

Paper Submission on
5S Implementation in Government Health Centres



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Introduction of 5S

1.1 What is 5S?

A targeted list of activities that promotes organization and efficiency in the workplace is known with the term 5S which includes 5 Steps of Japanese names. These 5S names in English are sorting, straightening, shining, standardizing and sustaining. 5S is a workplace organization and continuous improvement system that lays the foundation for all there lean improvement activities. By starting your lean journey with 5S, we will discover the tools and techniques required to be successful in eliminating waste from our processes. 5S is not a system, or program that can be started and completed. It is a continuous improvement process that provides a never ending methodology to continuously improve your operation. It has been proven to work in any business, every sector, all industries, in any country and has been instrumental in changing the culture of organizations worldwide.

Literal Meanings of 5S

JAPANESE	ENGLISH	MEANING	TYPICAL EXAMPLE
<i>Seiri</i>	Structured	Organizing	Throw away rubbish
<i>Seiton</i>	Systemized	Orderliness	30-Second retrieval of a document
<i>Seiso</i>	Sanitized	Cleaning	Individual Cleaning Responsibility
<i>Seiketsu</i>	Standardized	Standardization	Transparency of storage
<i>Shitsuke</i>	Self-Discipline	Sustain/Discipline	Do 5S daily

Advantages of 5s Implementation

- ▶ If gadgets/gages/materials and documents are conveniently located in uncluttered work areas
- ▶ Everyone Knows Where the things are supposed to be
- ▶ This leads to higher workstation efficiency, a fundamental goal in any business
- ▶ A clean and tidy workplace leads to greater wellbeing and increased motivation

- ▶ People spend less time looking for them
- ▶ Health and Safety is ensured
- ▶ Machine maintenance ensured
- ▶ Company image improve
- ▶ Creates workplace ownership
- ▶ Result in a Place Easier to Manage
- ▶ Smooth working no Obstruction
- ▶ Time saving
- ▶ Quick retrieval
- ▶ Increases space
- ▶ Quality improves
- ▶ Productivity increases
- ▶ No Deviation, No Problem
- ▶ Accidents & mistakes minimized

Methods of 5s Implementation

5S # 1 Seiri (Sort, Organization)

- ▶ Identify the unnecessary items from the workplace to Eliminate. (Waste of time).
- ▶ If working place in order, more comfortable (Leave the tools in correct place, If not a specific place, common area (temporarily)).
- ▶ Decide the order (Shape / Importance / Usage).

5S # 2 Seiton (Set in Order)

- ▶ Setting tools in order
- ▶ Organizing the rank of the work That becomes
- ▶ No waste of time / No demotivating interruptions
- ▶ No risk of hitting, spilling while looking for tools
- ▶ Reduces risk of occupational accidents

5S # 3 Seiso (Sweep, Shine)

- ▶ Sweeping means to physically clean up the work area
- ▶ Things put in order and keep in excellent condition
- ▶ Involvement every employee in daily cleaning process
- ▶ Acceptance maintenance as a part of the job
- ▶ Identification of wasted sources → improvement of effectiveness and efficiency
- ▶ Reduced number of hazards → safer working environment

5S # 4 Seiketsu (Standardize)

- ▶ It means creating standard ways to keep the work areas organized, clean and orderly and to document agreements.
- ▶ Variability in the process can be controlled by eliminating “non-standard” resources.
- ▶ Every employee follows those standards, understand and maintaining them will improve the efficiency and reduce the cost.
- ▶ Repeat the first three steps over and over to continuously improve.

5S # 5 Shitsuke (Self-Discipline)

- ▶ Maintenance of favorable habits for a longer time → continuous improvement
- ▶ integrated performance measurement system
- ▶ support of management
- ▶ It makes manufacturing discipline and employee involvement.
- ▶ All the safety information should be put to production and quality reports

Related Studies

Sr. No.	Research Papers & Authors	Major Conclusions
1	S. Venkateswaran, - Implementing Lean in Healthcare Warehouse Operations - Evaluation of 5S Best Practice, 2012.	Main issue leads towards the 5S implementation is lack of proper inventory control measures
		The results of the study clearly show that Hybrid 5S had the greatest impact compared to traditional 5S. Even though one traditional 5S witnessed an increase in inventory turnover (15%), space in the warehouse was not reduced. Hybrid 5S showed a positive influence on the warehouse after the implementation with an increase in inventory turnover of 59.5% and nearly 15.7% space saved, due to incorporation of KAIZEN.
		Proven that there was an influence in the inventory turnover for the Lean strategies.
2	Advisory Committee, 2009, Get your check up, “ASQ Hospital Study”	The Paper Concluded that the main reason for not deploying the Lean or Six Sigma is Lack of Resources (59%); not enough information (41%) and Lack of Buy-in from Leadership (30%) & Lack of Deployment talent (22%).
		To identify the level of adoption of Lean or Six Sigma practices at US Hospitals consisted of 77 Respondents out of 5000 hospitals approximately. Hospitals that have deployed Lean, cited as Throughput need (73% of Hospitals), Business or cost need (68%) and Quality need (56%). And for Six Sigma it was cited as Business or cost need (69%), Quality needs (62%) and Throughput need (41%).
3	S. P. Kaluarachchi - Successful TQM Implementation in Sri Lankan Public Hospitals, 2009.	The change of culture at the hospital has occurred as a result of its Japanese 5S-based TQM activities that were implemented in Year 2000.
		Successful TQM implementation in the hospital contributed toward improving its service outcome / performance over time.
4	I. Nahmens, et al, - Implementing Lean in Healthcare's Warehouse Operations – Evaluation of 5S's Best Practice, 2011	Employee training and top-management involvement needs to be exercised constantly in order to sustain the improvements for long term.
		Process improvement tools and procedures can be studied for the development of an effective approach or model that is best suited for an organization.

5s Implementation at Govt. Health Centers

5S Implementation Campaign at All Health Care Facilities of Ahmedabad District, performed by special Quality Cell of Govt. Of Gujarat

Decision Making

- Health Branch, District Panchayat, Ahmedabad has taken an Effort to Implement the '5S' Concept At All Healthcare Facilities of the Ahmedabad District.
- Logo of the Project is designed and displayed at everywhere within the organization physically and in documentations as well (For reference the logo is provided here in Top of this paper).

Objectives of Implementation of 5s at Govt. Health Centers

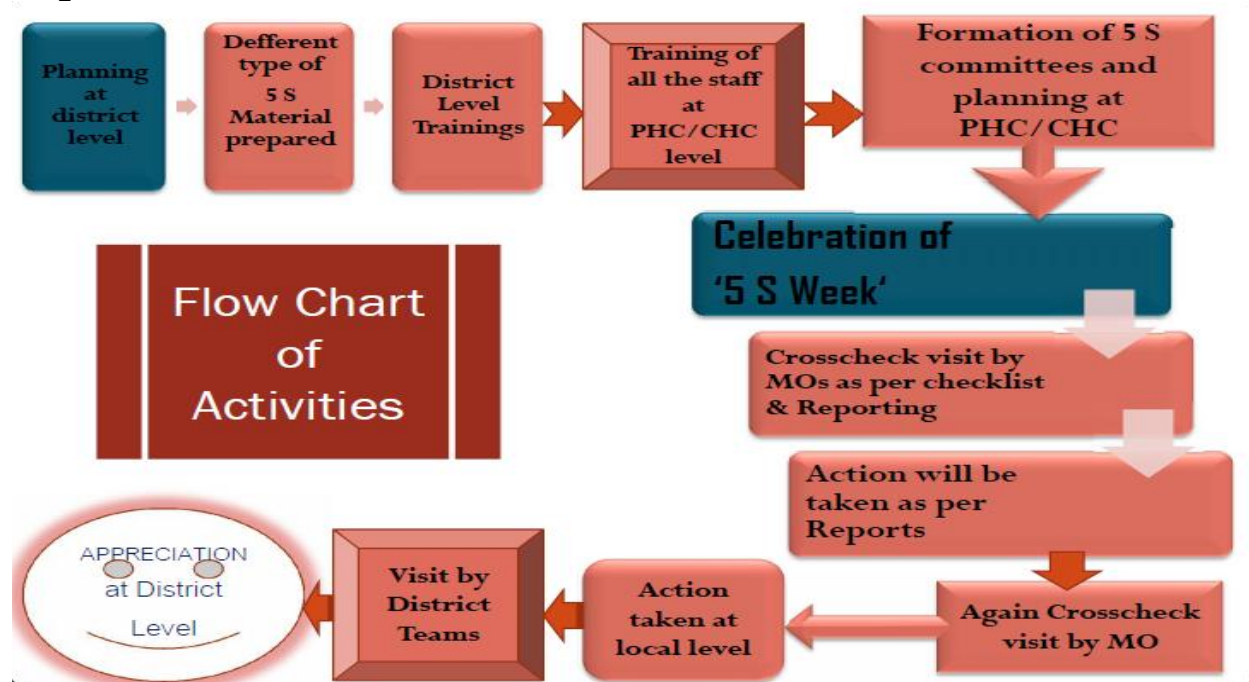
To sensitize all the Healthcare Providers regarding the importance of '5S Concepts' for better health care delivery and develop the '5S' culture to sustain it.

- To make the optimum use of available healthcare resources through the district.
- To improve the healthcare services of the district in terms of 'Quality'.
- To Improve the Image of Govt. Healthcare Facilities among the Community and to improve its acceptance.
- Ultimate Objective is to improve the OPD, IPD, Govt. Institutional Deliveries, Lab. Services and X-ray Services.
- To Sensitize all the Healthcare Providers regarding the importance of '5 S Concepts' or better health care delivery and develop the '5 S' culture to sustain it.
- To make the optimum use of available healthcare resources through the district.
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Implementation Schedule

- Sensitization Trainings at District Level
- Preparation of Special '5S Module', 5S Posters, Signage and Red Tags
- Trainings at PHC - CHC level
- Celebration of 5S Implementation Week
- Cross check Visit to the other PHC / CHC
- Actions taken as per report given at cross checking
- Again Cross check Visit
- Visit by District Teams

Implementation Flow Chart



[Figure: 1 – Flowchart for the Implementation of 5S in Govt. Health Centers of Ahmedabad District.]

Expected Outcomes of this Project

To have successful implementation of 5S concepts throughout the district which would be sustained by means of regular crosscheck visits.

- All the available Healthcare Resources will be used optimally for providing better quality health services.
- The Image of HealthCare Facilities would be improved which will lead to increase in the acceptance of Govt. Health Services among the community.
- The significant increase in the standards of Quality of Health care Services which would lead to improvement in the OPD, IPD, Govt. Institutional Deliveries, Lab. Services and X-ray Services.
- The Motivation of Healthcare Providers will also be increased which, in turn, would lead to better quality health services.

Indicators for Success of 5S Implementation Campaign

Short Term Indicators	Long Term Indicators
Pre & Post Photographs of each health care centre has to record & submit towards the Quality Cell.	Increase in (1) OPD, (2) Indoor, (3) Govt. Inst. Deliveries, (4) Lab Services, (5) X-Ray Services
Improvement in scoring of 5S Checklist during the 5S Campaign	Increase in Patient Satisfaction Index (Survey) will be performed by before & after the Implementation.

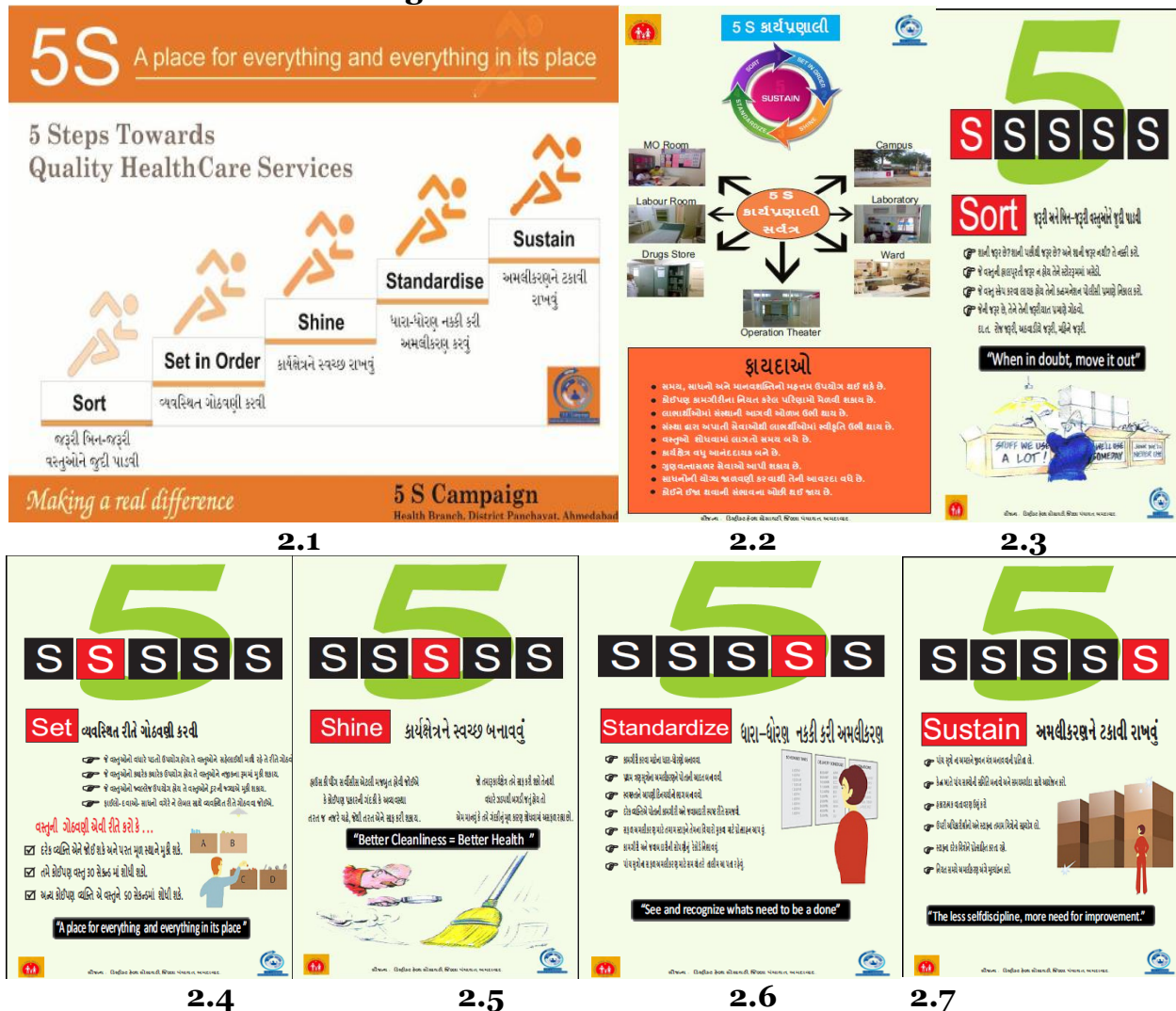
Scope of Work OR Planned Centers to cover in this Project

Total 43 PHC (Primary Health Centers); 12 CHC (Community Health Centers); 7 THO (Taluka Health Offices); 1 (Sola) District Hospital; 1 (Khokhra) Sub-district Hospital; 1 All Offices under CDHO; 1 (Bavla) Training Center.

Posters Designed for Implementation

Few Posters were designed in vernacular Language (Gujarati) to get environment of 5S Implementation Campaign & also for Training Purpose.

5S Posters displayed at prominent places in each health care center. Posters in detailed are as following...



[Figure: 2 – (Top Left) 2.1 – Motivational Graph for 5S Implementation in vernacular language (Gujarati), 2.2 Describes various benefits to Employees for 5S Implementation, 2.3 to 2.7 Describes all 5S meaning & implementation requirements with graphical visuals differently.]

Work Distribution at Different Levels

Important Things listed out considering for all the levels

- Labelling on all cupboards, racks, drawers, files, drugs room, etc. (in office room, lab., Pharmacy, OT, Labour room, AYUSH Room, X-Ray Room, wards, etc.)
- Cleanliness timetable and monitoring sheets on entrance of all the rooms(as per given in 5S module)
- All relevant SOPs displayed in Labour room, OT, Laboratory, Drugs room, Admin
- All the instrument/equipment must be in correct place where they can be easily used
- Visit book must be kept on MO table and maintained.
- Patient friendly signage, citizen charter, etc. are required.
- Welcoming entrance with animal guard and demarcated parking area.
- All files-registers should be labelled and kept in proper place.
- Important data should be displayed in MO Room.

At District Level

CDHO, ADHO, RCHO, DTO, QAMO, EMO, DMO, DIECO, PHN, DPC, AO – Health, AO – FP, OM- NRHM, DFO, Epidemiologist (IDSP)

- ▶ To do needful for the necessary administrative orders and to ensure allocation of the fund, wherever required.
- ▶ To arrange 5S trainings for MO and others
- ▶ To give maximum thrust to the campaign during the decided time period
- ▶ To monitor their respective Talukas for implementation of the campaign
- ▶ To look after that their respective branches / offices must involve in the campaign, implement it and report with photos
- ▶ To give continuous motivation at all level

At Taluka Level

THO, TIECO, THV, M&E

- ▶ THOs will supervise and ensure the implementation in all centers including CHC TH Office
- ▶ They have to personally visit all PHC-CHC in their area and give necessary suggestions
- ▶ They have to ensure that reports must reach in time to district with pre-after photos
- ▶ They should act as linkage between PHC-CHC and district in solving any issues
- ▶ TIECO will ensure that photographs must be taken
- ▶ Reporting of CHC & THO Office must be ensured by THO

At PHC Level

MO, AYUSH, LT, Pharmacist, HV, DEO

- ▶ A committee should be formed as per above mentioned names and to plan the implementation of the campaign.
- ▶ To train the whole staff regarding 5S and sustain it
- ▶ To send report in proper format of PHC to district & block level with proper checklist & pre-after photos
- ▶ MO will have to visit the other PHC as per instruction and give report to district

- ▶ All the staff members must ensure implementation of 5S in their workplace by “TEAM Work”.
- ▶ FHW and MPHWS must have to implement the 5S in their respective sub enters also and send report to district

At CHC Level

CHC supt., MO, Pharmacist, Staff Nurse, LT, FA cum DEO, Administration staff, etc.

- ▶ A committee should be formed as per above mentioned names and to plan the implementation of the campaign.
- ▶ Each staff member should be instructed to implement the campaign in their respective work place
- ▶ Services of additional class IV can be ensured from RKS for better cleanliness
- ▶ A copy of all the SOPs should be given to all to follow it
- ▶ Staff must be trained regarding good housekeeping and infection control
- ▶ Coordinate with THO and get support from RDD/CDHO if required

S1 Implementation



[Figure: 3 - Scrap material identified and Red Tagged on it, during S1 Implementation].

S2 Implementation



[Figure: 4 - BMW (Bio-medical Waste) with identification & registering; Medicine/Drug Room Orderly maintained with detailed Identifications & on defined places only.]

S3 Implementation



[Figure: 5 – Practice of Housekeeping as a mission considered]

S4 Implementation

Visual Labeling on all the cupboards, racks, drawers, files, drug room, etc. with defined Standardized way of maintain that.



[Figure: 6 – Injection Room / Emergency Room and Sterilization area]

S5 Implementation



[Figure: 7 - Patients' friendly housekeeping with signage & displays in practice of Sustainability way, during S5 Implementation]

5S Audit Score Card

CHCs										
Sr.No	PHC	Visited by	Mo	S1 Score	S2 Score	S3 Score	S4 Score	S5 Score	Total Score	Percentile
1	Viramgam	Dr V.P.Pandya	QAMO Shree	14	10	93	10	7	124	50.67
2	Dholka	Dr Divyang Patel	I/C Sup. Viramgam	18	20	150	40	24	252	92.95
3	Dhandhuka	Dr K.R. Patel	Mo Chc Sanand	19	14	122	25	11	191	64.95
4	Singarva	dr. Sunil patel	Sup. detroj	18	13	85	31	21	168	72.78
5	Sanand	Dr B. T. Patel	I/C Sup. Mandal	17	14	109	23	19	182	69.49
6	Detroj	Dr S.G. Katudiya	I/C Sup. Bavla	16	15	102	24	16	173	64.96
7	Ranpur	Dr B.S. Parmar	Sup. Singarva	11	6	62	6	7	92	36.89
8	Bavla	Dr A.R. Singh	Sup. Dhandhuka	15	16	100	24	14	169	62.53
9	Bagodara	Dr Milan A Patel	Mo Chc Dholka	18	13	85	31	21	168	72.78
10	Mandal	Dr Viral Vaghela	Tho Viramgam	22	17	91	29	15	174	71.65
11	Barwala	Dr Dinesh P Patel	Tho Dhandhuka	6	9	58	10	5	88	31.28
12	Ghuma	Dr Kunal Shekar	Sup. Ghuma	8	15	48	36	20	127	77.8

[Table: I - 5S Score Card of each center after internal assessment audit has performed, describing with individual S's score and Percentile Ranking, during 5S Auditing]

3.2 TRAINING IMPARTMENT @ VARIOUS LEVELS

Basic Awareness Training towards the entire Staff Members without fail in any case, was the Moto before starting Implementation. Not a single member should be unaware of 5S Implementation Concepts. The Project has started with Training of Top Management including Senior Doctors, Medical & Paramedical Staff as planned in various sessions and it was awarded to impart by SAMRAT CORPORATE CONSULTANTS Pvt. Ltd. – The Management Consultants. www.samratassociates.com



[Figure: 8 – Training Sessions for Doctors, Paramedical Staff & Nurses]

BEFORE & AFTER VISUALS

Before



After



[Figure: 9 – Outside exterior with aesthetic view of a Health Care Center]



[Figure: 10-Storage facility - Oxygen Gas Bottle with safety cap and rolling stand guard]

Before



After



[Figure: 11 - Operation Theater]



[Figure: 12 – Aisle of the Medical Center's premises]

Top Management Involvement



[Figure: 13 – Mr. Banchanidhi Pani (Hon. District Development Officer, Ahmedabad) as a Top Management with his Team Involved in Continual Improvements Decision making during stage-wise entire Project Implementation and review of the implementation status as well]

Conclusion

A mammoth task has occupied by Govt. of Gujarat to Improve the Govt. Health Services by implementing 5S concept in one district, Ahmedabad. After almost a year of implementation one cannot admit that 5S is implemented at all the centres but It can be said that most of the centres have understood and started the journey to follow the 5S principles which could lead towards the sustainability only with sincere and continuous efforts. Percentiles of most of the PHCs have improved gradually as time flows and people are getting become matured enough for this concern. Most of the PHCs have shown better commitment and started the implementation in positive way and looks they will definitely sustain it.

It is observed that Few CHCs have not responded well which is a matter of concern. CHC Supt. has to work harder for implementation of 5S in true sense and to sustain it. Still some chances for improvements are found easily at various centres during assessment like, wrong BMW Storage practices, removal of a massive unwanted material from stores, care of safety precautions, unused equipment are kept stored, and even some are very basic infrastructural things like, unclean / broken bathroom sanitary, dirty MACKINTOSH sheets are being used, hygienic conditions of laboratory practices, appropriate management of medications, proper classification of records and labelling / identifications, etc.

The District Health Team has been making sincere efforts under the guidance of Hon. District Development Officer of Ahmedabad for the best possible implementation of 5S. Here it is easily observed that as the Team is appropriate & with enthusiastic members. Hence, 5th 'S' Sustainability looks confident as the way of various decisive actions taken by this Team.

As a resultant of this entire project the level of work enthusiasm has also increased positively. Resultant, Quality in Health and Nutritious factor has increased in children of Ahmedabad District especially and recorded with first rank in entire country. After looking this growth QCI (Quality Council of India) Govt. of India, Organization has awarded National Quality Award for 'Nutrition Mission' achievement towards the Team.

At the end by presenting this Seminar Presentation, it has given an opportunity to identify the past researchers' experiences & comments on real 5S Implementation in Health Care Sector / Medical Industry. It has also given chance to present the real implementation practices and challenges found during and after the implementation of some Lean Concepts in Indian Governmental Health Care facilities. By this research one can easily ascertain the optimistic, constructive & confident vision of the Top Management of Govt. of Gujarat.

Acknowledgement

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References

Visuals:

Visuals are received by Dr. Vijay Pandya [QAMO (Quality Assurance Medical Officer, HOD, Quality Cell, GOG (Government of Gujarat) and Team Leader for 5S Implementation Campaign, Ahmedabad District Panchayat, GOG].

Printed Papers:

- Tamer H. Haddad, Dr. Ayham A.M. Jaaron, - **The Applicability of Total Productive Maintenance for Healthcare Facilities: an Implementation Methodology**, Palestine, *International Journal of Business, Humanities and Technology*, Vol. 2 No. 2; March 2012.
- Advisory Committee, 2009, Get your check up, ASQ Study Looks at Hospital Deployment of Lean and Six Sigma, Quality Progress, 44-50 Page.
- Soren Bisgaard, Ronald J. M. M. Does, 2009, Quality Quandaries: Health Care Quality – Reducing the Length of Stay at a Hospital, Quality Engineering, 21: 117-131, Taylor & Fancies.
- Sanjith Venkateswaran, Isabelina Nahmens, and Laura Ikuma - **IMPLEMENTING LEAN IN HEALTHCARE'S WAREHOUSE OPERATIONS – EVALUATION OF 5S'S BEST PRACTICE**, Department of Construction Management and Industrial Engineering, Louisiana State University, 3128 Patrick F. Taylor, Baton Rouge, LA, 2012.
- Sanjith Venkateswaran, India, 2008, - **IMPLEMENTING LEAN IN HEALTHCARE WAREHOUSE OPERATIONS – EVALUATION OF 5S BEST PRACTICE** - Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfilment of the requirements for the degree of Master of Science in Industrial Engineering in The Department of Construction Management and Industrial Engineering USA, Aug. '11.
- Samantha Padmasiri KALUARACHCHI, - **Successful TQM Implementation in Sri Lankan Public Hospitals**, Annals of Business Administrative Science, Online ISSN 1347-4456, Print ISSN 1347-4464, Available at www.gbrc.jp, Global Business Research Centre, 2009.
- James P. Womack, Arthur P. Byrne, Orest J. Fiume, Gary S. Kaplan, John Toussaint, Editor: Diane Miller, MBA: *Director, IHI*, - **Going Lean in Health Care**, Innovation Series, 2005.

Magazine:

Gujarat Monthly, Govt. of Gujarat, Page 31. <http://www.gujaratinformation.net>

Literature Review from Books:

- Rajaaram S. & Sivakumar M., (2008) Total Quality Management, by Indian Text Edition, Biztantra Management for the Flat World!
- Amol Gore, Roberto Panizzolo, (2012), Operations Management, Cengage Learning.
- Robert E. Markland, Shawnee K. Vickery, Robert A. Davis, (1995), Operations Management – Concepts in Manufacturing and Services, West Publishing Company.

Websites:

- <http://www.samratassociates.com/5s.htm>, [Date: 10/06/14]
- <http://www.samratassociates.com/trainings-imparted-towards-govt.htm>, [Date: 10/06/14]
- <http://www.narendramodi.in/gujarat-continues-winning-laurels/>, [Date: 10/06/14]
- http://www.youtube.com/watch?v=_kSgdEmxomM, [Date: 10/06/14]
- <http://www.narendramodi.in/shri-modi-congratulates-ahmedabad-district-panchayat-for-winning-a-national-award-for-their-wonderful-work-in-tackling-malnutrition/>, [Date: 10/06/14]
