within the district coupled with competition spirit. Timing factor, OPD load, number of official staff is also contributing for the same. For example, CHC Dasna performance is exceptionally well as compared to DH and PHC level, reason being, DH has very high OPD load as compared to CHC which puts DH at a limiting side. Between CHC & PHC, CHC has more official staff so they can lead better and perform better as compare to PHC. Moreover, infrastructure is very important when we see the performance of the facility in cleanliness standard. In old building it's very hard to maintain sanitation standard as compare to new healthcare premises.

Perception based: Pre and Post assessment

Since the main aim of the study was to capture the performance standards of different healthcare facilities with respect to the guidelines/ protocol of the flagship programme of the Ministry of Health i.e. Kayakalp, this section will attempt to discuss in detail the cumulative quality standards along with the temporal comparison of pre and post Kayakalp implementation. In order to suit this purpose, primary data has been collected for each of the subcategories using Likert of one to five rating scale. Each of the categories i.e. Facility Upkeep, Sanitation & Hygiene, Infection Control, Support Services, Hygiene Promotion and Beyond Hospital Boundary are further sub divided into several themes/components. For instance, category Facility Upkeep has 10 sub themes, such as Pest/Animal Control, Landscaping/ Gardening Maintenance of Open Areas, Facility Appearance, Infrastructure Maintenance, Illumination, Maintenance of Furniture/ Fixture, Removal of Junk Material, Water Conservation and Work Place Management. In this way there are also numerous subthemes for the other main categories (see annexure). There are in total 43 sub themes against the six main categories. All these sub themes which are classified under one to five

ordinal Likert scale have been condensed to a common index using average measure and then they have been cross tabulated for pre and post kayakalp implementation periods.

Table 4 depicts the frequency of occurrence of the facilities with respect to indexed value of Likert score. These indexed scores are grouped into different ranges from one to five (1-1.9, 2-2.9, 3-3.9, 4-4.9 & above). It can be found that there are significant shifts from pre to post Kayakalp implementation. As can be seen from the table the maximum number of facilities have an average performance score above 4 after the kayakalp implementation in comparison to its pre implementation. Very few facilities have similar score during both the periods. For instance, Poora Bazar CHC in Ayodhya District have somewhat matched the score pattern with respect to facility upkeep indicator before and after the launch of the program. The same facility has also shown the same pattern with respect to hygiene and sanitation measure. Hence it can be said that CHC Poora Bazar is one of the few facilities of the surveyed districts which have been performing well even before the Kayakalp programme implementation. While in case of infection control this facility have not shown a good track record, instead PHC Patranga (Ayodhya) have shown impressive standard even prior to Kayakalp implementation. But the overwhelming superiority of the facilities in terms of Kayakalp quality standards cannot be denied after the launch of the programme. Even in terms of hygiene promotion and Hospital boundary the PHCs & CHCs have shown better performance prior to the said programme.

Table 4: Theme wise Average/Mean Score of facilities: Pre and post Kayakalp Phase

Facility Upkeep		Pre Kayakalp			
		1-1.9	2-2.9	3-3.9	4 & above
Post Kayakalp	1-1.9				
	2-2.9				
	3-3.9	2	1		
	4 above	7	4	1	

Sanitation & hygiene		Pre Kayakalp			
		1-1.9	2-2.9	3-3.9	4 & above
Post Kayakalp	1-1.9				
	2-2.9				
	3-3.9	3	1		
	4 & above	3	7	1	

Infection control		Pre Kayakalp			
		1-1.9	2-2.9	3-3.9	4 & above
Post Kayakalp	1-1.9				
	2-2.9				

	3-3.9	3			
	4 & above	5	6	1	

Support services		Pre Kayakalp			
		1-1.9	2-2.9	3-3.9	4 & above
Post Kayakalp	1-1.9				
	2-2.9				
	3-3.9	6	2		
	4 & above	1	3	3	

Hygiene promotion		Pre Kayakalp			
		1-1.9	2-2.9	3-3.9	4 & above
Post Kayakalp	1-1.9				
	2-2.9				
	3-3.9	2	2		
	4 & above	1	8	2	

Beyond hospital boundary		Pre Kayakalp			
		1-1.9	2-2.9	3-3.9	4 & above
Post Kayakalp	1-1.9				
	2-2.9				
	3-3.9	2	4		
	4 & above	3	3	3	

Note: Values represent frequency of occurrence based on Kayakalp Likert score.

In sum the facilities that have shown good performance even before the kayakalp implementation belongs to the district of Ghaziabad and Ayodhya.

Now looking into the positive shifts of the facilities, with respect to facility upkeep, the district hospital have fared quite well. Over here the PHCs are not so much represented. Only two CHCs are there in this category which is Kada CHC in Kaushambi District and Dubapur CHC in Sultanpur District. Ayodhya district hospital has done particularly better than any other district hospitals covered in our study. It has shown marked positive changes in sanitation and infection control. Under sanitation and hygiene the district hospital and the CHC have performed quite well post the Kayakalp implementation. Where as in infection control there are two facilities in Sultanpur, one DH & one CHC that have done better. The three other facilities that have average score point within 1 to 1.9 before kayakalp and now achieved 4 & more points after the kayakalp are two District hospitals from Ghaziabad & Ayodhya and one PHC from Pratapgarh. With respect to Hygiene promotion Sultanpur DH performing quite well post the Kayakalp implementation. Earlier the district hospital has average score point within 1 to 1.9 before kayakalp and now achieved 4 & more points.

Figure 4: Theme wise Average Kayakalp Score (Pre & Post)



Above figure depicts the temporal comparison of pre and post Kayakalp implementation with regards to Hospital Upkeep maintenance, Sanitation & Hygiene, Infection Control, Support Services, Hygiene Promotion and Beyond Hospital Boundary in all the visited healthcare facilities. Above figure clearly highlights that there are significant shifts of score from pre to

post Kayakalp implementation. Significant differences are observed in the level of hospital upkeep maintenance because of orientation training. Initiatives have been taken by the hospital/CHC/PHC for gardening, cleaning of open areas of the hospital, facility for water conservation and maintenance of furniture etc. Improvement in sanitation & hygiene parameters due to proper cleaning and maintenance of the facility, wards, patient circulation areas, ambulatory areas like OPD, laboratory, procedure areas as well as standard cleaning procedure was followed. A committee had been constituted in the hospital for periodic monitoring of the cleanliness activities. However, in some facilities i.e. CHC Dasna and PHC Haliyapur, the toilet and washroom was found to be in highly unsanitary condition.

Differential implementation of the program benefits led to some facilities outsmart in certain standards of cleanliness compared to other facilities which lagged behind. Although staff crunch was noticeable in almost all the facilities, the underlying differences was mostly due to overcrowding of patients especially in the OPDs for which the number of cubicles is not sufficiently constructed. In some facilities there are reported shortages of ‘Safaikaramcharis’ to undertake the cleanliness process. PHC Haliyapur in Sultanpur district has shown lower standards of cleanliness, the main reason being the untimely and lower allocation of funds from the higher authorities. In CHC Dasna, waste napkins disposal was not effectively done attributed to lack of co-ordination among the different cleanliness committees. Given the multitude of programs already existing under NHM, implementation of Kayakalp program was expressed as a hindrance by the over-worked health staffs who are burdened with the reporting work of existing programs.

Table 5: Area of significant change during pre and post Kayakalp implementation

Kayakalp Thematic areas wise						
Name of the facility/district	Facility upkeep	Sanitation & hygiene	Infection control	Support services	Hygiene promotion	Beyond hospital boundary
Overall						
Study Area	2.25	2.09	2.49	1.65	2.03	1.87
District level						
Ghaziabad	2.57	2.23	2.83	2.00	2.07	1.78
Kaushambi	2.47	2.30	2.17	1.80	2.13	2.44
Pratapgarh	2.05	2.00	2.20	1.47	1.67	1.67
Sultanpur	2.33	2.23	3.10	1.67	2.53	2.11
Ayodhya	1.93	1.80	2.13	1.33	1.73	1.33
Facility level						
DH	2.34	2.20	2.78	2.24	2.56	1.93
CHC	2.30	2.24	2.72	1.44	1.96	1.93

PHC	2.18	1.98	2.28	1.40	1.70	1.92
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The above table depicts the average improvement in performance under the six thematic areas. The values represent the difference in average kayakalp score in pre and implementation period. Overall, major improvements has been observed in area of Infection Control (mean score increased by 2.49 points), Facility Upkeep (increased by 2.25), Sanitation and Hygiene (increased by 2.09) and Hygiene Promotion (increased by 2.03) after the implementation of Kayakalp. The maximum improvement has been observed in area of infection control with the mean difference of 2.49, while minimum is found in the area of Support services (1.65). As we know support services includes Laundry Services & Linen management, Water Sanitation, Kitchen Services (dress code in kitchen), Security Services & Outsourced Service Management. Least increment is observed in this category due to lack of consistent security services & outsourced service management. As per the state guidelines, there is no provision of security guard in the facilities. So, the facilities depend on the district administration for providing the same. For outsourced service management all the facilities more or less depend on external agencies with little reforms due to erratic service provision. Another reason for below performance of support services was that the staff rarely used cap & kitchen aprons while cooking.

Ghaziabad district has shown maximum achievement among all the districts in facility upkeep depicting a change of 2.57 points whereas a minimum change has been observed for Ayodhya (1.93). In area of sanitation & hygiene maximum change is observed in Kaushambi (i.e. 2.30 points). Even in terms of beyond hospital boundary, Kaushambi again have shown the lead improvement (2.44). In the area of infection control & hygiene promotion the maximum mean score observed in Sultanpur (increased by 3.10 & 2.53 respectively). In support services, the Ghaziabad is performing good and its mean score difference has increased by 2 points.

At facility level, with regards to thematic area, good performance was observed at the upper tier system of the healthcare i.e. DH as compare to the lower tier system. CHCs occupy an intermediary position while the lowest change can be seen in case of PHC. The impact of the program was more in higher facilities like the DH compared to facilities such as PHCs because of designated post at the DH level of the Hospital Quality Manager to maintain and ensure the quality standards. While at PHC level, there is no particular post assigned for the same. When need arises, the District Quality Consultant visits at PHC level. This has possibly

created a performance gap that could be averted by ensuring quality managing staffs at block levels.

As can be seen from the above table, PHCs have registered the changes of 2.18, 1.98, 2.28, 1.40, 1.70 & 1.92 in mean score difference after the implementation of programme in the area of facility upkeep, sanitation & hygiene, infection control, support services, hygiene promotion and beyond hospital boundary respectively.

Table 6: Paired T-Test of Average Kayakalp Score of Pre and Post implementation period

Facility Upkeep		Sanitation & Hygiene		Infection control	
Pre	Post	Pre	Post	Pre	Post
1.93	4.18	2.16	4.26	1.91	4.41
Support Services		Hygiene Promotion		Beyond Hospital Boundary	
Pre	Post	Pre	Post	Pre	Post
2.19	3.84	2.27	4.29	2.02	3.89
All values are statistically significant at 1% level					

A paired t-test for two-sampled means has been used to differentiate between the Kayakalp assessment score of pre and post implementation period. From Table 6 it is found that the average Kayakalp score in pre implementation period is significantly different from the mean of the post implementation period. The maximum shift has been noticed for Infection Control because in this category, the facilities have registered the maximum positive improvement and in the post-implementation period it also stands with the highest average score among all the categories. After infection control, the facilities have performed well in Hygiene Promotion followed by Sanitation & Hygiene. The table reveals that the average scores to be different from pre and post period thereby indicating major shifts in values between both the periods. The shift has been seen in positive improvements in Kayakalp score.

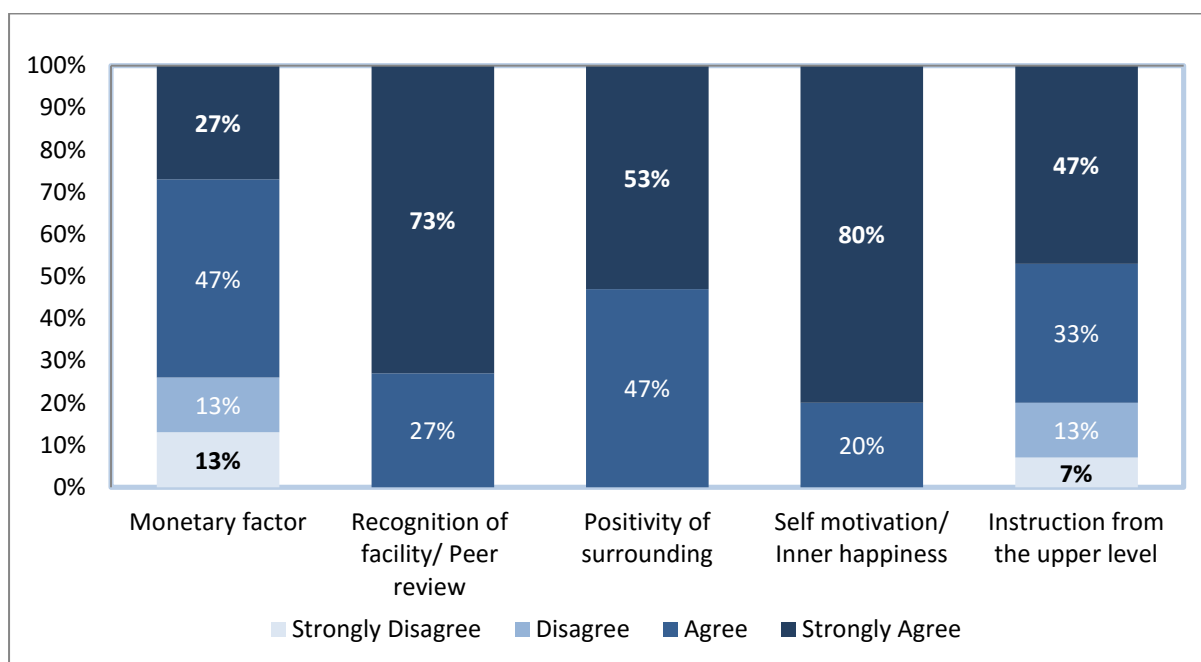
Assessing implementation differential in Kayakalp protocols/standards /guidelines

Staff factors

Motivation is the most important factor which affects the level of performance of the staff. For instance, motivated people can put full effort in work, while people who lack motivation don't find the work interesting and they don't work with full energy which causes problem to reach the set target.

The factors of motivation can be different from individual to individual as it is related to human behavior. Some people can be motivated by increasing monetary amount, Appreciation/ recognition/ peer review and some others by inner happiness, upper level instruction. Thus in turn, is very important for any government to find the appropriate factors of motivation in proper programme implementation. It is difficult to understand the motivational factor of each individual through the sample group, but it gives the general idea. Figure 1 sheds some light on the motivating factor of health care staff for accomplishing the objective of a clean and hygienic facility.

Figure 5: Staff motivational factors in implementation of Kayakalp standards



Self satisfaction and recognition of the facility play an important role in motivation of healthcare staff for accomplishing the objective of a clean and hygienic facility. Moreover, recognition is much more important than the monetary factor as it builds good image of the facility and the programme co-coordinator. It is directly related to their level of motivation; therefore it establishes a system of healthy competition between different healthcare facilities. However, it has been observed that, at PHC level monetary factor fail to motivate the staff to maintain the cleanliness standard as they hardly receive the expected amount. Besides monetary factor few facilities have shown discord with respect to instruction from the upper level and rather stated inner satisfaction to be the decisive factor to instill motivation for the staffs.

It was also observed that since the advent of Swachh Bharat Abhiyan there has been significant motivational upliftment of the staff regarding the maintenance & cleanliness of the

facility. It was suggested that innovative methods should be used for rewarding/ recognizing the departments and staff. Incentivizing the direct contact workers i.e. Sweeper/ Upkeep staff by regular monitoring and appreciation can go a long way in boosting the facility performance with regards to Kayakalp’s quality standard.

Monetary factor

Monetary incentives can be considered as one of the prime determinants to encourage the staff worker for the betterment of healthcare facilities. This we have checked through our questionnaire in detail for all the different tiers of the health care facilities. The following chart represents the influence of monetary factor upon staff motivation to adhere to the standards of Kayakalp quality protocol.

Figure 6: Percentages of Facilities Reporting Agreement/Disagreement to the Influence of Monetary Factors

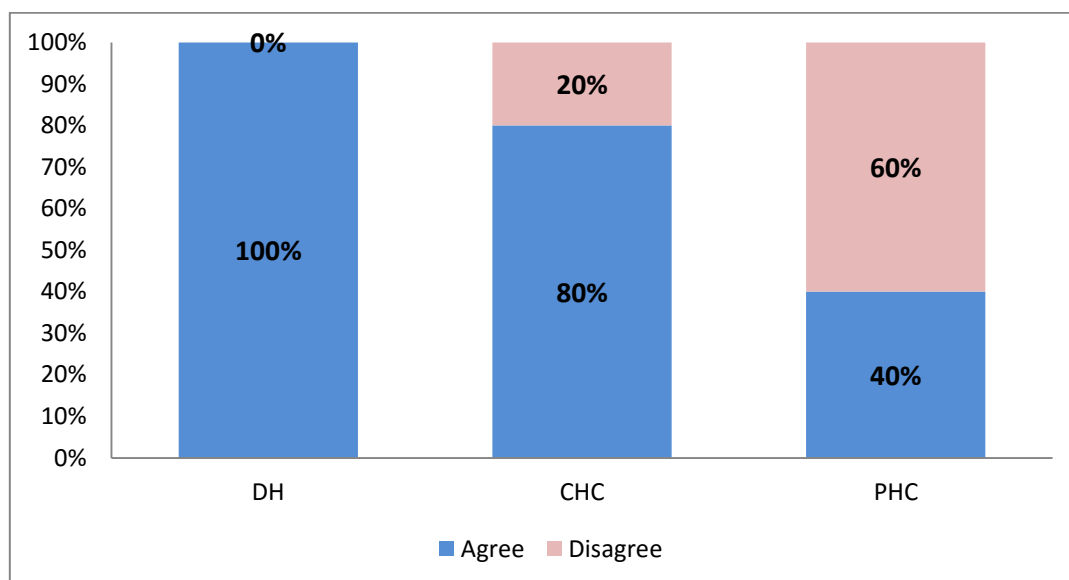


Figure 2 depicts the Percentages of Facilities Reporting Agreement/Disagreement to the Influence of Monetary Factors. At DH level, monetary factor play an important role in motivation of healthcare staff for accomplishing the objective of a clean and hygienic facility. Improper disbursement of Kayakalp funds among the staff members leads to demotivate the staff at the CHC level. For instance, 20 % of the CHC did not agree regarding the influence of the monetary factor where as 80 per cent considered it to be vital.

On the contrary, at the PHC level monetary factor fail to motivate the staff to maintain the cleanliness standard as they hardly receive the expected amount. It was observed that 60 % of the PHC did not agree regarding the influence of the monetary factor where as 40 per cent considered it to be vital. It was reported that there is no efficient channel for the smooth flow

of funds in the hands of PHC. At PHC level, in majority of the cases, the decision of utilization of PHC's untied fund was taken by the CHC level MOIC itself rather than the MOIC of the concerned PHC. They were unable to spend the money due to non-co-operation of CHC level MOIC regarding where and how to utilize the fund. Hence, MOIC or staffs were not involved in decision-making process of their PHC. They were totally unaware regarding availability of untied fund and expenditures incurred for their own PHC. Thus, this leads to demotivate staff workers for the betterment of the PHC.

Selection factors

Table 7: Fairness Status regarding Kayakalp award selection

Kayakalp Fair Vs unfair	Number (%)
Kayakalp award selection fair (N=15)	
Yes	14 (93.33)
No	0 (0)
Can't say	1 (6.67)
Political factors work in award selection (N=15)	
Yes	0
No	15 (100)

Table number 5 clearly depicts that award selection in the Kayakalp programme is more or less fair & there is no political factor working towards Kayakalp award selection. Out of the total visited healthcare facilities only one was unsure regarding the key fairness factor for Kayakalp award selection. It was suggested that the whole assessment process should be made online/digital so that accountability and fairness are maintained.

Innovative and good practices adopted by the health care facilities

District Hospital:

- *Linen Management of Kaushambi DH:* While converting the old bed sheet into new bed sheet, consent was taken from the patients through a properly maintained register which not only contained the receiving of the patients but also regular record of Linen Management was also in place. Furthermore as a good practices, the staff of the respective department were also engaged in monitoring the cleanliness and thereafter sharing the picture through social media, for instance in this hospital the departmental staffs clicked picture during the cleaning process and share it with the common group.
- *Innovative Water treatment plant of Ghaziabad DH:* In this facility the staff members designed its own water treatment plant in order to facilitate effective drainage as well as water harvesting system. To prevent blockage of the solid residue from the waste water, finer iron mesh has been fitted for the purpose which can be removable and cleaned when and where necessary. In addition, as a preventive measure of water coming out from back pipe of ACs, PVC pipe fittings have been done so that the outgoing water directly gets inside the drainage system.

Community Health Centre:

- *Local Body engagement in Kada CHC, Kaushambi:* For the improvement of the outer boundary of the facility, the CHC took self initiative by collaborating with the members of the Panchayati Committee.
- *Recycling of waste products in CHC Kunda, Pratapgarh:* In order to efficiently utilize waste management this facility converted waste water tanks into planters.
- *Managing unusable things in Dubeypur CHC, Sultanpur:* This facility converted old wooden doors to make basal rack as a cost effective measure in place of buying new furniture. Besides this facility has an extensive garden of flowering and medicinal value plants. This helped to imbibe among patients a good satisfaction level.
- *Innovative patient centric services at Dasna CHC, Ghaziabad:* This facility has patient centric services i.e. call bell alert system for the solution of long queue. Furthermore, this facility also maintains changing of bed sheet of varied colors day to day in accordance to the standard procedure which helps in boosting the psychological health of the patients, thereby ensuring their speedy recovery.



Figure 7: Best out of waste: Transforming waste water tanks into planters (CHC, Kunda)



Figure 8: CHC Kunda, Harbal Garden



Figure 9: Cleanliness monitoring by the staff of respective departments through WhatsApp group (DH, Kaushambi)



Figure 10: Linen management: Consent receiving from the patients during bed sheet changing (DH, Kaushambi)



Figure 11: Call Bell System for the Patients, CHC Dasna



Figure 12: Local Body engagement in Kada CHC, Kaushambi

Primary Health Centre:

- *Eco friendly utilization of natural resources in PHC Patranga, Ayodhya:* This facility is unique for its extensive greenery throughout the entire facility. It was also observed that, employees are fully utilizing natural resources such as land in an efficient eco-friendly manner, for instance there was 80 per cent utilization of open space into

plantation of various kinds (medicinal & flowering plants) including well developed kitchen garden.



Figure 13: Eco friendly utilization of natural resources in PHC Patranga, Ayodhya

Achievements of Kayakalp Programme

- ✓ Hospitals/CHCs/PHCs have attained a higher standard of cleanliness as well as services after Kayakalp implementation. With the launch of the programme most of the facilities were found to be using three bucket system (unidirectional floor mopping) for cleanliness. Regular & appropriate training for cleaning and mopping have led to more awareness & knowledge generation among the staff members thereby ensuring a clean environment.
- ✓ Heightened improvement in Infection Control in forms of Hand Hygiene, PPE, Spill management, Implementaion of SoP, Infection control audit, SWAB Culture (Survielcance), BMW Shed, proper disposal of waste, 100% bacteria free ETO Sterlization installation (Ayodhya DH) were achieved due to kayakalp implementation. Besides, regular monitoring of the above mechanisms has further escalated infection control and hygiene promotion in the facility.
- ✓ Hospital staffs form the backbone for proper implementation of any programme. In this connection training of the staff members is crucial for swift delivery of services. The

kayakalp programme has served as a boon for essential training particularly with respect to cleanliness, Infection control, waste management and hygiene promotion. Reorientation of staff has led to better understanding of newer practices. Staffs are better equipped with knowledge of proper hand washing, BMW segregation, use of PPE, use of ETP in lab, spill management and implementation of 5S. Dress code, use of ID card and co-operation among staff members were observed as additional good practices due to the said programme.

- ✓ Earlier there was very less awareness regarding waste segregation especially at the lower tier healthcare facilities. All the wastes were clubbed into one bin with little provision for management of bio degradable products. Following the programme implementation waste management have improved tremendously, for instance all the Kayakalp awarded facilities have now color coded (suited for different categories of wastes) bins in multiple locations.
- ✓ The kayakalp programme has helped to meet the minimum quality standard with further up gradation of services in short span of time.
- ✓ Good practices were seen due to Kayakalp such as linen management, innovative Water treatment plant, Local Body engagement, Recycling of waste products, Managing unusable things, Innovative patient centric services, Makeshift fencing using inexpensive products and Eco friendly utilization of natural resources.
- ✓ Documentation & record maintenance have improved considerably following the launch of the programme. Registers of the different departments are properly maintained and screened by the respective personnel on a daily basis.
- ✓ Hospital/CHC/PHC environment becomes more patient-friendly due to directional signage. Following the programme implementation, directional signage in the public healthcare facility has remarkably improved consequently improving the health outcomes of the patients and overall service quality. For instance directional signages help users to make sense of where they are and how to get to the place they are looking. Therefore, improved hospital design can reduce stress of both patients & staff, increase efficacy of care & improve patient convenience.
- ✓ Adequate IEC posters were exhibited at appropriate locations in the healthcare facilities. Besides IEC materials of the health programme, enough material were also observed such as that of water conservation, Beti Bachao Beti Padhao, Swatch Bharat Abhiyaan, Infection control protocol and bio medical waste management. Informative posters signaling the possibilities of health hazards and constructive habits added a good

dimension to the health facility. In Ayodhya district hospital, snake ladder poster was observed that gives a good message to the patients and easily understandable.

- ✓ Kayakalp has ensured better facilities and well being for patients.
- ✓ Herbal garden concept came with Kayakalp as observed in all the visited facilities. Patranga PHC is unique for its extensive greenery throughout the entire facility. Employees are fully utilizing natural resources such as land in an efficient eco-friendly manner, for instance there was 80 per cent utilization of open space into plantation of various kinds (medicinal & flowering plants) including well developed kitchen garden. Dubeypur CHC has an extensive garden of flowering and medicinal value plants. This helped to imbibe among patients a good satisfaction level.
- ✓ Kayakalp programme has led to cleanliness as well as safety i.e. animal control & dark/abandoned building modification into good building. Ayodhya DH has established a fire prevention system and all staff of the hospital were properly trained & aware about the safety measures.
- ✓ Due to Kayakalp, funds has started been to be allocated for better upkeep of hospitals.
- ✓ Kayakalp has generated a culture of healthy competition among the healthcare facilities like if one facility in a district bags an award, other facilities in the meanwhile starts to improve its health standards in order to reach the peak of healthcare standards in a way to accomplish the said award.

Backlogs of Kayakalp Programme

- ✓ The Kayakalp program has not been able to bring long-lasting impression upon the facilities in terms of accepted quality standards. Just before the monitoring visit, the facility takes initiative in improving the standards, but after the visiting period is over, it switches back to its past conditions, with only minor improvements staying along. This process has been evaluated by the study team by conducting interviews with quality manager and officials-in-charge of the facilities who clearly stated this concern. Kayakalp guidelines for ensuring proper workplace management is undertaken on a predefined schedule or through otherwise surprise monitoring and evaluation visits by the State team for continuous review at the state level. It was observed that visit information was conveyed beforehand allowing quick and nifty ways to accommodate necessary changes for fulfilling the selection criteria. Thus, one way to capacitate permanent changes is to have more surprise visits possibly with different evaluation officers with each visit. The visits could check not only the physical state of affairs, but also evaluate the capacity and

adequacy of training of health staffs that according to guidelines should be done intensively and on a continuous basis.

- ✓ Surprisingly some facilities which were Kayakalp awardees were lurking behind in terms of basic hygiene sense. Needless to say, that availability of proper waste disposal bins in toilets is an essential criterion of award selection. Despite some of the awarded facilities existed had extremely unsanitary toilet conditions. CHC Dasna lacked proper dustbin for sanitary pad disposal; instead it was using a makeshift paper bucket. Poora Bazaar CHC did not have any dustbins inside the common toilet for females.
- ✓ Kayakalp checklists needs to be adapted in response to functional constraints faced by the facilities. Necessary weightages need to be given to OPD load, as it is directly related to cleanliness level. OPD load needs to be incorporated as a separate checklist category. Secondly, if facility has intensive OPD (i.e. 800 -1000 per day) then adequate space should be made available for parking of vehicles. So, parking norms should be revised as per OPD load. Lastly, newly constructed buildings having plastered & painted walls should be exempted from the concerned theme of 'infrastructure maintenance' otherwise it loses points because there are no norms to renovate buildings that are newly constructed.
- ✓ Untimely receiving of funds and lack of equity in allocation of funds to different health personnel takes a dig at the confidence level of the staffs thereby demotivating them to work collectively for the betterment of the health care facility.
- ✓ Lack of quality manager at different levels creates hindrances to maintain the quality standard of the health services. This is true for all the facilities except the District Hospital which has dedicated quality assurance staffs.
- ✓ Lack of autonomy in the hands of the PHCs to utilise its funds creates problems for the up gradation of health services and have to remain at the mercy of the CHC when they will feel the need to allocate the funds.
- ✓ Kayakalp checklists needs to be adapted in response to functional constraints faced by the facilities. Necessary weightages need to be given to OPD load, as it is directly related to cleanliness level. OPD load needs to be incorporated as a separate checklist category. Secondly, if facility has intensive OPD (i.e. 800 -1000 per day) then adequate space should be made available for parking of vehicles. So, parking norms should be revised as per OPD load. Lastly, newly constructed buildings having plastered & painted walls should be exempted from the concerned theme of 'infrastructure maintenance' otherwise it loses points because there are no norms to renovate buildings that are newly constructed.

- ✓ Aesthetic environment of the hospitalsuffered due to over-crowding of visitorswith their belongings and consumables strewn here and there. In the absence of ‘rain baseras’ the outdoor premises were nested by the visitors as night shelters. For instance, the ramps were lined with washed wet clothes of the patient’s family enough to make the surface slippery and inconvenient for hospital staffs.

Conclusion

The study was taken up with the aim to evaluate the impact of Kayakalp on cleanliness, sanitation, hygiene and infection control practices in public health care facilities. The prime objective of the study was to understand the staff motivation for Kayakalp in planning and implementation. It further attempted to diagnose whether monetary factor serves as a major motivation for health care staff to maintain cleanliness, or whether there are other factors which drive them towards Kayakalp Award Scheme. It also attempted to know about the innovative and good practices adopted by the health care facilities in compliant with the Kayakalp programme. Lastly, it tried to enquire how fair are these Kayakalp award selection process.

At the time of visitation among all the districts, Ayodhya has done significantly better than any other districts. There are some districts which have shown good performance before and after the Kayakalp implementation. The districts that come under this category are the districts of Ghaziabad (except its PHC) and Ayodhya. In case of Ayodhya district the dedication of the staffs were quite high from quite some time in the past. Different officials like CMO, Addl. CMO, DPM, & DCPM visited the facilities at regular intervals. Quality aspect was looked into before even before the Kayakalp implementation.

The performance of Sultanpur was the poorest before the Kayakalp implementation and now it stands equivalent to the other districts. After the programme implementation Sultanpur district had clear direction and guidelines for betterment of the facilities with regards to cleanliness standard with person designated to improving the sanitation standard. Because of clear guidelines/ direction, effective leadership, increased staff motivation, and numerous orientation-training programme it helped enormously contributing towards positive changes in Sultanpur district. All these have been instituted after the program implementation. Among all the facilities, the highest final score of the Kayakalp program was noted for CHC, Dasna in 2018-19 even exceeding the score level of all the visited District Hospital. Based on staff’s perception regarding the condition of facilities pre and post Kayakalp implementation, it

could be noted that in facility upkeep generally the district hospitals have fared quite well. Even in sanitation & hygiene again the district hospitals have fared well. The CHCs have also performed quite well in that regard after the program implementation. PHCs have a long way to catch up the performance of the CHCs and the DH. However in infection control we can find a mixed performance. Sultanpur DH & CHC show good performance under this theme especially after the Kayakalp implementation. With regards to hygiene promotion, Sultanpur DH has performed quite well post the Kayakalp implementation.

Based on the Kayakalp final scores at the time of awarding (2018-19) in comparison to base line assessment, more or less all the facilities have shown significant positive changes. In a limited span of time all the health care facilities of Sultanpur healthcare facility has shown major positive shifts especially in hospital/facility upkeep and cleanliness. The performance of the districts before and after the Kayakalp implementation does not hold the same except for Ayodhya district that is unique from the other districts due to its consistent performance in cleanliness, hygiene, waste management, and infection control and facility upkeep. Similar consistent and good performance during both the periods can be seen in case of Ghaziabad but only limited to the upper tier of healthcare because the lower healthcare tier before the Kayakalp implementation achievement was less. Majorly the improvement in the scores in some of the facilities i.e. seen in CHC, Dasna is attributed to patient centric services.

Political motivation towards the selection of Kayakalp awardees was reported by the health officials. The Kayakalp programme is more or less fair and the influence of external political factors was lacking. Among the factors most notable that led to higher motivation among the staff members towards the working of a good health care environment was the self satisfaction and recognition of the facility. Monetary factor was not so influencing rather recognition is much more important that builds a good reputation of the facility and its staffs. It was observed that at the PHC level, monetary factor do not motivate the staff because of irregular distribution of funds. Further an efficient channel for the proper flow of funds in the hands of PHC is also lacking. The program has been blessed with the healthy competition of different health care units and institutes. Motivations of the staffs have been uplifted to keep the facility in order and clean with the concomitant launch of the Swatch Bharat Abhiyan.

With the initiation of the program, Hospitals/CHCs/PHCs have attained a higher standard of cleanliness as well as services along with heightened improvement in Infection Control and Bio medical waste management due to appropriate training and adherence to standard protocols which helped to meet the minimum quality standard with further up gradation of

services in a short span of time. Record maintenance have improved considerably besides the facilities have turned more patient-friendly due to directional signages and eco-friendly waste and land management in the form of vast greenery and setting up of herbal garden. Moreover, the program has inculcated a culture of healthy competition among the healthcare facilities. Apart from these tangible shifts, several innovative practices were seen with the coming of the program such as linen management, innovative water treatment plant, local body engagement, recycling of waste products, managing unusable things, innovative patient centric services, makeshift fencing using inexpensive products and eco friendly utilization of natural resources.

The major drawbacks of the program have been its transient influence to make any concrete changes. Lack of quality manager at different levels creates hindrances to maintain the quality standard of the health services. There was only one quality manager in the entire district. Untimely receiving of funds and lack of equitable distribution in allocation of funds to different health personnel takes a dig at the confidence level of the staffs. Lack of autonomy in the hands of the PHCs to utilize its funds creates problems for the up gradation of health services and has to remain at the mercy of the CHC. Tracking and follow up services were missing with respect to cleanliness practices and hygiene promotion.

Recommendations

The impact of the Kayakalp program was not felt at the desired levels due to institutional blockages of the program implementation. The program can be improved by incorporating certain reforms to make the facilities self-reliant by ramping up the program benefits. Following recommendations have been made:

- *Efficient management at different tiers:* Quality management is utmost important for delivering consistent quality services. It was observed that, in the entire district, there was only one quality manager only at the DH level. Absence of quality manager at all tiers creates impediment to maintain the quality standard of the health services. Therefore, it is suggested that to have at least one quality manager/ consultant at each block level or at CHC level. Such policy will help in ensuring and improving the quality of care in facilities and might affect the risk reduction processes.
- *Financial devolution:* At PHC level, monetary factor does not exclusively motivate the staff to adhere to the cleanliness protocol due to lack of autonomy of the PHCs to utilize its funds. The PHC In-charge/staff was totally unaware regarding availability

of fund and expenditures incurred for its own facility. In majority of the cases, the decision of utilization of fund was taken by the CHC's MOIC rather than the MOIC of the concerned PHC. They were unable to utilize funds effectively due to non-cooperation of CHC regarding where and how to utilize the fund. Hence, there is no efficient channel for the smooth flow of funds in the hands of PHC. Thus, there is urgent need to resolve the issue, and in the given scenario, it is recommended that Kayakalp fund should be disbursed to the PHCs directly instead of its concerned CHC. Such policy will help in up gradating of health services at a superior level.

- *Incentive to cadres:* Lack of prompt receiving of funds and lack of equity in incentives to different health personnel lowers the confidence level of the staffs which demotivate them to work collectively in a group for the betterment of the health care facility. To reconcile this issue, quick and calculated action needs to be taken without any delay as quick disbursement of fund will boost the confidence level of the staff and will motivate them to work for the betterment of the healthcare facility.
- *Improving hygiene in toilets:* Even though some facilities were Kayakalp awardees recognized for its cleanliness status, in some facilities the toilets and washroom were found to be in improper condition with extremely unsanitary condition which is supposed to be the benchmark for cleanliness. Issues with regard to toilet cleanliness must be reconciled with necessary action to ensure the healthy functioning of the healthcare facilities.
- *Resolve supply constraints:* Some facilities have registered decline in overall Kayakalp score (CHC Poora Bazar, Ayodhya) due to lack of effective supply of the colored bags. So, it is essential that the supply of the BMW bags should be efficiently monitored.
- *Greater transparency and accountability:* Greater transparency and dissemination of the program to the providers can assist to put concerted efforts on lagging domains. One way to achieving this might be through making the system fully online.
- *Checklist amendments:* Purposeful interventions should be done in Kayakalp checklist because if there are uniform guidelines certain facilities may fall back on account of intensive patient load and shortage of desired levels of physical and human infrastructure. Hence prior to assessment, ground realities should be sought rather making apriori judgements. In every facility, state and district health officials should ensure there are adequate number of cleanliness workers in each facility contingent upon patient and OPD load.

- *More effective training:* Since training is goal oriented operation, regular feedbacks of its impact can sustain long term benefits of the program. Therefore, periodic training and records of each category of training staff needs to be properly maintained with collaboration of state and district management committees regarding infection and hygiene control practices.

Way forward: The initiative which took off in 2015 was able to create visible improvements into the public health sector due to collaborative efforts deemed by all the districts. Frequent training to maintain overall hygiene have been transformed into habit helping to sustain the Kayakalp certification and bringing about improved hygiene practices into daily lives. The impact of the program has crossed beyond the four boundaries taking a message to people in maintaining a clean and healthy surrounding. Seeking views from the patients is of utmost importance since patient satisfaction is the significant test to evaluate quality of services provided by each health care facility. Patient feedback taken through ‘MeraAspataal’ app can ensure accountability at different levels. By declaring names of facilities who are consistent performers and those who are lagging behind by the state health department can help to improve performance of the lagging units. The Kayakalp which has a continuous peer review assessment can be further strengthened through collaborative and exchange platforms with tertiary health units in bid to replicate the quality standards of those health sectors.

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Appendix

Checklist for Medical Officer/ Facility In-charge

Name of DH/CHC/PHC: _____	Catchment Population: _____
Name of the respondents: _____	Designation: _____
Phone/ Mob no. : _____	Date of visit: _____
Signature of the respondents _____	

1. Since how long have you been working here at facility _____
2. How satisfied are you with the cleanliness and appearance of the facility?
 - Very satisfied
 - Satisfied
 - Neutral
 - Not satisfied
3. Do you think is there any improvement in cleanliness, sanitation, hygiene & infection control practices at facility with regard to kayakalp Implementation?
 If Yes, What? _____
 If No, What? _____
4. On the scale of 1 -5 rate the following services/ factors with respect to pre and post kayakalp implementation period.

S. No.	Particulars	Kayakalp		Additional Remarks
		Pre	Post	
FACILITY UPKEEP				
1	Pest & Animal Control	1 2 3 4 5	1 2 3 4 5	
2	Landscaping & Gardening	1 2 3 4 5	1 2 3 4 5	
3	Maintenance of Open Areas	1 2 3 4 5	1 2 3 4 5	
4	Facility Appearance	1 2 3 4 5	1 2 3 4 5	
5	Infrastructure Maintenance	1 2 3 4 5	1 2 3 4 5	

6	Illumination	1 2 3 4 5	1 2 3 4 5	
7	Maintenance of Furniture & Fixture	1 2 3 4 5	1 2 3 4 5	
8	Removal of Junk Material	1 2 3 4 5	1 2 3 4 5	
9	Water Conservation	1 2 3 4 5	1 2 3 4 5	
10	Work Place Management	1 2 3 4 5	1 2 3 4 5	
SANITATION & HYGIENE				
1	Cleanliness of Circulation Area (Corridors, Waiting area, Lobby, Stairs)	1 2 3 4 5	1 2 3 4 5	
2	Cleanliness of OPD Clinic	1 2 3 4 5	1 2 3 4 5	
3	Cleanliness of Procedure Areas (Dressing Room, Immunization & Injection & Labour Room (if available))	1 2 3 4 5	1 2 3 4 5	
4	Cleanliness of Lab and Pharmacy	1 2 3 4 5	1 2 3 4 5	
5	Cleanliness of Auxiliary Areas (Office, Meeting Room, Staff Room, Record Room)	1 2 3 4 5	1 2 3 4 5	
6	Cleanliness of Toilets	1 2 3 4 5	1 2 3 4 5	
7	Use of standards materials and Equipment for Cleaning	1 2 3 4 5	1 2 3 4 5	
8	Use of Standard Methods for Cleaning	1 2 3 4 5	1 2 3 4 5	
9	Monitoring of Cleanliness Activities	1 2 3 4 5	1 2 3 4 5	
10	Drainage and Sewage Management	1 2 3 4 5	1 2 3 4 5	
INFECTION CONTROL				
1	Hand Hygiene	1 2 3 4 5	1 2 3 4 5	
2	Personal Protective Equipment (PPE)	1 2 3 4 5	1 2 3 4 5	
3	Personal Protective Practices	1 2 3 4 5	1 2 3 4 5	
4	Decontamination and Cleaning of Instruments	1 2 3 4 5	1 2 3 4 5	
5	Disinfection & Sterilization of Instruments	1 2 3 4 5	1 2 3 4 5	
6	Spill Management	1 2 3 4 5	1 2 3 4 5	
7	Isolation and Barrier Nursing	1 2 3 4 5	1 2 3 4 5	
8	Infection Control Program	1 2 3 4 5	1 2 3 4 5	
9	Hospital Acquired Infection Surveillance	1 2 3 4 5	1 2 3 4 5	
10	Environment Control	1 2 3 4 5	1 2 3 4 5	
SUPPORT SERVICES				
1	Laundry Services & Linen Management	1 2 3 4 5	1 2 3 4 5	
2	Water Sanitation	1 2 3 4 5	1 2 3 4 5	

3	Pharmacy and Stores	1 2 3 4 5	1 2 3 4 5	
4	Security Services	1 2 3 4 5	1 2 3 4 5	
5	Outreach Services	1 2 3 4 5	1 2 3 4 5	
HYGEINE PROMOTION				
1	Community Monitoring & Patient Participation	1 2 3 4 5	1 2 3 4 5	
2	Information Education and Communication	1 2 3 4 5	1 2 3 4 5	
3	Leadership and Team work	1 2 3 4 5	1 2 3 4 5	
4	Training and Capacity Building and Standardization	1 2 3 4 5	1 2 3 4 5	
5	Staff Hygiene and Dress Code	1 2 3 4 5	1 2 3 4 5	
BEYOND HOSPITAL BOUNDARY				
1	Cleanliness of approach road and surrounding area	1 2 3 4 5	1 2 3 4 5	
2	Aesthetics and amenities of Surrounding area	1 2 3 4 5	1 2 3 4 5	
3	Maintenance of surrounding area and Waste Management	1 2 3 4 5	1 2 3 4 5	

5. Which are the following factors that motivate you to maintain high standard of cleanliness & sanitation at health facility?

S. No.	Particular	Strongly agree (1)	Agree (2)	Strongly disagree (3)	Disagree (4)
1	Monetary factor				
2	Appreciation/ Reorganization of facility/ Peer review				
3	Positivity of surrounding/ Enhancing the facility Environment				
4	Inner happiness/ Good for self health				
5	Instruction from the upper level				
6	Competition from others facilities				
7	Swatch Bharat Abhiyan				
8	If any others, please specify _____ _____				

6. What are your conceptions about the fairness of Kayakalp award selection?

7. Have you experienced any unfairness with respect to Kayakalp award selection? If yes, then how can it be overcome?

8. Do you feel any political factor work towards Kayakalp Award selection?

9. What are new practices/ good practices adopted by you related to improved cleanliness at facility to ensure Kayakalp Award?

10. What are the measures being taken or planned for Infection control, bio medical waste management at facility levels?

11. What are the other incentive that you would like in ensuring return of facility keep & maintenance?

12. How effective is the Kayakalp Programme at the facility level?

13. What can be done to improve the performance of Kayakalp programme?

14. What can be done to improve the performance of overall health facility?

District	Name of the Facility	Facility place	Facility Upkeep (Value will be from 1 to 5)																			
			Pre kayakalp implementation										Post kayakalp implementation									
			Pest & Animal Control	Landscaping & Gardening	Maintenance of Open Areas	Facility Appearance	Infrastructure Maintenance	Illumination	Maintenance of Furniture & Fixture	Removal of Junk Material	Water Conservation	Work Place Management	Pest & Animal Control	Landscaping & Gardening	Maintenance of Open Areas	Facility Appearance	Infrastructure Maintenance	Illumination	Maintenance of Furniture & Fixture	Removal of Junk Material	Water Conservation	Work Place Management
Ghaziabad	DH	Ghaziabad	1	1	2	2	1	2	1	1	2	3	5	3	4	3	3	5	4	5	5	4
	CHC	Dasna	3	2	3	3	3	3	3	3	2	3	5	5	5	5	5	5	5	5	4	5
	PHC	Niwarai	1	1	1	1	3	3	4	1	1	2	5	5	5	5	5	5	5	4	5	5
Kaushambi	DH	Kaushambi	1	1	2	2	2	2	2	2	2	1	4	4	4	4	4	4	4	4	4	4
	CHC	Kada	1	1	1	2	1	1	2	2	1	1	3	4	5	4	4	4	5	5	4	4
	PHC	Newada	1	1	2	1	2	2	4	3	3	2	4	5	4	4	4	4	5	4	5	4
Pratapgarh	DH	Pratapgarh	2	4	2	3	3	4	3	3	3	2	5	2	4	5	5	5	5	5	4	5
	CHC	Kunda	1	1	1	2	1	1	1	2	1	1	3	4	3	3	4	4	4	4	4	4
	PHC	Sukhpal Nagar	2	1	3	3	2	2	3	2	2	3	4	4	4	4	4	4	4	4	4	4
Sultanpur	DH	Sultanpur	1	1	1	2	1	3	2	1	2	1	4	2	5	4	4	5	4	4	4	5
	CHC	Dubepur	1	1	2	1	2	2	3	2	1	1	5	5	5	5	5	4	4	4	1	5
	PHC	Haliyapur	1	1	2	1	1	2	1	2	2	2	4	3	3	3	3	3	3	4	3	3
Ayodhya	DH	Ayodhya	1	1	1	2	2	2	2	2	1	2	3	3	4	5	5	5	5	5	4	4
	CHC	Poora Bazar	3	2	3	4	3	4	3	4	1	3	5	5	5	5	4	5	4	5	1	4
	PHC	Patraonga	1	2	2	3	2	1	2	2	3	3	4	4	4	4	4	4	4	3	4	4

SANITATION & HYGIENE (Value will be from 1 to 5)

Pre Kayakalp Implementation										Post Kayakalp Implementation									
Cleanliness of Circulation Area (Corridors, Waiting area, Lobby, Stairs)	Cleanliness of OPD Clinic	Cleanliness of Procedure Areas (Dressing Room, Immunization & Injection & Labour Room (if available))	Cleanliness of Lab and Pharmacy	Cleanliness of Auxiliary Area (Office, Meeting Room, Staff Room, Record Room)	Cleanliness of Toilets	Use of standards materials and Equipment for Cleaning	Use of Standard Methods for Cleaning	Monitoring of Cleanliness Activities	Drainage and Sewage Management	Cleanliness of Circulation Area (Corridors, Waiting area, Lobby, Stairs)	Cleanliness of OPD Clinic	Cleanliness of Procedure Areas (Dressing Room, Immunization & Injection & Labour Room (if available))	Cleanliness of Lab and Pharmacy	Cleanliness of Auxiliary Area (Office, Meeting Room, Staff Room, Record Room)	Cleanliness of Toilets	Use of standards materials and Equipment for Cleaning	Use of Standard Methods for Cleaning	Monitoring of Cleanliness Activities	Drainage and Sewage Management
3	2	3	3	3	2	3	3	3	3	4	5	5	5	4	4	5	5	3	5
2	2	3	2	3	3	2	3	1	2	5	5	5	5	5	5	5	5	5	5
3	2	2	3	3	3	2	3	3	3	5	5	5	5	5	5	5	5	5	5
2	2	2	3	2	1	2	1	1	2	4	4	4	4	4	4	4	4	4	4
3	2	2	2	1	1	1	2	1	1	4	5	4	4	4	4	5	5	5	4
2	2	3	2	3	3	3	2	2	2	4	5	5	4	4	4	4	5	4	4
4	3	3	3	3	3	3	3	2	2	5	5	5	4	5	4	5	4	4	4
2	2	2	2	1	1	1	1	2	1	4	4	5	4	4	3	4	4	4	3
2	2	2	2	3	2	3	2	2	2	3	4	4	4	4	4	4	4	4	4
3	3	3	3	1	2	2	2	1	2	5	5	5	5	5	5	5	5	5	4
2	2	2	2	2	2	1	1	1	2	5	4	3	3	4	2	5	4	3	4
2	2	1	2	1	1	1	1	1	1	3	4	3	4	3	3	3	3	4	3
1	1	1	1	1	1	1	1	4	2	4	4	4	5	4	4	4	4	5	4
3	4	5	3	4	4	2	2	2	1	4	5	5	5	5	5	4	4	5	1
3	2	3	3	3	3	2	3	3	2	4	4	4	4	4	4	4	4	4	4

INFECTION CONTROL (Value will be from 1 to 5)

Pre kayakalp implementation										Post kayakalp implementation										
Hand Hygiene	Personal Protective Equipment (PPE)	Personal Protective Practices	Decontamination and Cleaning of Instruments	Disinfection & Sterilization of Instruments	Spill Management	Isolation and Barrier Nursing	Infection Control Program	Hospital Acquired Infection Surveillance	Environment Control	Hand Hygiene	Personal Protective Equipment (PPE)	Personal Protective Practices	Decontamination and Cleaning of Instruments	Disinfection & Sterilization of Instruments	Spill Management	Isolation and Barrier Nursing	Infection Control Program	Hospital Acquired Infection Surveillance	Environment Control	
2	2	2	2	3	1	2	2	1	1	5	5	5	5	5	5	5	5	5	5	4
2	2	2	2	2	2	3	3	2	2	5	5	5	5	5	5	5	5	5	4	5
3	2	3	2	2	3		3	2	3	5	5	5	5	5	5	5	5	5	5	5
1	1	1	2	2	2	2	2	1	1	4	4	4	4	4	4	4	4	4	4	3
2	2	3	3	4	4	3	2	3	1	5	5	4	5	5	5	5	5	5	5	4
2	2	2	2	2	2	2	2	2	2	4	4	5	3	4	4	4	4	4	4	4
2	2	2	3	2	2	3	3	2	2	5	4	5	5	4	5	4	5	3	3	3
1	1	1	2	2	1	1	1	1	1	4	3	4	4	4	4	3	3	4	4	3
1	1	1	3	1	1	2	2	2	3	4	4	4	4	4	4	4	4	4	4	4
1	1	1	1	3	1	2	2	1	1	5	5	4	5	5	5	5	5	5	4	5
1	1	1	1	1	1	1	1	1	1	5	5	5	5	5	5	4	5	4	4	5
1	1	1	3	2	1	2	2	2	2	4	4	5	4	3	4	3	4	4	4	3
2	2	1	1	1	1	1	1	1	1	5	5	4	4	4	4	4	4	4	4	4
2	1	3	3	4	2	2	2	1	2	5	5	5	5	5	5	5	5	5	3	4
4	4	4	3	4	3	3	4	4	3	4	4	5	4	5	4	4	5	5	5	4

SUPPORT SERVICES (Value will be from 1 to 5)									
Pre Kayakalp Implementation					Post Kayakalp Implementation				
Laundry Services & Linen Management	Water Sanitation	Pharmacy and Stores	Security Services	Outreach Services	Laundry Services & Linen Management	Water Sanitation	Pharmacy and Stores	Security Services	Outreach Services
2	3	2	1	2	4	5	5	5	5
2	4	2	1	3	5	5	5	1	5
3	4	4	2	3	5	4	5	4	5
2	2	1	1	2	4	4	4	3	3
4	2	4	2	2	4	4	5	4	4
2	2	2	1	2	3	5	5	2	4
3	2	2	2	3	4	4	4	3	4
2	1	1	1	2	3	4	3	2	4
2	2	2	1	2	4	4	4	1	2
3	2	1	1	2	4	5	5	5	2
1	2	3	1	2	5	5	4	1	2
2	2	2	2	2	3	3	4	2	3
1	1	1	1	2	4	4	5	3	3
3	4	4	1	5	5	5	4	1	5
3	3	4	3	3	4	4	4	4	4

HYGEINE PROMOTION (Value will be from 1 to 5)									
Pre Kayakalp Implementation					Post Kayakalp Implementation				
Community Monitoring & Patient Participation	Information Education and Communication	Leadership and Team work	Training and Capacity Building and Standardization	Staff Hygiene and Dress Code	Community Monitoring & Patient Participation	Information Education and Communication	Leadership and Team work	Training and Capacity Building and Standardization	Staff Hygiene and Dress Code
1	2	3	1	3	3	5	4	4	3
3	3	3	3	2	5	5	5	5	5
3	3	3	2	3	5	5	5	5	5
1	1	1	1	1	4	4	4	4	3
2	3	3	2	2	4	4	5	5	4
2	3	3	2	2	4	4	4	4	4
2	3	3	3	3	3	5	5	5	5
2	3	2	2	3	3	4	5	4	4
2	2	2	2	2	3	4	4	3	4
1	1	1	1	1	4	5	5	5	4
2	2	3	1	2	4	5	5	5	4
2	2	1	2	2	3	3	3	3	4
2	2	2	2	2	5	5	5	4	5
3	4	3	3	4	4	5	5	5	5
3	3	4	3	3	5	4	4	4	4

BEYOND HOSPITAL BOUNDARY (Value will be from 1 to 5)					
Pre Kayakalp Implementation			Post Kayakalp Implementation		
Cleanliness of approach road and surrounding area	Aesthetics and amenities of Surrounding area	Maintenance of surrounding area and Waste Management	Cleanliness of approach road and surrounding area	Aesthetics and amenities of Surrounding area	Maintenance of surrounding area and Waste Management
2	1	2	3	1	5
4	3	2	5	5	5
3	3	3	5	5	5
2	2	1	4	4	4
1	1	1	4	4	4
2	2	2	4	4	4
2	2	2	4	3	4
2	2	2	3	3	4
2	2	2	4	4	4
1	1	1	4	4	4
2	1	2	4	1	5
2	2	2	4	3	4
2	2	2	3	3	4
2	3	2	4	4	4
3	3	3	4	4	4

