Internship Training at NRHM Gujarat

By

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PGDHM

2012-2014

International Institute of Health Management Research
New Delhi

Internship Training

At

NRHM Gujarat
(FEB 06 – MAY 03, 2014)

To study the existing scenario of NPCDCS and compare it with proposed operational guidelines by government

and

To implement "5s" in the hospital as a tool to improve the quality standards as a part CQI

By

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Under the guidance of

Dr. AK Agarwal

Post Graduate Diploma in Hospital and Health Management

2012-2014

International Institute of Health Management Research
New Delhi

Office of the Chief District Medical Officer cum
Civil Surgeon and Member Secretary,
Jilla Rogi Kalyan Samity,
Civil Hospital Junagadh.
Date: 03-05-2014

Certificate of completion

The certificate is awarded to BHOOMI SHAH in recognition of having successfully completed her Internship in the department of Rogi Kalyan Samiti and NABH, and has successfully completed her Project on **studying the existing scenario of NPCDCS and comparing it with proposed operational guidelines by government and also implementing "5s" in the hospital as a quality improvement tool.**

Date - 06- 02 -2014 to 03-05-2014

Organization – General hospital, Junagadh, Gujarat

She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.

We wish her all the best for future endeavors.

3/5/14

H.R Manager

H.R. Manager
General Hospital
Junagadh

CERTIFICATE

TO WHOMSOEVER MAY CONCERN

This is to certify that **BHOOMI SHAH** student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from International Institute of Health Management Research, New Delhi has undergone internship training at **NRHM Gujarat** from 06-02-2014 to 03-02-2014.

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

Dean, Academics and Student Affairs

IIHMR, New Delhi

Professor

IIHMR, New Delhi

Certificate Of Approval

The following dissertation titled **"studying the existing scenario of NPCDCS and comparing it with proposed operational guidelines by government and also implementing "5s" in the hospital as a quality improvement tool** at civil hospital, junagadh is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
1. Dr AKAgarwal	
2. Prof S Satpathy	
3. Dr Sanjaya Pal	

Certificate from Dissertation Advisory Committee

This is to certify that **BHOOMI SHAH,** a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. She is submitting this dissertation titled **"Studying the existing scenario of NPCDCS and comparing it with proposed operational guidelines by government and also implementing "5s" in the hospital as a quality improvement tool"** at **"Civil Hospital, Junagadh,"** in partial fulfillment of the requirements for the award of the **Post-Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **"studying the existing scenario of NPCDCS and comparing it with proposed operational guidelines by government and also implementing "5s" in the hospital as a quality improvement tool"** and submitted by BHOOMI SHAH Enrolment No. PG/12/019 under the supervision of Dr. ASHOK AGARWAL for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 2012 to 2014 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Bhoomi Shah
5/5/2014
Signature

FEEDBACK FORM

Name of the Student: BHOOMI SHAH

Dissertation Organisation: NRHM Gujarat
General Hospital, Junagadh, Gujarat

Area of Dissertation: Operations and quality

Attendance: 06-02-2014 to 04-05-2014

Objectives achieved: Yes

Deliverables: Achieved in the department of Rogi Kalyan Samiti (RKS) and NABH

Strengths: Punctual, disciplined, sincere, hardworking, committed, communicative, and result oriented

Suggestions for Improvement:
Should have a better grip on local language (Gujarati)

28/4/14

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EXECUTIVE SUMMARY

India is experiencing a rapid health transition with a rising burden of non-communicable diseases (NCD). To promote health and prevent disease, an integrated National Programme for Prevention & Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) has been formulated.

The objective of NPCDCS is to prevent and control common NCDs through behaviour and life style changes, early diagnosis and management of these diseases. The activities at State, Districts, CHC and Sub Centre level have been planned under the programme and will be closely monitored through District level authorities. The NCD cell at various levels will ensure implementation and supervision of the programme activities related to health promotion, early diagnosis, treatment and referral, and further facilitates partnership with laboratories for early diagnosis in the private sector. As the burden of diseases is increasing, it brings out a need to build a strong monitoring and evaluation system through the public health infrastructure. To start with the monitoring and evaluation of the programme the gaps between existing scenario of NPCDCS and its proposed guidelines needs to be studied and worked upon. In this study various gaps were analyzed between implemented guidelines at district level and the proposed guidelines by government and Managerial steps for reducing those gaps were recommended.

Quality improvement plays an important role in delivering better health services. 5s is used as one of the tools to improve quality standards in healthcare organization. Other

results which can be expected from a 5S program are: improved profitability, efficiency, service and safety.

In this study, gaps of last audit were reviewed and accordingly interventions were planned to improve the 5s scores and reduce the gaps.

Later a comparative was drawn to find out the percentage improvement in the 5s scores before and after the implementation of the planned interventions. A notable increase was observed in the 5s scores before and after the implementation of planned intervention.

Acknowledgement

The completion of this Dissertation in NRHM (Government of Gujarat) marks the end of my tenure as an intern in this vivacious organization (General Hospital, Junagadh). It however cannot be regarded as being complete without acknowledging the help and support of all those who invested their time and energy to make this possible.

I take this as an opportunity to express my sincere gratitude to Dr. G T Dayalu (Chief District Medical Officer cum Civil Surgeon) for giving me this chance to enhance my exposure from the safe environment of a student to the world of realities.

I am delighted to offer a sincere thanks to Mr.Nirmalsinh Bhati, (Account Officer, RKS) who guided me throughout the dissertation period and provided me with critical inputs to improve my study and constant words of encouragement all the time.

Further I also have a special word of thanks for my mentor Dr. Ashok Agarwal (Dean Academics, IIHMR DELHI) for his experienced Guidance and valuable suggestions for improving my study.

Last but not the least I would like to extend my heartfelt gratitude to my family for having faith in me and all those people who gave an interesting ear to my queries.

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List of Abbreviations

CDMO- Chief District Medical Officer

RMO-Resident Medical Officer

OPD-Out Patient Department

IPD-In Patient Department

NABH- National Accreditation Board for Hospitals & Healthcare Providers

CQI- Continuous Quality Improvement

HR- Human Resources

NHM- National Health Mission

NRHM-National Rural Health Mission

NUHM-National Urban Health Mission

RKS- Rogi kalyan samity

NPCDCS- National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke

H&FWD Health and Family Welfare Department

IDSP-Integrated Disease Surveillance Project

MDG-Millennium Development Goals

CVD-cardiovascular diseases

NCDs-Non-Communicable Diseases

IPHS-Indian Public Health Standards

DHS-District Health Society

NTCP-National Tobacco Control Programme

NPHCE-National Programme for Health Care of Elderly

Part A

Internship report

Organisation profile

National Rural Health Mission (NRHM)

The National Rural Health Mission (NRHM) was launched by the Hon'ble Prime Minister on 12th April 2005, to provide accessible, affordable and quality health care to the rural population, especially the vulnerable groups. The Union Cabinet vide its decision dated 1st May 2013, has approved the launch of National Urban Health Mission (NUHM) as a Sub-mission of an over-arching National Health Mission (NHM), with National Rural Health Mission (NRHM) being the other Sub-mission of National Health Mission.

NRHM seeks to provide equitable, affordable and quality health care to the rural population, especially the vulnerable groups. Under the NRHM, the Empowered Action Group (EAG) States as well as North Eastern States, Jammu and Kashmir and Himachal Pradesh have been given special focus. The thrust of the mission is on establishing a fully functional, community owned, decentralized health delivery system with inter-sectoral convergence at all levels, to ensure simultaneous action on a wide range of determinants of health such as water, sanitation, education, nutrition, social and gender equality. Institutional integration within the fragmented health sector was expected to provide a focus on outcomes, measured against Indian Public Health Standards for all health facilities**.**

State profile

Geography

Gujarat is situated between 20o1' and 24o7' north latitudes and 68o4' and 74o4'east longitudes on the west coast of India. It is bounded on the west by the Arabian sea, on the north-west by Pakistan, on the north by Rajasthan, on the east by Madhya Pradesh and on the south and south-east by Maharashtra.

The state of Gujarat occupies the northern extremity of the western sea-board of India. It has the longest coast line 1290 km among Indian states. The state comprises three geographical regions.

- The peninsula, traditionally known as Saurashtra. It is essentially a hilly tract sprinkled with low mountains.
- Kutch on the north-east is barren and rocky and contains the famous Rann (desert) of Kutch, the big Rann in the north and the little Rann in the east.
- The mainland extending from the Rann of Kutch and the Aravalli Hills to the river Damanganga is on the whole a level plain of alluvial soil.

Demographic, Socio-economic and Health profile of Gujarat State as compared to India figures

Indicator	Gujarat	India
Total population (In crore) (Census 2011)	6.03	121.01
Decadal Growth (%) (Census 2011)	19.17	17.64
Infant Mortality Rate (SRS 2011)	41	44
Maternal Mortality Rate (SRS 2007-09)	148	212
Total Fertility Rate (SRS 2011)	2.4	2.4
Crude Birth Rate (SRS 2011)	21.3	21.8
Crude Death Rate (SRS 2011)	6.7	7.1
Natural Growth Rate (SRS 201)	14.6	14.7
Sex Ratio (Census 2011)	918	940
Child Sex Ratio (Census 2011)	886	914
Schedule Caste population (in crore) (Census 2001)	0.35	16.6
Schedule Tribe population (in crore) (Census 2001)	0.74	8.4
Total Literacy Rate (%) (Census 2011)	79.31	74.04
Male Literacy Rate (%) (Census 2011)	87.23	82.14
Female Literacy Rate (%) (Census 2011)	70.73	65.46

Table 1 demographic socio- economic and health profile

District profile

Junagadh is the headquarters of Junagadh district. The city is the 7th largest in Gujarat, in western India, located at the foot of the Girnar hills, 355 km south west of state capital Gandhinagar and Ahmedabad.

Literally translated, Junagadh means "Old Fort". It is also known as "Sorath", the name of the earlier Princely State of Junagadh. After a brief struggle between India and Pakistan Junagadh joined India on 9 November 1947. It was a part of Saurashtra state and later Bombay state. In 1960, after the Maha Gujarat movement, it became part of newly formed Gujarat state.

Geography

Junagadh is located at 21.52°N 70.47°E. It has an average elevation of 107 metres (351 ft).

Junagadh is situated at the foot of Mount Girnar. Junagadh has Arabian sea to its southwest, Porbandar to its north and Amreli to its east.

Junagadh city has pretty much similar soil as whole Junagadh district. It is Deep-Medium black coastal alluvium. It is because proximity of sea and long shore line and also because of the Girnar mountain ridge. Junagadh lies in Seismic Zone III region which means earthquake up to magnitude 6.5 on the Richter-scale may be expected.

Demographics

As of the 2011 census, Junagadh municipality had a population of 320,250. The municipality had a sex ratio of 952 females per 1,000 males and 8.5% of the population was under six years old. Effective literacy was 88.63%; male literacy was 93.23% and female literacy was 83.83%.

Hospital profile

General hospital Junagadh is a 510 bedded, secondary care district hospital. It was established in 1913 by Nawab of Junagadh, Rasulkhanji. The hospital is also known as civil hospital.

The hospital is a referral centre for 17 CHCs, 53 PHCs and 390 Sub centres of Junagadh. The Finance of the hospital is handled mainly by grants sanctioned by Government of Gujarat and Rogi Kalyan Samity.

Mission

We shall enhance the patient quality life through providing specialized medical treatment at free/ affordable rates the poor and the needy and preventive healthcare.

Vision

To be the network of finest public health care institutions in the state of Gujarat, providing quality medical care services with the state of art technology with easy accessibility, affordability and equity to the people of Gujarat and beyond.

Services provided in the hospital are

- General Medicine
- General Surgery
- Ear, Nose, Throat (ENT)
- Gynecology
- Routine and high risk obstetric care
- Pediatrics and Neonatal services
- Orthopedics
- Ophthalmology

- Dermatology
- Dental Sciences
- Psychiatry
- Physiotherapy
- Disability rehabilitation
- ART center
- Dialysis
- NCD cell (NPCDCS program)
- Cancer screening project
- RCH-II (Reproductive and Child Health)
- RNTCP (Revised National Tuberculosis Control Program)
- Malaria Control
- Blindness Control
- Polio Eradication
- Immunization
- National AIDS Control Programme
- Family Planning
- Thalessemia detection Programme

Managerial task performed during internship

- **Recruitment for manpower**

  I conducted the entire process of Recruitment for counsellor cum data operator and nursing staff or NICU. Applications were invited through advertisement is given in different newspapers. Applications were shortlisted on merit basis and candidates eligible were called for interview.

- **Purchasing and procurement of various equipments**

  As per the government guidelines, following equipments were purchased

1. For general use in hospital
    a. Computers
    b. printers
2. For NICU
    a. baby infusion syringe pumps
    b. Baby basinet warmer.

- **Opening of tender**

  An advertisement was given to invite tenders for outsourcing security services in the hospital. At the pre fixed date, tender was opened by the committee. The members present in the committee were CDMO, RMO, AHA, AO.

- **Managing RKS and NABH expenditure**

  As my department of dissertation was RKS and NABH supervising the fund utilization and passing of bill was one of the table works assigned to me.

- **Making ward checklist for daily rounds**

  The task allotted to me was to prepare the checklist for wards and OPD and trauma centre for assessing the physical facility and documentation of records.

- **Monitoring and evaluation of NPCDCS**

  As I was a part of NPCDCS monitoring committee the financial and physical report monitoring was my job.

- **5s implementation**

  As I was working in NABH department as a part of quality improvement programme implementing 5 s in the hospital was assigned to me.

Part B

Dissertation report

Introduction for managerial work

Non-Communicable Diseases (NCDs) are now the leading cause of premature and preventable death and illness globally. The four leading NCDs, as measured by their prevalence, are cardiovascular diseases (CVD), diabetes mellitus (diabetes), chronic obstructive pulmonary disease (COPD) and cancer. These NCDs are caused by most common preventable risk factors related to lifestyle namely tobacco and alcohol use, physical inactivity and unhealthy diet. These modifiable risk factors and NCDs are a major cause of poverty, a barrier to economic development, and a serious threat to the achievement of the UN Millennium Development Goals (MDGs).

NCDs account for 63% of total deaths globally, with 40 million deaths estimated occurring annually. They contribute to 40% of the universal disease burden annually. It is projected that if no further steps are taken in the present, these rates will increase to as high as 73% of total deaths and 60% of disease burden respectively by 2020 (WHO, 2005)1. With the purpose to improve information available to the health services, Government of India (GoI) in 2004 through its wing, the Ministry of Health and Family Welfare (MoHFW), with the assistance of the World Bank initiated a decentralized, state based Integrated Disease Surveillance Project (IDSP) in the country. Various studies have been conducted in India to provide estimates on NCD prevalence. However, limited population based information is available on prevalence of NCDs at district level.

RATIONALE OF STUDY

India is experiencing a rapid health transition with a rising burden of Non Communicable Diseases (NCDs). According to a WHO report (2002), cardiovascular diseases (CVDs) will be the largest cause of death and disability in India by 2020. Overall, NCDs are emerging as the leading cause of deaths in India accounting for over 42% of all deaths (Registrar General of India). NCDs cause significant morbidity and mortality both in urban and rural population, with considerable loss in potentially productive years (aged 35–64 years) of life**.**

NCDs account for 62% of total deaths in India. India experienced the highest loss in potentially productive years of life in 2005 worldwide[1]. The projected cumulative loss of national income for India due to NCD mortality for 2006-2015 is expected to be USD237 billion. NCDs in India accounted for 40% of all hospital stays and 35% of all outpatient visits in 2004[2]. By 2030, this productivity loss is expected to double to 17.9 million years lost[3]. There has been an increase of nearly 50% in the out of pocket expenditure for NCDs i.e. from 31.6% in 1995-96 to 47.3% in 2004 with the major portion of the money used for purchasing of medicines, diagnostic tests and medical equipment[1].

In India, life expectancy is increasing and therefore a greater number of older individuals are at greater risk of chronic diseases. At the same time, industrialization, socio-economic development, urbanization, changing age structure, changing lifestyles has placed India at a position where it is facing a growing burden of NCDs. The impact of NCDs on the lives of people is serious when measured in terms of mortality,

morbidity, disablement, economic loss of country[4]. Thus, NCDs are considered a major public health concern worldwide.

Government of India realized that there is urgent need for a comprehensive scheme that should focus on health promotion and prevention of NCDs and their risk factors and comprehensive management of NCDs at various levels across the country.

States have already initiated some of the activities for prevention and control of non communicable diseases (NCDs) especially cancer, diabetes, CVDs and stroke.The Central Govt. proposes to supplement their efforts by providing technical and financial support through National Program for Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS).

About NPCDCS

The NPCDCS program has two components viz. (i) Cancer & (ii) Diabetes, CVDs & Stroke. These two components have been integrated at different levels as far as possible for optimal utilization of the resources. The activities at State, Districts, CHC and Sub Centre level have been planned under the programme and will be closely monitored through NCD cell at different levels.

The Government of India launched a flagship programme called the NRHM in 2005 with the objective of expanding access to quality health care to rural populations by undertaking architectural corrections in the institutional mechanism for health care delivery. The crucial strategies under NRHM have been the integration of Family Welfare and National Disease Control Programmes under an umbrella approach for optimization of resources and manpower; strengthening of outreach services by incorporation of village health worker called ASHA; efforts for communalisation of services through formation of Health and Sanitation Committees at village, block and district level; registering Rogi Kalyan Samities (RKS) for improving hospital management; strengthening and upgrading the public health infrastructure to Indian Public Health Standards (IPHS); and consolidation of the District Level Programme Management Unit through the induction of professionals.

The NPCDCS aims at integration of NCD interventions in the NRHM framework for optimization of scarce resources and provision of seamless services to the end customer / patients as also for ensuring long term sustainability of interventions. Thus, the institutionalization of NPCDCS at district level within the District Health Society, sharing administrative and financial structure of NRHM becomes a crucial programme strategy for NPCDCS.

The NCD cell at various levels will ensure implementation and supervision of the programme activities related to health promotion, early diagnosis, treatment and referral, and further facilitates partnership with laboratories for early diagnosis in the private sector. Simultaneously, it will attempt to create a wider knowledge base in the community for effective prevention, detection, referrals and treatment strategies through convergence with the ongoing interventions of National Rural Health Mission (NRHM), National Tobacco Control Programme (NTCP), and National Programme for Health Care of Elderly (NPHCE) etc. and build a strong monitoring and evaluation system through the public health infrastructure.

Objectives of NPCDCS

- Prevent and control common NCDs through behaviour and life style changes,
- Provide early diagnosis and management of common NCDs,
- Build capacity at various levels of health care for prevention, diagnosis and treatment of common NCDs,
- Train human resource within the public health setup viz doctors, paramedics and nursing staff to cope with the increasing burden of NCDs, and
- Establish and develop capacity for palliative & rehabilitative care.

Strategies

The Strategies proposed by government to achieve above objectives are as follows:

- Prevention through behaviour change
- Early Diagnosis
- Treatment
- Capacity building of human resource
- Surveillance, Monitoring & Evaluation

Prevention through behaviour change

The major risk factors to cancer, hypertension, obesity, diabetes and cardiovascular diseases are unhealthy diet, physical inactivity, stress and consumption of tobacco & alcohol.

Attempts will be made to prevent these risk factors by creating general awareness about the Non Communicable Diseases (NCD) and promotion of healthy life style habits among the community. Such interventions will be done through the peripheral health functionaries and NGOs.

Interpersonal communication will be carried out through ASHAs/ AWWs/ SHGs/ Youth clubs, Panchayat members etc. for which education material will be developed at

central / State level to facilitate IEC/ BCC activities. These workers / groups will also help in Social mobilization for diagnostic camps. Targeted intervention programmes will be designed to bring awareness in schools and workplaces.

Early diagnosis

Strategy for early diagnosis of chronic non-communicable diseases will consist of opportunistic screening of persons above the age of 30 years at the point of primary contact with any health care facility, be it the village, CHC, District hospital, tertiary care hospital etc. Opportunistic screening will have in built components of mass awareness creation, self screening and trained health care providers.

Such screening involves simple clinical examination comprising of relevant questions and easily conducted physical measurements (such as history of tobacco consumption and measurement of blood pressure etc.) to identify those individuals who are at a high risk of developing diabetes and CVD, warranting further investigation/ action. The investigations which may not be carried out in the health facilities can be outsourced.

Treatment

"NCD clinic'' will be established at CHC and District Hospital (NCD here refers to Cancer Diabetes, Hypertension, Cardiovascular diseases and Stroke) where comprehensive examination of patients referred by lower health facility /Health Worker as well as of those reporting directly will be conducted for ruling out complications or

advanced stages of common NCDs. Screening, diagnosis and management (including diet counselling, Lifestyle management) and home based care will be the key functions.

Capacity building of human resource

Health personnel at various levels will be trained for health promotion, prevention, early detection and management by a team of trainers at identified Training Institutes/Centres. These Training Institutes/Centres will be identified by the State in consultation with the Centre.

Supervision, monitoring and evaluation

Regular monitoring and review of the scheme will be conducted at the District, State and Central level through monitoring formats and periodic visits and review meetings. For the purpose, NCD cell at different levels is envisaged to supervise and monitor the programme and also other NCD programmes. The evaluation is the integral part of the programme and will be carried out concurrently and periodically, as & when required.

The strategies proposed have been implemented in 20,000 Sub Centres and 700 Community Health Centre in 100 Districts across 21 States during 2010-12.

Figure 1: India's Map showing the States in which NPCDCS has been implemented.

Objective

Managerial and Administrative Work

General objective:-

To study the existing scenario of NPCDCS and compare it with proposed guidelines by government.

Specific objectives:-

- To study the detailed operational guidelines of NPCDCS proposed by government as applicable at district level.

- To study the status of implementation of the guidelines in District hospital, Junagadh.

- To identify the gaps between the proposed operational guidelines of the program and its status of implementation in the District hospital, Junagadh.

- To put forward recommendations to reduce the gaps between operational guidelines and current status of implementation.

Methodology

A thorough study of proposed operational guidelines for NPCDCS was done. Guidelines applicable at district level were sorted out.

A comparative study was carried out to find the on field difference between the proposed guidelines and the operational guidelines at district hospital level. Gaps were then analyzed and recommendations for improvements were listed down. Suggestions were also made to describe how to effectively monitor and evaluate the ongoing process.

Study design

Descriptive cross-sectional study

Study area

Civil Hospital, Junagadh, Gujarat

Data analysis and data interpretation

A detailed research was carried out to collect and study the proposed operational guidelines of NPCDCS by government.

The guidelines have been divided into different levels like

At central level

At state level

At district level

In district level, further, the sorting is done and guidelines as applicable at district hospital are listed as follows:

OPERATIONAL GUIDELINES

Package of Services

In the programme, it is envisaged providing preventive, promotive, curative and supportive services (core and integrated services) in Cancer, Diabetes, Cardio-Vascular Diseases (CVD) & Stroke at various government health facilities.

The package of services would depend on the level of health facility and may vary from facility to facility. The range of services will include health promotion, psycho-social counselling, management (out-and-in-patient), day care services, home based care and palliative care as well as referral for specialized services as needed.

Health Facility	Packages of services
District Hospital	Early diagnosis of diabetes, CVDs, Stroke and Cancer
	Investigations: Blood Sugar, lipid profile, Kidney Function Test (KFT),Liver Function Test (LFT), ECG, Ultrasound, X ray, colonoscopy , mammography etc. (if not available, will be outsourced)
	Medical management of cases (out patient , inpatient and intensive Care)
	Follow up and care of bed ridden cases
	Day care facility
	Referral of difficult cases to higher health care facility
	Health promotion for behaviour change

Table 2: Packages of services to be made available at different levels under NPCDCS

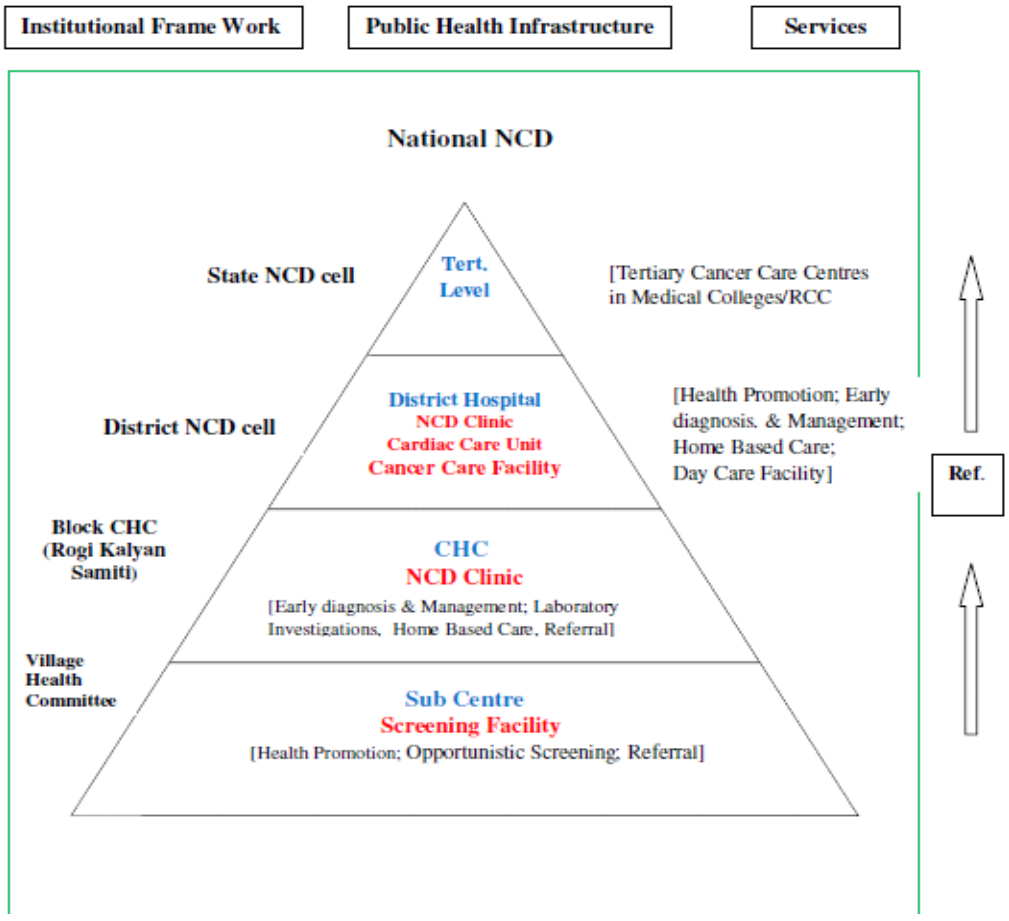

Figure 2: services available under NPCDCS at different levels

Organisation structure (At district level)

District NCD Cell

District NCD Cell will be established preferably in the Directorate of Health services or any other space provided by District head quarter. The NCD Cell will be responsible for overall planning, implementation, monitoring and evaluation of the different activities and achievement of physical and financial targets planned under the programme in the District.

The Cell shall function under the guidance of District programme Officer (DPO NCD) and will be supported by the identified officers/officials from the District health system. DPO NCD shall be a district level health official and be identified by the State government.

Composition:

District NCD Cell will be supported by following contractual staff:

- District Programme Officer
- Programme Assistant
- Finance cum Logistics Officer
- Data Entry Operator

- **Role and responsibilities of the District NCD Cell**

  - Preparation of District action plan for implementation of NPCDCS strategies.

- Maintain and update district database of NCD diseases including cancer, diabetes, cardiovascular disease and stroke.

- Conduct sub-district/ CHC level trainings for capacity building

- Engage contractual personnel sanctioned for various facilities in the district

- Maintain fund flow and submit Utilization Certificates

- Maintaining District level data on physical, financial, epidemiological progress

- Convergence with NRHM activities; and

- convergence with the other related departments in the States/ District

- Ensure availability of palliative and rehabilitative services including oral morphine

Activities at District Level

The selected district shall provide the full complement of preventive, supportive and curative services for cancer diabetes, hypertension and cardio vascular diseases including stroke through the selected District Hospital. Following services will be provided by district hospital

District shall identify a district hospital to be strengthened under NPCDCS for providing NCD services. The hospital shall have an ICU and basic laboratory facilities available attached to it. A'NCD clinic' will be established at the identified district hospital to provide emergency care and management of cancer, diabetes, hypertension and acute cardiovascular diseases. The clinic shall run on all working days of the weak. ICU of the district hospital will be upgraded/ strengthened with a cardiac care unit (2-4 beds) with ventilator and other necessary equipments. Following activities will be performed by a District under the NPCDCS:

A. <u>Opportunistic screening</u>

NCD clinic at district hospital shall screen persons above the age of 30 years for diabetes, hypertension, cardiovascular diseases etc. to identify individuals who are at a high risk of

Developing diabetes, hypertension and CVDs warranting further investigation/ action. Such screening shall involve simple clinical examination comprising of relevant questions and easily conducted physical measurements (such as history of tobacco consumption and measurement of blood pressure, blood sugar estimation etc.)

District NCD clinic shall also screen women of the age group 30-69 years approaching to the hospital for early detection of cervix cancer and breast cancer. District hospital would be assisted to purchase the required equipments like colposcope and mammography etc.

B. Detailed investigation

Detailed investigation of persons those who are at high risk of developing NCDs on screening and those who are referred form CHCs will be done at district hospital. Laboratory services at district hospital will be strengthened/established to provide necessary investigations for cancer, diabetes, hypertension and cardiovascular diseases like Cardiac Enzymes, Lipid Profile Coagulation parameters, ECG, ECHO, CT Scan, MRI and other laboratory investigations.

C. **Outsourcing of certain laboratory investigations**

District hospital may outsource certain laboratory investigations that are not available at district hospitals including mammography.

Financial assistance will be provided (details are in financial guidelines) under Public Private Partnership (PPP) mode will be granted for the purpose. It is expected that district hospital shall have X-ray and ultrasound facilities; however, in places where it is not available these shall be outsourced. The District Hospital shall display the list of Laboratories in which these investigations would be outsourced.

D. Out-patient and In-patient Care

NCD Clinic at District Hospital shall provide regular management and annual assessment of persons suffering from cancer, diabetes and hypertension. People with

established cardiovascular diseases shall also be managed at district hospital. Cardiac care unit established at hospital shall manage acute and emergent cases of cardiovascular diseases. The hospital shall ensure the availability of essential drugs. In case of Cancer support shall be provided for common chemotherapy drugs to treat about 100 cases, from the poor category only.

- **Day Care Chemotherapy Facility**

Identified district hospital shall provide a day care chemotherapy facility for patients on chemotherapy regimens. The day care facility shall have 4 beds along with necessary equipments such as IV stands, BP instruments, sterilizer etc. A medical oncologist and two 2 Nurses shall be appointed on contractual basis for smooth functioning of the centre.

- **Home Based Palliative Care**

District hospital shall provide Home based palliative care for chronic, debilitating and progressive patients. A team consisting of nurse and counsellor shall be trained in identifying symptoms, pain management, communication, psychosocial & emotional care, nursing needs of the terminally ill and ethics of palliative care. The nurse shall be trained in wound dressing, mouth care, oral morphine use, diet, hygiene etc. Home care kit containing stethoscope, BP apparatus, torch, thermometer, tongue depressor, forceps, and common medicines etc. shall be provided to this team.

G. Referral & Transport facility to serious patients

To ensure timely and emergent care to the patient at distant CHC or below, district hospital shall make provision for transporting the serious patients to the hospital or at nearest tertiary level facility.

Complicated cases shall be referred to nearest tertiary health care facility with a referral card. Patients suffering from lymphomas and leukaemias shall be referred to tertiary care centres (TCC) for Chemotherapy as blood bank facilities and required human resources are available there.

H. Health promotion

Apart from clinical services district hospital shall be involved in promotion of healthy lifestyle through health education and counselling to the patients and their attendants regarding

- increased intake of healthy foods
- increased physical activity through sports,
  exercise
- avoidance of tobacco and alcohol;
- stress management
- warning signs of cancer etc

- **Training**

District Hospital shall impart training to the health personnel of Community Health Centre as per guidelines issued by National NCD Cell.

- **Data recording and reporting**

Data shall be collected in prescribed formats and monthly report shall be sent to the District NCD Unit of the programme

K. Human Resources at District Hospital

Following additional staff will be recruited on contract basis by the State Government to manage NCD clinic and to provide acute and chronic care services.

- Doctor (specialist in Diabetology/Cardiology/M.D Physician)
- Medical Oncologist
- Cyto-pathologist
- Cytopathology Technician
- Nurses (4): 2 for Day Care, one for Cardiac Care Unit, one for O.P.D
- Physiotherapist
- Counsellor
- Data Entry Operator
- Care coordinator

Results and discussion

Gap analysis

A comparative was drawn to bring out the gaps between the operational guidelines proposed by government and the status of implementation in district hospital junagadh.

Operational guidelines proposed	Status of implementation in General Hospital, Junagadh
Packages of services 1) Linkages of District Hospitals to private laboratories and NGOs. 2) district will be linked to tertiary cancer care health facilities for providing comprehensive care.	1) Not done 2) Not done
District hospital 1. Early diagnosis of diabetes, CVDs, Stroke and Cancer 2. Investigations: Blood Sugar, lipid profile, Kidney Function Test (KFT),Liver Function Test (LFT), ECG, Ultrasound, X ray, colonoscopy , mammography etc. (if not available, will be outsourced) 3. Medical management of cases (out patient , inpatient and intensive Care) 4. Follow up and care of bed ridden cases 5. Day care facility 6. Referral of difficult cases to higher health care facility 7. Health promotion for behavior change	1) available 2) available 3) available 4) Not implemented 5) Only for dialysis 6) Cases are referred to tertiary level for the services which are not available at District Hospital. 7) Counselors help patients for behavior change for health life style.
NCD Clinic Cardiac Care Unit Cancer Care Facility	Present and functional Present and functional Not present (under process)
NPCDCS would operate through NCD cells under the programme constituted at State and District levels and also maintain separate bank accounts at each level	Applicable and implemented
At the district level all programme societies have been merged into the District Health Society (DHS).	DHS is present and functional

District Health society will monitor the utilization of funds and submit quarterly the financial management report (FMR) of the programme to State Health Society.	Now changed to monthly basis and is carried out regularly.
<u>Technical Resource Groups</u> To provide technical guidance, advice and review the progress of the programme for enhancing the quality of implementation of NPCDCS, two Technical Resource Groups (TRG) have been constituted, one for cancer component and other for Diabetes, Cardiovascular Diseases and Stroke with following term of references (TORs).	Task force committee framed but not yet functional.
Composition: District NCD Cell will be supported by following contractual staff: 1. District Programme Officer 2. Programme Assistant 3. Finance cum Logistics Officer 4. Data Entry Operator	1) position sanctioned and filled 2) position sanctioned and filled 3) position sanctioned and filled 4) position sanctioned and filled
Role and responsibilities of the District NCD Cell 1. Preparation of District action plan for implementation of NPCDCS strategies. 2. Maintain and update district database of NCD diseases including cancer, diabetes, cardiovascular disease and stroke. 3. Conduct sub-district/ CHC level trainings for capacity building 4. Engage contractual personnel sanctioned for various facilities in the district 5. Maintain fund flow and submit Utilization Certificates 6. Maintaining District level data on physical, financial, epidemiological progress 7. Convergence with NRHM activities; and 8. convergence with the other related departments in the States/ District 9. Ensure availability of palliative and rehabilitative services including oral morphine	1) Not yet started 2) Yes databases of NCD diseases including diabetes, cardiovascular disease and stroke are maintained and updated. Cancer disease is yet to be covered at District hospital. 3) Training at frequent intervals and as per need basis is carried out. 4) Various sanctioned positions are filled through contractual personnel eligible for the posts. 5) Fund flow is documented and is submitted for utilization certificates. 6) District level data are maintained on physical, financial, and epidemiological progress. 7) Convergence with NRHM activities. 8) Convergence with other departments in states/ districts. 9) Palliative and rehabilitative services are not available. Process for setting up the same is ongoing.
District shall identify a district hospital to be strengthened under NPCDCS for providing NCD services.	Yes civil hospital junagadh is identified as DH under NPCDCS

hospital shall have an ICU and basic laboratory facilities available attached to it.	Available
A‘NCD clinic’ will be established at the identified district hospital to provide emergency care and management of cancer, diabetes, hypertension and acute cardiovascular diseases	Apart from covering cancer, all other diseases are covered.
The clinic shall run on all working days of the week.	Applicable and is implemented.
ICU of the district hospital will be upgraded/ strengthened with a cardiac care unit (2-4 beds) with ventilator and other necessary equipments	5 bedded fully functional ICU is available.
Opportunistic screening- screen persons above the age of 30 years for diabetes, hypertension, cardiovascular diseases etc.	Conducted by simple clinical examination comprising of relevant questions and easily conducted physical measurements (such as history of tobacco consumption and measurement of blood pressure, blood sugar estimation etc.)
District NCD clinic shall also screen women of the age group 30-69 years approaching to the hospital for early detection of cervix cancer and breast cancer.	Screening is carried out. Services for cancer detection are not available at DH and thus referrals are made to higher level
District hospital would be assisted to purchase the required equipments like colposcope and mammography etc.	Applicable (Mammography machine procured but to be installed.)
Detailed investigation	Suspected patients are investigated at laboratories.
Laboratory services at district hospital will be strengthened to provide necessary investigations like Cardiac Enzymes, Lipid Profile Coagulation parameters, ECG, ECHO, CT Scan, MRI and other laboratory investigations.	For the services not available at district hospital referrals are made to higher level.
Outsourcing of certain laboratory investigations	Not available
Out-patient and In-patient Care	Available
In case of Cancer support shall be provided for common chemotherapy drugs to treat about 100 cases, from the poor category only.	Not available
Day Care Chemotherapy Facility	Not available
Home Based Palliative Care	Not available

Referral & Transport facility to serious patients. 1) Complicated cases shall be referred to nearest tertiary health care facility with a referral card. 2) District hospital shall make provision for transporting the serious patients to the hospital or at nearest tertiary level facility.	1) Available 2) Available
Health promotion promotion of healthy lifestyle through health education and counseling to the patients and their attendants	Available
Training District Hospital shall impart training to the health personnel of Community Health Centre as per guidelines issued by National NCD Cell.	Applicable training are carried out as per need basis.
Data recording and reporting Data shall be collected in prescribed formats and monthly report shall be sent to the District NCD Unit of the programme	Applicable
Human Resources at District Hospital Following additional staff will be recruited on contract basis by the State Government to manage NCD clinic and to provide acute and chronic care services. a. Doctor (specialist in Diabetology/Cardiology/M.D Physician) b. Medical Oncologist c. Cyto-pathologist d. Cytopathology Technician e. Nurses (4): 2 for Day Care, one for Cardiac Care Unit, one for O.P.D f. Physiotherapist g. Counselor h. Data Entry Operator i. Care coordinator	A) Available B) Not available C) Not available D) Not available E) Available F) Available G) Available H) Available I) Available

Table 3: comparative analysis

Conclusions and Recommendations

While India is simultaneously experiencing varied disease burden due to old and new infections, nutritional deficiencies, chronic diseases, and injuries, individual interventions for clinical care are unlikely to be affordable on a large scale. Although community empowerment for health promotion is essential, health education alone would be insufficient in the absence of supportive environmental changes.

It can be strongly recommended that to reduce the gaps and to increase the effectiveness of the programme, monitoring and evaluation (M and E) are important components and are critical for strategic planning.

Further it is suggested that Monitoring and Evaluation of program requires identification of indicators that measure inputs, process, outputs, and outcomes.

Input indicators measure resources devoted to a particular program or intervention. Process indicators measure ways in which program services and goods are provided. Output indicators measure the quantity of goods and services produced and the efficiency of production (i.e., number of people served). Outcome indicators measure the broader results achieved through the provision of goods and services. Impact indicators are the long-term population level changes in diseases and their outcomes.

In the context of NCDs, some of the indicators can be define as given in figure.

Indicators	Input	Process	Output	Outcome	Impact
Definition	Measure resources (human and financial) devoted to a particular programme	Measure ways in which programme services are provided	Measure the quantity of services provided by the programme indicating efficiency	Measure the broader results achieved through the provision of services	Measure the change in disease-related mortality and morbidity
Description	Manpower, material, and financial resources	Activities to be carried out	Immediate, short-term, tangible products or services (access/reach/ quality and equity)	Changes in the health system as a result of the outputs or intermediate outcomes at population level	Long-term changes in the health of a population
NCD programmes specific indicators (merely indicative)	% of health facilities with trained human resource % of health facilities with functional equipment	% of eligible people screened % of people with diagnosed disease put on treatment	% of eligible population which has been screened/tested % of prevalent cases who are diagnosed in last 1 year	% of newly diagnosed cases by stages of cancer or without complications in HT/DM Median survival period of patients with different diseases	Decrease in premature mortality due to NCDs Decrease in prevalence of major NCDs
Frequency	Monthly/quarterly	Monthly/quarterly	Annually	Biennially	Five to ten yearly
Level	CHC or block level	CHC or block level	District level	State, regional, national level	State, regional, national level
Source of information	Routine health reporting system Reports from supervisory visits	Routine health reporting system Reports from supervisory visits	Routine health reporting system Reports from supervisory visits	Population surveys (e.g., district level household survey) Special surveys like that for NCD risk factor	Census , National Family Health Surveys

Figure 3 NCD indicators

The frequency of collecting information for these indicators will vary depending on the level of use and type of indicator as well as time interval over which we expect to see a change in that parameter.

For effective monitoring and evaluation of NPCDCS, the way forward is

- To evolve sustainable systems for surveillance,
- periodic review at state and national level for monitoring progress, and
- Establish external review mechanisms.

On a broader scale, Monitoring and evaluation require complex set of co-ordinated action, responsibility for which has to be taken up by the NCD Cell within the Ministries of Health at state and national level.

Integrated population-based surveys with existing disease and behaviour surveillance could be undertaken by National Centre for Disease Control. The national NCD cell should compile all these information into a meaningful policy brief so that appropriate programmatic interventions can be identified. The launch of a national program to tackle the burden of NCDs is just the beginning, and the final success of the program will depend on how effectively it is being monitored and evaluated.

Introduction for Quality Improvement Work

A 5S (Five S) program is usually a part of, and the key component of establishing a visual workplace and are both a part of kaizen - a system of continual improvement - which is a component of lean manufacturing.

There are five primary 5S phases: They are known as Sort, Straighten, Shine, Standardize and Sustain.

The 5S program focuses on:

- having visual order
- organization
- cleanliness
- standardization

The results which can be expected from a 5S program are: improved profitability, efficiency, service and safety and improved quality standards.

This describes how to organize a work space for efficiency and effectiveness by identifying and storing the items used, maintaining the area and items, and sustaining the new order. The decision-making process usually comes from a dialogue about standardization, which builds understanding among employees of how they should do the work.

Sorting (Seiri)

Eliminate all unnecessary tools, parts. Go through all tools, materials, and so forth in the plant and work area. Keep only essential items and eliminate what is not required,

prioritizing things per requirements and keeping them in easily-accessible places. Everything else is stored or discarded.

Straightening or Setting in Order to Flow or Streamlining (Seiton)

Arrange the work, workers, equipment, parts, and instructions in such a way that the work flows free of waste through the value added tasks with a division of labor necessary to meet demand. This is by far the most misunderstood and incorrectly applied S and has been responsible for many lean transformations failing to produce the benefits expected. When applied correctly with flow established this step eliminates the majority of the non-value-added time and allows the rest of the zero defect philosophy to be enabled. Put simply, until you have an orderly flow, you cannot have an orderly flow of problems to solve and the notion of zero defects is impossible..

Shining (Seiso)

Clean the workspace and all equipment, and keep it clean, tidy and organized. At the end of each shift, clean the work area and be sure everything is restored to its place. This step ensures that the workstation is ready for the next user and that order is sustained.

Standardize (Seiketsu)

Ensure uniform procedures and setups throughout the operation to promote interchangeability.

Sustain (Shitsuke)

Make it a way of life. This means commitment. Ensure disciplined adherence to rules and procedures of 5 S to prevent backsliding.

Rationale of study

The 5S culture is a commitment to bring order to work, and reduce wastefulness found in operations and management. 5S is more than a process or system. To really make it work, it has to be adopted by staff in all departments as a culture or mindset. It is on-going, and everyone must participate.

In healthcare this translates readily to organized storage of medical supplies, making them easily accessible by healthcare staff where and when they need them. When it works, it can dramatically affect all of those deeply interwoven issues that have a huge impact on a healthcare organization, such as:

- Reduced Waste (time, supplies, re-admissions, medical error corrections)
- Reduced Clutter
- Improved Patient Satisfaction Scores (cleaner, quieter facilities rate higher)
- Improved Medical Outcomes
- Improved Financial Outcomes (improved utilization of resources, greatly reduced waste of supplies)

Hospitals that operate with less waste are financially more profitable. However, there are numerous occurrences of human error (the primary source of waste in healthcare) every year in every facility. Rarely does waste, in the form of a medical error, get attributed to poor or improper training.

5S Lean brings order and organization to the natural chaos of healthcare, thus reducing the incidence of error. Waste and clutter have been proven to lead to human error in healthcare. Reducing waste and clutter, will eventually reduce the incidence of human error.

Correcting or treating the human error creates unplanned costs. These are the costs that create the financial challenges. The financial tolls are obvious; if a hospital harms a patient, they must fix that situation. The fix becomes an unplanned expense. So it can be said that the correlation between medical errors and hospital acquired infections have a direct impact on financial results.

A successful 5S Lean Healthcare culture, one where everyone on staff buys in to the need to continuously sort, set in order, shine, standardize, and sustain, will clearly reduce the clutter and un-cleanliness that causes human error in medical care.

As a result, not only do fewer medical errors or healthcare acquired conditions arise that strain the operational budget, quality of care improves (by definition of there being fewer errors), and patient safety increases in proportion as well. Better care is a sound investment.

Objective

General objective :-

To implement "5s" in the hospital as a tool to improve the quality standards as a part CQI.

Specific objective:-

- To identify the fall outs as per 5s system of scoring.
- To implement the identified factors to increase compliance with 5s standards
- To increase the percentage improvement of 5s scores as compared to last audit.

Methodology

Study design

Interventional study

Study area

Civil hospital, Junagadh, Gujarat

A thorough study of last audit report of 5s was done in order to identify the gaps as per the 5s standards. The short comings as per the last audit report were

- 5 s labels to be displayed in every department.
- Use of plastic jars consumes more time for drugs retrievals.
- Listing of medicine according to their expiry dates should be done in order to reduce wastage.
- Maintenance of crash cart checklist should be regularized
- Maintenance of customized cleaning checklist should be regularized
- Red tag list should be created and a separate red tag area should also be created in every department in order to keep the unused items
- Labeling of all the materials and items present in and around the department should be done.
- cupboards should be labeled
- Parking-marking should be done in order to identify change in position of any item/ furniture if any.
- Zone map should be made and displayed outside each department for guidance to patients and outsiders.
- BMW banners should be displayed and bins to be arranged accordingly.
- Separate cleaning station is to be created in every department.

Various interventions were planned and listed down to improve the quality standards. These interventions were further implemented in various departments of the hospital as and where applicable to reduce the suggested fall outs.

Interventions planned and implemented were as follows:-

- Use of plastic boxes instead of plastic jars
- Listing of medicine according to their expiry dates
- Maintenance of crash cart checklist
- Maintenance of customized cleaning checklist
- Red tag list should be created and a separate red tag area should also be created in every department in order to keep the unused items
- Labeling of all the materials and items present in and around the department
- Cupboards should be labeled
- Parking-marking to be done
- Zone map to be made and displayed outside each department
- BMW banners to be displayed and bins to be arranged accordingly
- Separate cleaning station is to be created in every department
- 5 s labels to be displayed in every department

Aim for implementing these interventions was to improve 5s scores as compared to the last audit

Data analysis and interpretation

Scoring parameters for 5s are

Audit Parameters for CQI		
Client : **Dept:** **Location:** **Date :** **Assessed by:** **Process owner:**		
Three Ps	**Initiative**	**Weight**
Physical Workplace Improvement	Five S	40
	Visual Control	25
Process Improvement	Continuous Process Improvement	15
People Involvement	Involvement in Training & implementation	20
	Total Score	**100**

Table 4 marking parameters for audit

Previous audit (2013) score summary

	Audit Scores – Summary						
	Parameters	**Five S**	**Visual Control / Visual Management**	**Process Improvement**	**People Involvement**	**Total CQI score**	**Total 5S Score**
	Department / Max Possible	**5**	**5**	**5**	**5**	**100.0**	**100**
1	Gynaec & PNC Ward	1.0	1.0	1.0	2.0	24.0	20.0
2	Emergency Ward & ICCU	2.0	1.5	1.5	1.5	34.0	40.0
3	Central Medical Stores	2.0	2.0	1.0	2.0	37.0	40.0
4	Medical Wards Female 1 & 2	2.0	1.5	1.5	2.0	36.0	40.0
5	Surgical Ward	2.0	1.0	1.0	2.0	32.0	40.0
6	Dispensary. Dressing Room & Injection Room	2.0	2.0	1.0	2.0	37.0	40.0
7	Orthopaedics Ward	2.0	1.0	1.0	1.0	28.0	40.0
8	General OT / Orthopaedics OT	2.0	2.0	2.0	1.0	36.0	40.0
9	Pathology Laboratory	1.5	2.0	1.0	2.0	33.0	30.0
10	Trauma Room	2.0	2.0	1.5	2.0	38.5	40.0

Table 5 audit scores for year 2013

Score summary of current year audit (2014)

	Audit Scores - Summary						
	Parameters	**Five S**	**Visual Control / Visual Management**	**Process Improvement**	**People Involvement**	**Total CQI score**	**Total 5S Score**
	Department ⎪Max Possible	**5**	**5**	**5**	**5**	**100.0**	**100**
1	Gynaec & PNC Ward	3.0	3.0	0.0	2.0	47.0	60.0
2	Emergency Ward & ICCU	3.0	2.0	0.0	2.0	42.0	60.0
3	Central Medical Stores	3.0	2.0	0.0	3.5	48.0	60.0
4	Medical Wards Female/ Male 1 & 2	3.0	2.0	0.0	2.0	42.0	60.0
5	Surgical Ward	2.5	2.0	0.0	2.5	40.0	50.0
6	Dispensary. Dressing Room & Injection Room	3.5	2.5	0.0	3.0	52.5	70.0
7	Orthopaedics Ward	2.0	1.5	0.0	1.5	29.5	40.0
8	General OT / Orthopaedics OT	3.0	2.0	0.0	3.0	46.0	60.0
9	Pathology Laboratory	3.0	2.5	0.0	3.5	50.5	60.0
10	Trauma Room	3.0	2.5	0.0	3.5	50.5	60.0

Table 6 audit score of year 2014

Scores of previous audit (2013) and current audit (2014) were quantitatively analyzed to find the percentage improvement before and after implementation of the listed interventions.

Percentage improved= [current audit score- last audit score] *100

Last audit score

Results and discussion

Percentage improved in various departments

	Departments	**percentage improvement CQI**	**percentage improvement in 5s scores**
1	Gynaec & PNC Ward	95.83	200
2	Emergency Ward & ICCU	23.53	50
3	Central Medical Stores	29.73	50
4	Medical Wards Female/ Male 1 & 2	16.67	50
5	Surgical Ward	25.00	25
6	Dispensary. Dressing Room & Injection Room	41.89	75
7	Orthopaedics Ward	5.36	0
8	General OT / Orthopaedics OT	27.78	50
9	Pathology Laboratory	53.03	100
10	Trauma Room	31.17	50

Table 7 percentage improvement

There has been an overall improvement in 5s scores and CQI scores. Departments like gynaec ward and pathology labs have improved their scores to 200 and 100 percent respectively. Orthopaedic ward showed no improvement in 5s scores.

Graphs showing ward wise improvement

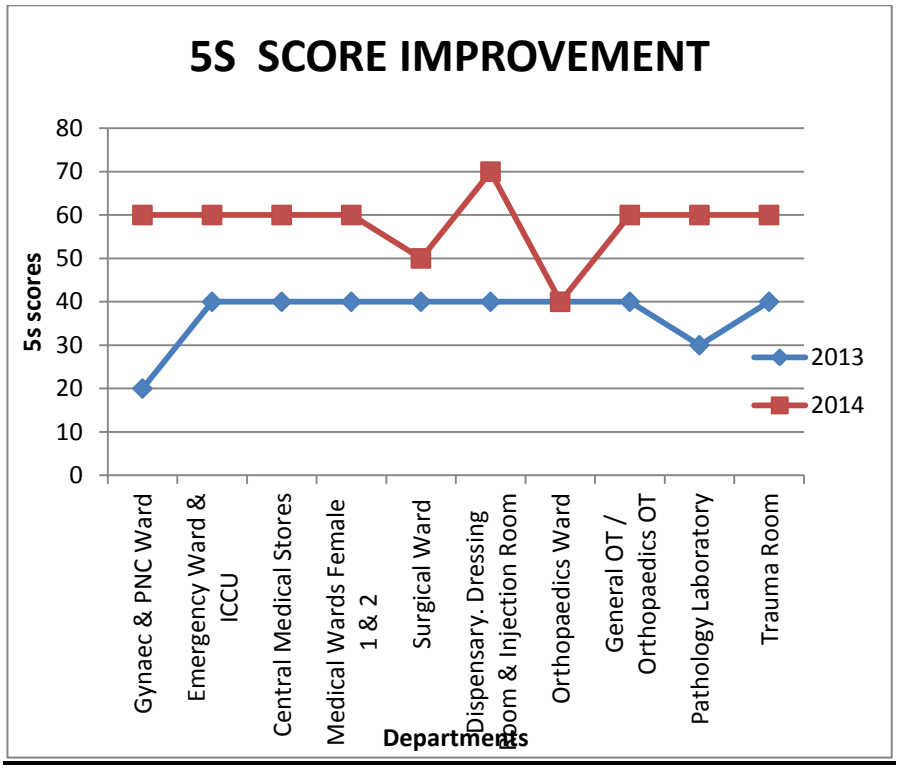

Figure 4 ward wise improvement in 5s scores

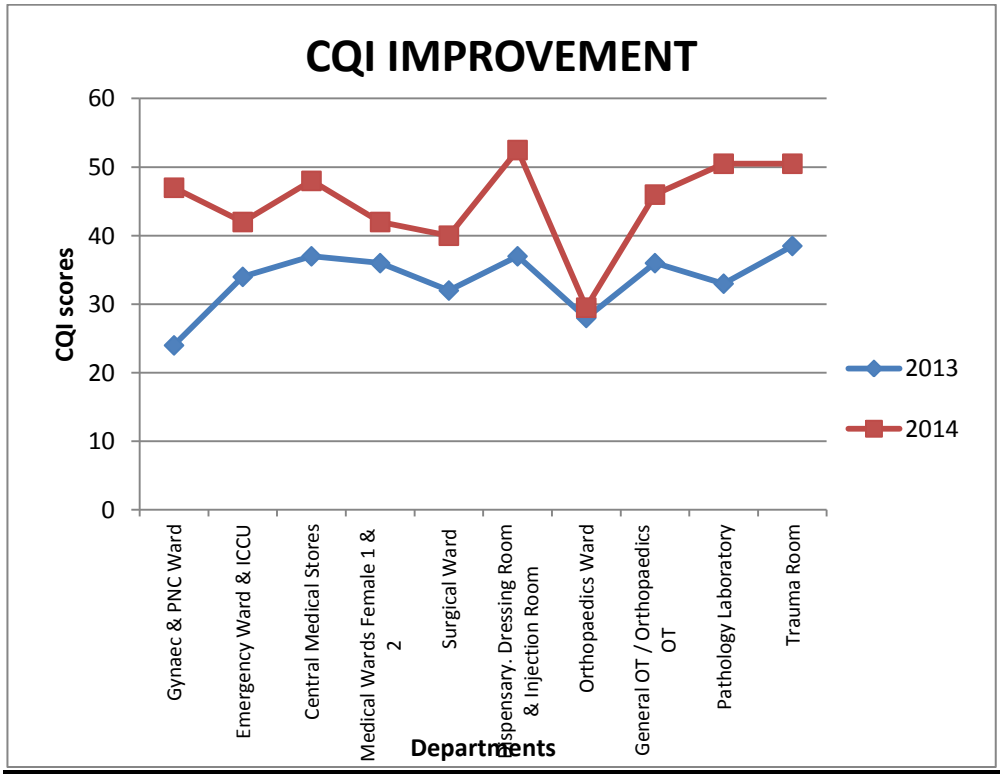

Figure 5 ward wise improvement in CQI scores

Conclusion and recommendations

Team work and support of staff for 5s implementation is must. The benefits of 5s implementation can be enjoyed by both staffs and patients.

Implementing 5s in hospital not only helps improve visual indicators but also improves the quality of care being delivered to patients.

Other benefits involved are

- Reduced Waste (time, supplies, re-admissions, medical error corrections)
- Reduced Clutter
- Improved Patient Satisfaction Scores (cleaner, quieter facilities rate higher)
- Improved Medical Outcomes
- Improved Financial Outcomes (improved utilization of resources, greatly reduced waste of supplies)

Suggestions for improvements

- Set up steering committee to drive CQI – chaired by CDMO.
- Weekly / Monthly / Quarterly review by Steering committee must be done in order to standardize and sustain the implemented 5s.
- Carrot & Stick Policy - Motivate / Recognize top two / three best teams & Pull-up the Laggards.
- Arrange training on 5 S to doctors, clinical & non-clinical staff by those who were already being trained for the same.
- For sustenance of implemented 5s, internal audit team can be made.
- Frequent surprise internal audit should be conducted to keep the staff on toes for the same.

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