OUR FACILITIES

SOUTH DELHI

Max Super Speciality Hospital (East Block), Saket
(A unit of Devki Devi foundation)
2, Press Enclave Road, Saket, New Delhi-110 017,
Phone: +91-11-2651 5050

Max Super Speciality Hospital (West Block), Saket
1, Press Enclave Road, Saket, New Delhi-110 017,
Phone: 91-11-6611 5050

Max Smart Super Speciality Hospital, Saket
(A unit of Gujarmal Modi Hospital and Research Centre for Medical Sciences)
Mandir Marg, Press Enclave Road, Saket,
New Delhi- 110017
Phone: +91-11-7121 2121

Max Multi Speciality Centre, Panchsheel Park
N - 110, Panchsheel Park, New Delhi-110 017,
Phone: +91-11-4609 7200

EAST DELHI

Max Super Speciality Hospital, Patparganj
(A unit of Balaji Medical & Diagnostic Research Centre)
108 A, Indraprastha Extension, Patparganj,
New Delhi-110 092, Phone: +91-11-4303 3333

NORTH WEST DELHI

Max Super Speciality Hospital, Shalimar Bagh
FC – 50, C & D Block, Shalimar Bagh, New Delhi–110 088
Phone: +91-11-4978 2222, 6642 2222

Max Hospital, Pitampura
Near TV Tower, Pitampura, Wazirpur District Centre,
New Delhi-110 034, Phone: +91-11-4735 1844

NCR

Max Hospital, Gurgaon
(A unit of Alps Hospitals Ltd)
B - Block, Sushant Lok - I, Gurgaon-122 001,
Phone: +91-124-6623 000

Max Super Speciality Hospital, Vaishali
(A unit of Crosslay Remedies Ltd.)
W-3, Sector- 1, Vaishali, Ghaziabad – 201012, (U.P.)
Phone: +91-0120-4173 000, 4188 000

Max Multi Speciality Hospital, Noida
A-364, Sector 19, Noida-201 301,
Phone: +91-120-662 9999

Max Multi Speciality Hospital, Greater Noida
(A unit of Four Seasons Foundation)
Opposite NTPC, Near Crown Plaza, Surajpur,
Greater Noida - 201306 (U.P.)
Phone: +91-120-7161234, 9650045691

PUNJAB

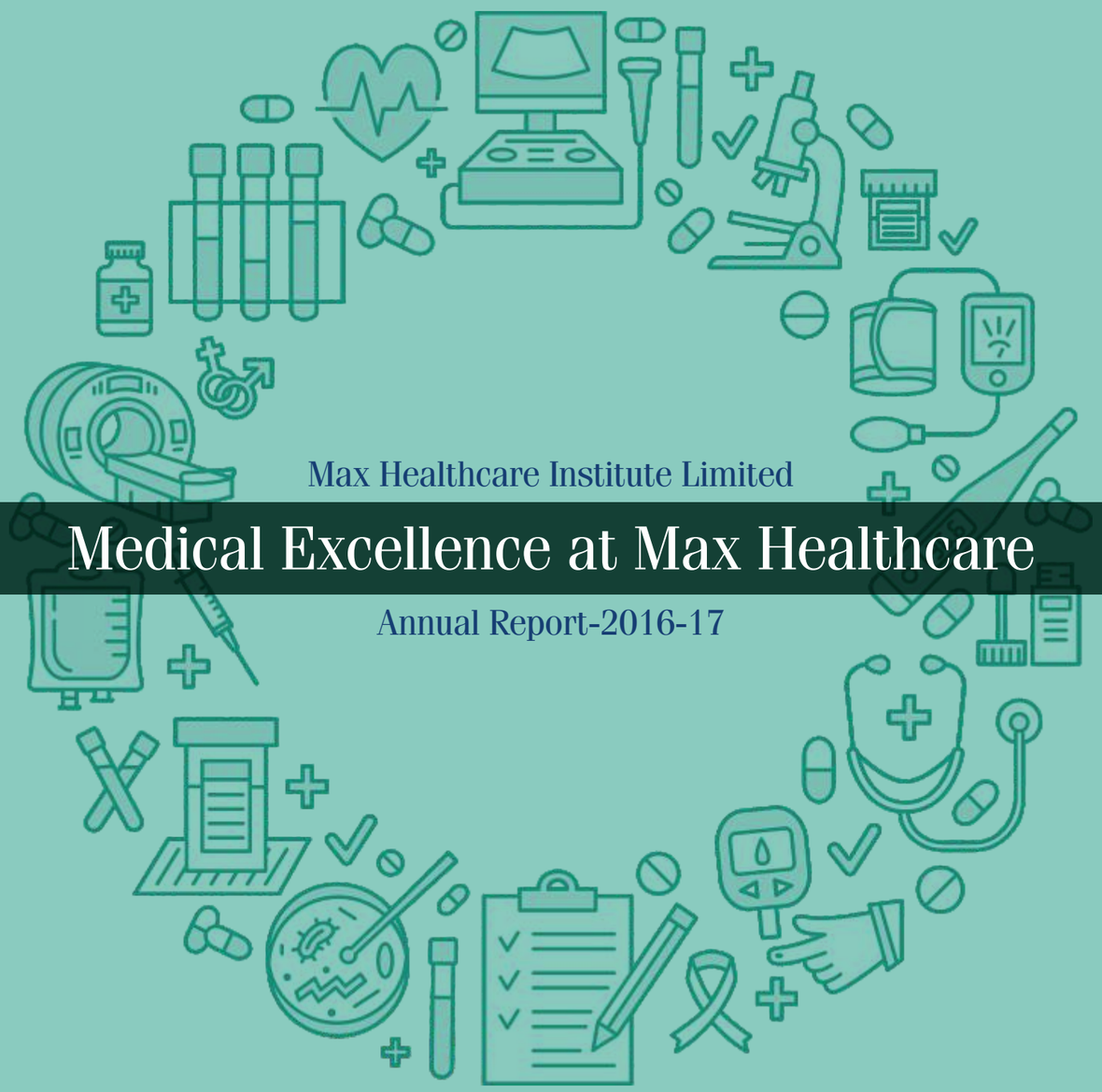
Max Super Speciality Hospital, Mohali
(A unit of Hometrail Estate Pvt. Ltd.)
Near Civil Hospital, Phase – 6, Mohali, Punjab–160055
Phone: +91 172 6652 000

Max Super Speciality Hospital, Bathinda
(A unit of Hometrail Buildtech Pvt. Ltd.)
NH – 64, Near District Civil Hospital, Mansa Road, Bathinda,
Punjab–151 001, Phone: +91–164-6601 000

UTTARAKHAND

Max Super Speciality Hospital, Dehradun
Near Indian Oil Petrol Pump, Malsi,
Mussoorie Diversion Road, Dehradun, Uttarakhand
Phone: +91-0135-6673 000

MAX HEALTHCARE
Care for life



Max Healthcare Institute Limited

Medical Excellence at Max Healthcare

Annual Report-2016-17

From the Desk of Anupriya Patel
Hon'ble Health Minister Govt of India

Dear All,

Max India's vision is to be the most admired company for health and life care needs of its customers, patients and their families. Our dedicated teams of doctors, nurses and paramedics at Max Healthcare (MHC) work around the clock to serve our patients and achieve this vision.

In the past year, MHC has implemented several initiatives to strengthen its unique Clinical Governance framework, Information Technology systems, Clinical Data and Analytical capabilities, Clinical teams, Clinical Research and Quality Monitoring tools and processes.

Let me highlight a few notable achievements that illustrate MHC's unrelenting focus on service excellence and positive clinical outcomes for the patients and families.

It was a proud moment for all of us when in February 2017, Max Super Specialty Hospital, Saket became the first hospital in MHC's network to be accredited by the Joint Commission International (JCI). JCI is the world's leading body for health care accreditation and is the author and evaluator of the most rigorous international standards in quality and patient safety.

We have significantly stepped up investment in building digital capabilities and upgraded our clinical data and analytical capabilities to improve speed and accuracy of clinical decision making. A few noteworthy examples are:

- MHC is the first Indian network to track all 4 Hospital Acquired Infections (HAIs) online and have achieved International benchmarks on these parameters
- We have commissioned RIS-PACS - an integrated digital management of imaging departments with archiving capability across the MHC network. This is the largest multi-site installation in India and will enable significant reduction in turnaround time, improve efficacy and reduce costs
- In partnership with Deakin University we have developed India's first predictive model for risk of readmission in Acute Myocardial Infarction (AMI).

In parallel, we are also strengthening clinical governance by adding new Focus Groups such as the Medico Legal Committee to address specific challenges and aid better collaboration amongst stakeholders.

Our continuous effort to take medical excellence to the next level adds credence to MHC's promise to its patients and their families – "Eager to get you home".

Congratulations to the MHC team for publication of the second edition of the report. It is reassuring to note that patient safety metrics are tracked closely and the organization has taken all possible measures to reduce the risk of adverse incidents. I am confident that we will take many more strides towards our relentless pursuit of the highest quality of care for our patients.

With Best Wishes,

Rahul Khosla
President, Max Group

From The Managing Director & CEO's Desk

Dear All,
Our vision at Max Healthcare has been to become an international class healthcare provider with a total service focus, by creating an institution committed to the highest standards of medical & service excellence, patient care, scientific knowledge, research and medical education. The publishing of the second edition of the Medical Excellence Report only reiterates our vision and our commitment to Patient Safety and Clinical Excellence.

The JCI accreditation that came in for Max Saket this year is testimony of our focus on continuously improving our standards of patient care and safety. Having received the Gold Standard of JCI Accreditation, the responsibility, of deliveringconsistent care in the best interest of our patients, grows stronger. It is our promise that we would educate them about their rights, their treatment plan, and provide them with a safe environment for their optimal and fast healing - a safe environment created by ensuring we practice our safety goals, monitor infection control and 'chase zero infections'. We became the first Indian network hospital to record HAIs online. While it is encouraging that the patient safety culture for this year has reported a pan-max score of 85% vs a 79% last FY, the goal is a tough one and we need to be persistent and committed to chasing zero infections. Only then will we be able to deliver our promise of 'Eager to get you home' to our patients. Our assurance to our patients is that we will collaborate and integrate within and across disciplines to provide the best course of treatment. It is quite heartening to see MDT implemented and being monitored across specialities of critical care, cardiac sciences, neurosciences and I am confident that we will be able to take this across multiple others this year.

Healthcare, as we know of today is set to change. While on one end, the disease types and patterns are changing, on the other end, the amount of information available for each patient is also increasing. Sensors, health bands, remote monitors and genomics – data is only in abundance. Analytics today can not only help us predict disease outbreaks much in advance, personalized treatment planning and prior simulation can ensure tailored care and improved patient outcomes. At Max Healthcare, the well-piloted Ward Monitoring system, Newborn Screening tracking and vaccination management solution and E-prescription of OPD Initial assessment puts us amongst the frontrunners in adopting technology to achieve patient safety.

I extend my wishes to the team and sincerely hope that the vision we are committed to, our journey and steps towards it become stronger and better by each passing day.

With best wishes

Mr. Rajit Mehta
Managing Director & CEO
Max Healthcare

From The Clinical Director's Desk

Dear Friends

It gives me great pleasure to once again communicate with you through our 2nd Annual Medical Excellence Report of Max Healthcare 2016 – 17.

At Max Healthcare, we strongly believe in addressing critical issues related to access, efficiency, quality and safety of healthcare services that can impact patients and their families. "Patient safety" which has taken up the healthcare industry globally by storm is our prime concern. The successful implementation of our "Medical Excellence Model" acts as a strong anchor in helping us address policies and practices that aim to reduce the risk of harm to patients. Our unflinching endeavor is to provide the highest quality of patient centered care, clinical outcomes and safety to the patients we serve.

This 2nd Annual Medical Excellence Report provides information on our achievements, methodologies and journey towards Clinical Excellence & Patient Care. We will continue to be a patient centric organization and our initiatives must always provide tangible value to the patient.

I would like to take this opportunity to thank each and every member of the organization and acknowledge their hard work because of which we are here today.

Hope you enjoy reading the report.

With best wishes

Dr. Sandeep Budhiraja
Clinical Director
Max Healthcare

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About Max Healthcare

Max Healthcare is the country's leading provider of comprehensive, seamless and integrated world class healthcare services. With a network of 14 hospitals, treatment services are offered across 29 specialties. The Max network includes state-of-the-art tertiary care hospitals in Saket, Patparganj, Shalimar Bagh, Vaishali, Mohali, Bathinda and Dehradun, secondary care hospitals at Gurgaon, Noida and Greater Noida and a specialty centre at Pitampura, Panchsheel Park & Lajpat Nagar. There are 2300+ leading doctors many with international level expertise who are committed to provide highest standards of medical excellence at a fraction of international costs. Our JCI, NABH and ISO accredited hospital(s) offer best in class services to our patients.

At Max Healthcare, the level of service and eye for detailing in everything that is done truly sets us apart and makes us the care provider of choice for millions of patients. Quality, medical & service excellence are the pillars of this institution.

The organization serves as a role model in several areas of clinical care, sought after by aspiring doctors, nurses and paramedical staff as a high quality organization to work for. Reaching here has not been an easy task but has been achieved by the unflinching commitment and support given by our leadership team (both at the Board & operating level). Our leadership has provided consistent strategic guidance, oversight, and has inspired the organization to meet and exceed world class benchmarks. At the hospitals, all this could have only been achieved by the passion and persevering efforts by our staff. And most importantly, the trust reposed in us by our patients and their families is testimony of our sincerity, devotion and commitment. Our motto at Max Healthcare is "Eager to get you (patient) home".

For more information, visit us at www.maxhealthcare.in

Clinical Directorate

The mission of the Clinical Directorate is to establish MHC's medical facilities, clinical expertise, technology, safety standards, and medical research at the highest level, comparable to the best known institutions of the globe.

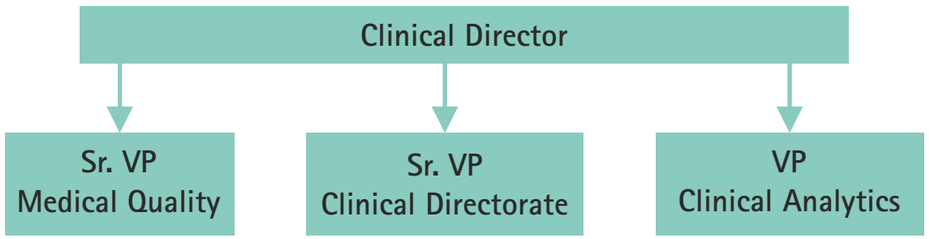
Our functional priorities are summarised below:

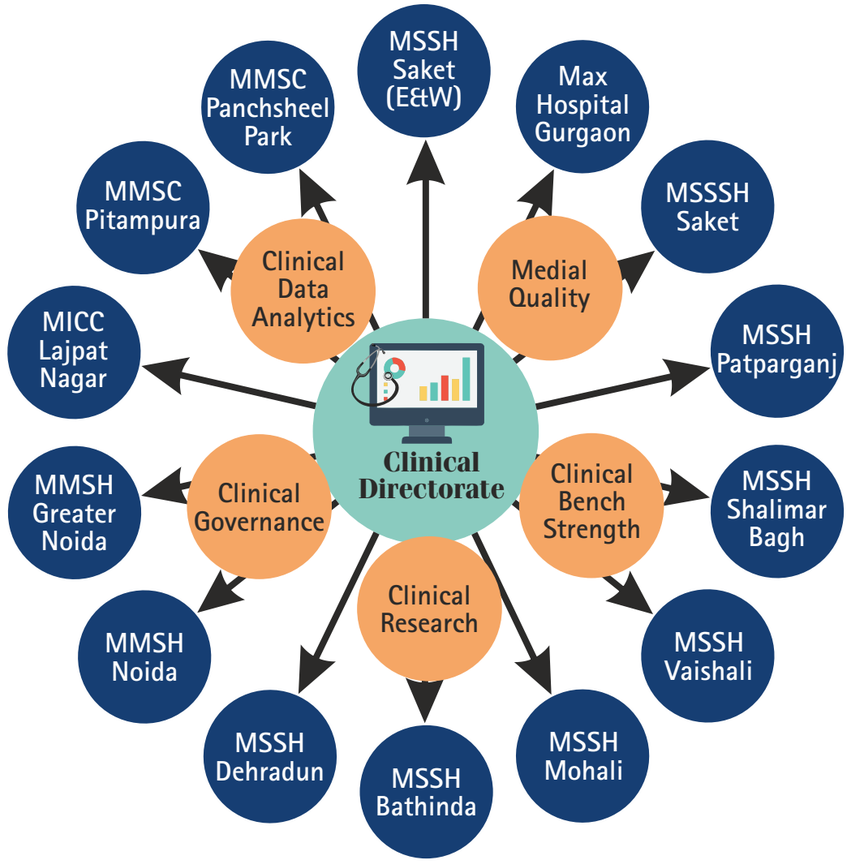
Clinical Governance	• To provide an environment for Clinicians to practice ethical medicine
Medical Quality & Safety	• To establish MHC clinical and safety outcomes at the highest level, comparable to the best known institutions of the globe
Clinical Bench Strength	• To attract the best clinical talent • To provide seamless scare to patients • To build and promote new clinical skills
Clinical Data Analytics	• To support clinicians to practice evidence based medicine and to do predictive analytics using EHR
Clinical Research	• To build MHC into an academic centre of repute

Clinical Directorate Operation & Organization

The Clinical Director heads the office of the Clinical Directorate. He is an integral part of the Executive Leadership Team. The office of Clinical Directorate encompasses a team of senior leaders (functional heads) who are in charge of the various functions of the Directorate. The functional heads at the central level are supported by their teams who are positioned at both the regional and unit level(s).

The functions are all placed at a corporate (central) level, however, they are all executed working closely with the operating teams of the individual Max Hospital network. This is ensured so that there is effective implementation on ground which helps in providing uniformity & strengthening the Max Healthcare's brand of Medical Excellence.





Clinical Governance

Key Committees and Bodies

Two main committees that perform an important role in clinical governance are GMAC (Group Medical Advisory Council) which is the highest apex body at a Pan Max level & HMEC (Hospital Medical Executive Council) at a unit level. Clinical Directorate ensures regular conduct of HMEC meetings at each unit. Each unit has chosen a frequency of the meeting as weekly, fortnightly or monthly as per their need. The minutes of these meetings are reviewed by the Clinical Directorate at a regular basis and closure of all items is ensured.

GMAC (Group Medical Advisory Council)

This committee supports Executive Committee (EC), units and functions and other forums which might require inputs, participation from the clinician community. The composition consists of CEO, Clinical Director, Senior Clinicians of Max Healthcare, other invitees at the discretion of the CEO.

Its key functions are:

- Define key clinical policies e.g., clinical protocols, incident reporting etc.
- Review of quality parameters.
- Introduction of new clinical specialties/new technologies.
- Best practice sharing, exploring potential partnerships, researchers and other medical facilities.

HMEC (Hospital Medical Executive Council)

It supports unit GM, functions and other forums which might require inputs, participation and sponsorship from the clinician community at unit level. The composition consist of Medical Advisor (Chairman), General Manager (Member Secretary), Medical Superintendents, 5 to 7 senior clinicians of the hospital.

Functions:

- Monitor implementation of key clinical policies at the unit level.
- Review of quality parameters for each department
- Introduction of new clinical specialties/new technologies as an advisory input to the GM.
- To discuss and resolve issues related to Physician's affairs at the Unit level .

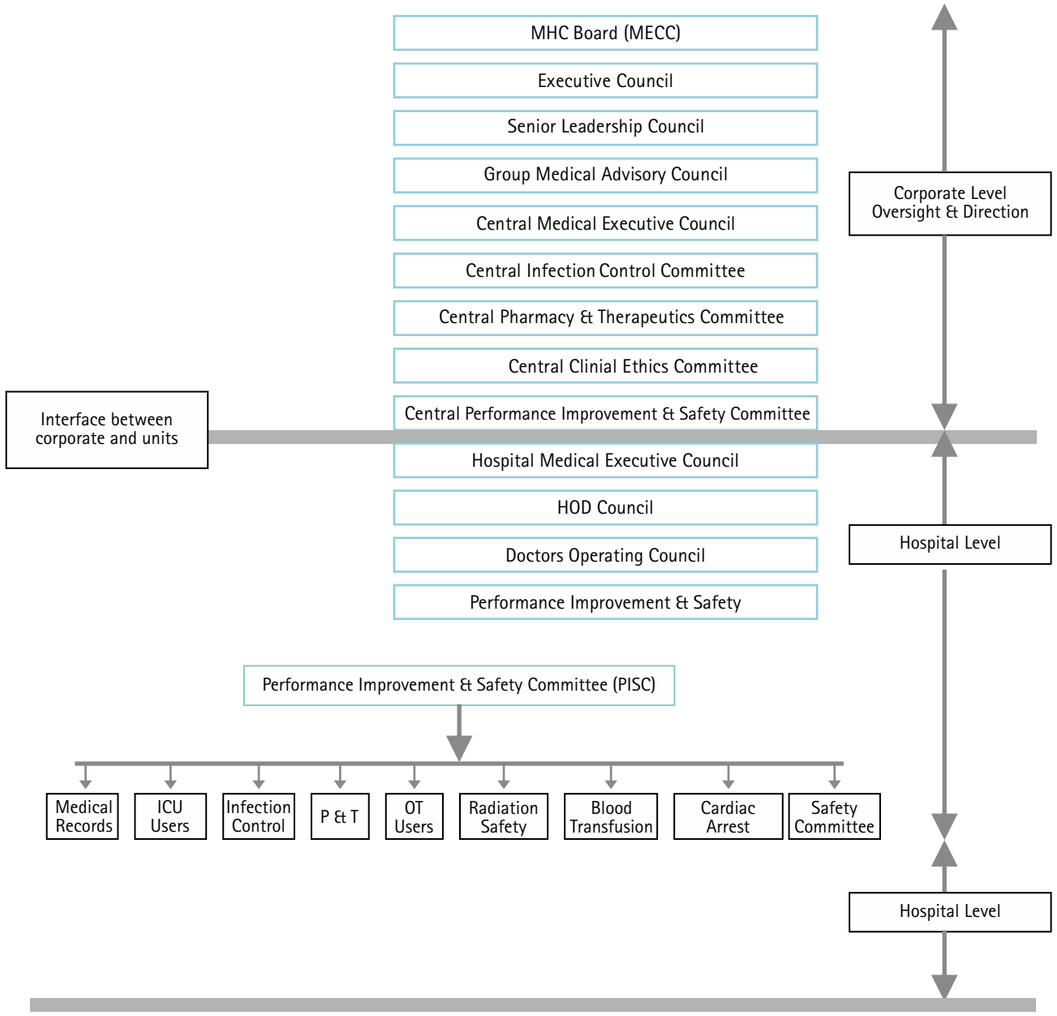
Committees that oversee Quality

Our Unique Governance Model helps us bring alignment and ensure engagement for quality at all levels. At the board level, there is a Medical Excellence & Compliance Committee (MECC) chaired by the Non Executive Director of the Board. Members include other senior directors of the board and executive management team of Max Healthcare. The MECC provides oversight and strategic guidance to the executive team for Medical Excellence and risk management. It meets quarterly and reviews all aspects of the functions including key clinical performance indicators.

At the Clinical Directorate level, some central committees meet periodically, to ensure monitoring and execution of the organizations clinical strategy. They come under the framework of "Clinical Governance". These committees include Central Medical Executive Council (CMEC), Central Emergency Service Committee (CESC), Medical Writer's Committee, Max Neurosciences Forum (MNF), Clinical Ethics Committee (CEC), Medical Advisor's Forum with Clinical Directorate, Medical Superintendant's Forum with Clinical Directorate, Medicolegal Committee, Central Performance Improvement & Safety Committee, Central Infection Control Committee & Central Mortality Committee

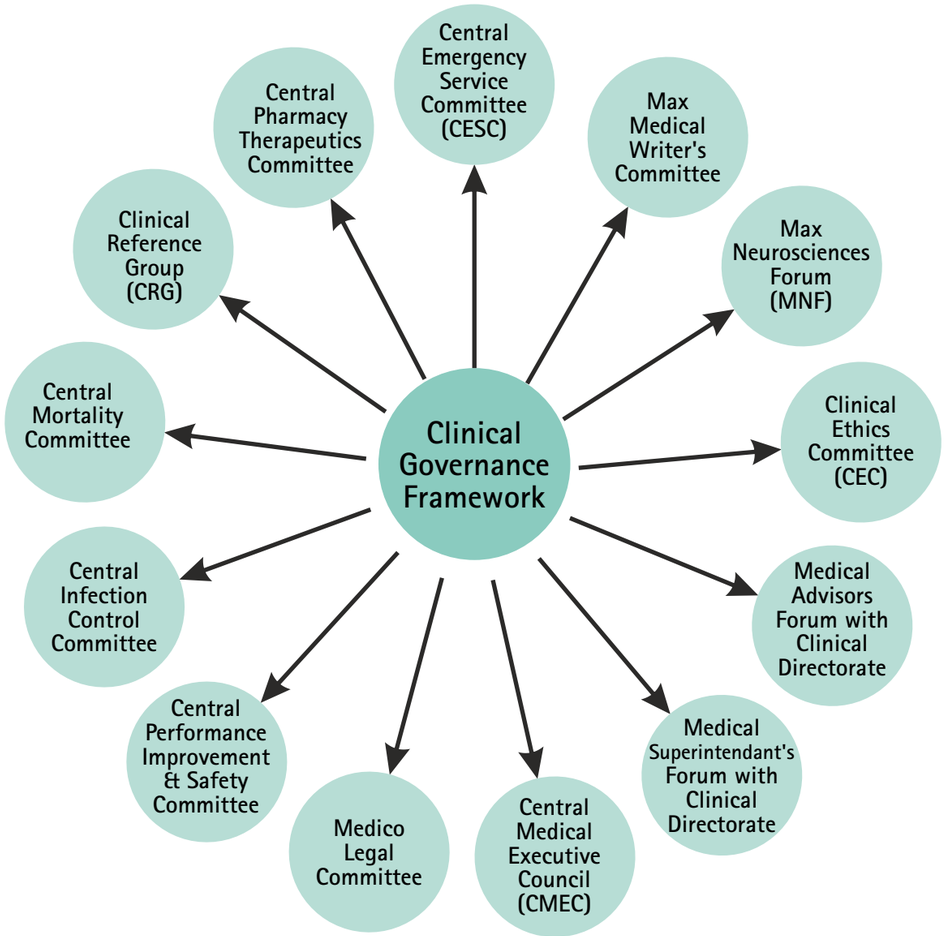
In addition, Monthly Business Reviews (MBR's) are held, in which key performance areas of the Medical Quality Program of each hospital are presented and discussed in detail by the Executive committee. Various other executive committees also monitor and provide direction for Medical Quality initiatives.

The clinical committees at individual hospitals are chaired by senior clinicians. The members include a mix of clinical Heads of Department and Hospital Management. They provide a system to monitor, evaluate and improve care for the patients so as to ensure high standards of quality and safety.



Clinical Governance Framework

The Clinical Director's office plays an important role in establishing the clinical governance framework. Thirteen committees have been formed which take care of specific functions at an organization wide level chaired by the Clinical Director. This system helps in creating accountability for continuously improving the quality of their services. This also helps in safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish.



Central Emergency Services Committee (CESC):

The "Central Emergency Services Committee" leads performance improvement efforts in the Emergency departments of all facilities of Max Healthcare through the development and implementation of an organization-wide "Emergency Management Program". The committee has the Clinical Director as the Chair. Members & invitees consist of ER heads from across the network & representatives from legal, medical & service excellence, ambulance & nursing departments. The committee meets once a month.

The motto adopted by all ER's is "Right patient to the right clinician in the right clinical setting.

Key functions of the committee include developing strategic plans for the Emergency services across all facilities; use key indicators capable of showing improvements in emergency preparedness and/or management in reviewing performance, conduct effective review and performance, monitoring of emergency services across the network, develop and implement standards, SOPs, Clinical Guidelines for all levels of care, review infrastructure, equipment, staffing levels and ensure that the same is upgraded to meet patient care needs, within the scope and volumes of the service & identify and facilitate staff credentialing, training and upskilling.

Since its constitution last year significant strides have been made. Given below are some of the key achievements so far:

- Benchmarked each ER against International Federation for Emergency Medicine (IFEM) standards.
- Credentialing and privileging of each ER physician and nurse accomplished.
- Gaps in Infra, skill mix and staffing mapped for each ER.
- Protocols for referral to higher center established.
- Admission (to specialty) criteria through ER established .
- Monthly dashboard established for ER network.
- Review of important policies like MLC.
- Implementing stroke, MI, Abdominal pain, Trauma protocols.
- Feedback for ER institutionalized through IMRB.
- ER services established as a network wide program with a page dedicated on Max website.

Max Medical Writing Committee (MMWC)

The Clinical Directorate is committed to support clinicians in their journey towards clinical excellence through clinical research resulting in publications in journals of national & international repute. The "Max Medical writing committee" (MMWC) has been constituted with the aim to enhance and increase number of publications in peer reviewed high indexed national & international journals. The patron is CD Dr Sandeep Budhiraja himself and is chaired by Dr Sujeet Jha, Director Endocrinology at Max Saket, core expertise and deep interest in research, medical writing and publications. The committee consists of one to two members from each unit of MHC appointed by the Clinical Director. Committee members constitute a cross-section of the medical community, with special emphasis on medical writing expertise. Additional participants of the committee are bio-statisticians, representative from MIME, medical writers officially associated with MHC and representative of Office of Research as Member Secretary. The committee meets quarterly. The key deliverables of the committee include the following:

- Assist in making recommendation for projects/ manuscripts /articles of medical writing work to the Medical writing Services team. Support authors and researchers with high impact work and publication of manuscripts (case report, case series, and retrospective and prospective studies high index peer reviewed national & international journals.
- Assist the program in setting priorities, including participating in ongoing planning activities of the Max Medical writing program.
- Publications by MHC clinician/ researchers are routed through the MMWC.
- Serves as a central advisory, Repository and provide support and issue of guidance, in medical writing areas.
- Any medico legal issue & guidance are routed through the legal dept in MHC .
- Resolve conflicts in ownership of data & authorship.

The committee has had met twice since its inception in Oct 2016. The Medical writing team has taken up 27 projects till March 2017 covering various medical specialties across MHC.

Max Neurosciences Forum (MNF):

This form has been formed to lead performance improvement efforts in the specialty of Neurosciences across all Max facilities. It is chaired by Dr AK Singh (Medical Advisor & Head of Neuro & Spinal Surgery (Max Hospital, Dehradun) and Co-Chaired by Dr VK Jain (Senior Director Neurosurgery Delhi & NCR) with Patron being the Clinical Director. Members & invitees consist of Neurologists, Neurosurgeons and Interventional Neurologists from each zone of MHC and Representatives from marketing, medical excellence & growth vertical. The committee meets once in two months.

The committee functions to develop short and long term strategic plans for Neurosciences at the network level, develop & implement vital performance & outcome indicators, develop and implement clinical standards, SOPs, & clinical guidelines, enable integrated (collaborative multi-disciplinary) practice at individual

units & help serve as an advisory role to Clinical Directorate for credentialing, privileging, peer concerns, quality concerns for Neurosciences.

Since its constitution in September last year following has been accomplished:

- Eight Sub committees formed for each area of growth in Neurosciences.
  - Low back ache
  - Stroke
  - Epilepsy
  - Movement disorder
  - Cerebral Palsy
  - Cognitive disorder
  - Clinical Dashboard
  - Website development
- Evidence based Stroke protocol agreed and implemented

Clinical Ethics Committee (CEC):

The main focal point of this committee is to provide guidance to the executive team relating to ethical issues centered on patient care. This committee helps provide a platform to various hospitals to give their inputs on identified issues and concerns related to ethics and safety. It gives ongoing education or information to administration or professional staff on any ethical component of changing legislation or situations in clinical practice, provides a forum for development or review of policies, procedures or guidelines that have an ethical component, help support and foster the integration of an ethical approach to clinical practice and decision making, help integrate a system of "just culture" across the organization in order to improve accountability for patient care & provide support to patients and their families on ethical dilemmas as requested or required by the clinical team(s).

This committee meets once every quarter & is chaired by the Clinical Director.

Medical Advisor's Forum with Clinical Directorate:

The Medical Advisors meeting is organized by the Clinical Directorate on a monthly basis. Members include Medical Advisors of all units and the Clinical Director. The meeting provides a platform for Medical Advisors to raise any concerns/issues related to their respective units and seek clarifications and solutions. Meeting also provides a platform for Medical Advisors to share best practices, brainstorm ideas for various issues related to clinical excellence and how can we work towards achieving are organization's vision. Last year several ideas and discussion topics generating from MA forum were converted into policies and practices at Max such as Credentialing and Privileging of clinicians, ER to ICU transfer policy, ER counselor practice, end of life care etc.

Medical Superintendant's Forum with Clinical Directorate:

From May 2017, Clinical Directorate has initiated a quarterly forum with Medical Superintendents of the units. Medical Superintendant (MS)/ Deputy Medical Superintendant (DMS) are one of the most important pillars of clinical operations and care delivery at the units. The day to day clinico-operational challenges they face are common across units and reaching common solutions can benefit the organizations. Also, MS/DMS are equipped with plethora of knowledge and best practices that they can share over wider platforms.

The purpose of the forum has been outlined in three broad buckets:

- Platform to share information and best practices
- To brain-storm ideas and solutions to collectively resolve common issues faced by MS's
- Platform to escalate issues that need CD/CEO attention

It has been proposed that MS's take up 1-2 items from each meeting on a rotational basis and frame resolutions, best practices or policies around it to be shared with wider audience.

Central Medical Executive Council (CMEC):

Given our strong growth as a network of 14 hospitals and the ever increasing need for alignment to complement our abilities to enhance medical excellence, a need was felt to form a central body consisting of the MA's, MS's & Unit heads/ Zonal Heads in order to provide an integrated approach and functioning of the same . This brought about the initiation of Central Medical Executive Committee (CMEC). CMEC was conceptualized as a body where critical brain-storming on common issues could be conducted and leadership could collectively reflect on various new innovations, policies or implementation. The objective is to enable and support the implementation of clinical policies and strategies related to clinical affairs in line with company's vision & ensuring an integrated approach and seamless coordination between MA/MS/Unit Head for effective delivery of Clinical services and continuous improvement.

CMEC is chaired by MD & CEO CEO and co-chaired by the Clinical Director. Other members include the heads of Medical Quality, Clinical Governance and Central Nursing, Legal Head, the Medical Advisors of each unit, the Operations head of each unit and Medical Superintendent of each unit.

The Objectives of the CMEC have been defined as follows:

- To enable and support the implementation of clinical policies and strategies related to clinical affairs in line with company's vision
- To ensure an integrated approach and seamless coordination between MA, MS and Unit Head for effective delivery of clinical services and continuous improvement

Scope and Responsibilities of the CMEC will include:

- Discussion on Governance and Quality related scorecards and status/ challenges at different units - MQ MoS , Implementation of MQ program/policies , Compliance to "Physician Score Cards" process, Clinician Hiring process and privileging of clinicians, Implementation of Initiatives (Research/CDA/ Tech/Educational)
- Address concerns and obstacles in smooth clinical operations & role delivery of MA, MS and Unit Head
- Communication platform for sharing guidance and Vision by CD & CEO
- New clinical programs/ technologies
- Help items (if any)

Medicolegal Committee:

This committee helps provide guidance to the executive teams of the MHC network on issues relating to medical risk management and how to reduce its associated liabilities. It addresses ethical issues related to clinical matters, reviews reports of adverse and critical incidents to ensure that such incidents are analyzed and appropriate steps are taken and discusses the issues & challenges faced by hospitals. The committee specifically addresses sentinel events, medical negligence cases & risks of de accreditation. The committee also periodically reviews the analysis of medicolegal cases and high risk incidents for CAPA, and guides the constituent MHC hospitals. This committee helps provide a platform to all the network hospitals to give their inputs on identified issues and concerns. It is chaired by the Clinical Director & co-chaired by the Director legal. Other members consist of Medical Advisors, Unit Heads & Medical superintendants from individual hospitals. The committee meets once every quarter.

Central Performance Improvement & Safety Committee:

Though the units are all functioning independently, the need was felt to form a central body that overlooks and provides guidance on the overall quality strategy and functioning of the units. This will help provide a systematic, coordinated and continuous approach in optimizing clinical outcomes and patient safety. Thus the concept of Central Performance Improvement and Safety Committee was born. The membership comprises of centrally and unit wise placed members who help oversee the organization wide performance improvement and safety program. The committee is chaired by the Clinical Director. The Chairperson may invite certain executives from the organization as considered necessary to attend and participate in the meetings of the Central PISC. The Chairperson may also invite experts from outside the organization as deemed necessary for adding value and expertise on any specific topic. The committee meets once every quarter.

The Central PISC has the key role of overlooking quality and related activities in the entire Max healthcare network. It functions as mentioned below.

- Review and provide direction to the hospital led PISC activities

- Hospital clinical indicator(s) review
- Hospital adverse event review
- Update on progress of Medical Quality improvement plan
- Root cause analysis and action plans for improvements especially of mortality audits
- Hospital specific committee's review
- NABH audit activities update
- Provide direction to patient safety goals – trainings & risks

Central Infection Control Committee:

This committee looks into an active, effective, institution-wide infection control program that develops effective measures to prevent, identify, and control infections acquired in the hospital or brought into facilities from the community. It helps setting up infection control policies and provides input into specific infection control issues. It also helps prevent and control nosocomial infections, provides development of infection control procedures, supervise training & education activities.

The committee is chaired by the Clinical Director. The members consist of the Medical Advisor's, Medical Superintendant's, Nursing Heads, Quality Managers & the respective chairperson(s) of the local hospital infection control committee of the respective hospitals.

Central Mortality Committee:

In recent years, there has been an increasing interest in utilizing mortality rates to monitor the quality of hospital care. As a consequence, healthcare organizations now require assurance that the care they provide is safe and the mortality rates are not because of failure of processes.

Keeping this in mind, a forum (Central Mortality Committee) was established under the guidance of Clinical directorate along with Clinicians, Surgeons, Medical Advisor, Medical Superintendent's & Quality managers across the framework. This forum helps organizational learning, accountability and monitoring of mortality rates pan max.

Key function of this committee includes reviewing mortalities and monitoring corrective actions for prevention of unexpected mortalities.

It also serves as an important learning platform for all in terms of improved case review, improved medical records, improved reporting & patient safety.

The committee is chaired by the Clinical Director. It meets quarterly.

NABH (National Accreditation Board for Hospitals and Healthcare Organizations) Accreditation

MSSH Saket was the first hospital in North India to receive NABH Accreditation

In India, heath systems currently operate within an environment of rapid social, economical and technical changes. Such changes raise the concern for the quality of health care. National Accreditation Board for Hospitals and Healthcare Providers (commonly referred as NABH) is committed to support improvement of quality of healthcare service in our country for all strata of the population. It helps in providing a standardized approach to quality of care in healthcare facilities.

The 4th edition of NABH accreditation standards (launched in December 2015) has been adopted and implemented across the MHC network of hospitals. These standards consist of 10 chapters, which have been further divided into 106 standards and 683 objective elements. Objective elements are required to be complied with in order to meet the requirement of a particular Standard. Similarly, standards are required to be complied with, in order to meet the requirement of a particular Chapter.

13 hospitals (both secondary and tertiary care centres) are successfully NABH accredited. They are:

1. Max Super Specialty Hospital, Saket (East & South), Delhi
2. Max Super Specialty Hospital, Saket (West), Delhi
3. Max Smart Super Specialty Hospital, Saket, Delhi
4. Max Super Specialty Hospital, Gurgaon, Haryana
5. Max Multi Specialty Centre, Panchsheel, Delhi
6. Max Super Specialty Hospital, Shalimar Bagh, Delhi
7. Max Super Specialty Hospital, Mohali, Punjab
8. Max Super Specialty Hospital, Dehradun, Uttarakhand
9. Max Super Specialty Hospital, Bhatinda, Punjab
10. Max Multi Specialty Hospital, Noida, Uttar Pradesh
11. Max Super Specialty Hospital, Greater Noida, Uttar Pradesh
12. Max Super Specialty Hospital, Vaishali, Uttar Pradesh
13. Max Super Specialty Hospital, Patparganj, Delhi

Max Multi Speciality Centre, Panchsheel Park, New Delhi achieves NABH accreditation for Dental Health Care Service Providers (DHSP)

NABL (National Accreditation Board for Testing & Calibration Laboratories) Accreditation

National Accreditation Board for Testing and Calibration Laboratories (NABL) is an autonomous body under the aegis of Department of Science & Technology, Government of India. Its objective is to provide Government, Regulators and Industry with a scheme of laboratory accreditation through third-party assessment for formally recognizing the technical competence of laboratories. The accreditation services are provided for testing, calibration and medical laboratories in accordance with International Organization for Standardization (ISO) Standards.

Currently, in the MHC network, 8 laboratories of the below listed Max hospitals are NABL accredited.

1. Max Super Specialty Hospital, Saket (West), Delhi
2. Max Super Specialty Hospital, Gurgaon, Haryana
3. Max Super Specialty Hospital, Shalimar Bagh, Delhi
4. Max Super Specialty Hospital, Mohali, Punjab
5. Max Super Specialty Hospital, Dehradun, Uttarakhand
6. Max Super Specialty Hospital, Bhatinda, Punjab
7. Max Super Specialty Hospital, Vaishali, Uttar Pradesh
8. Max Super Specialty Hospital, Patparganj, Delhi

NABH Blood Bank Accreditation

Blood banks at MHC are committed to providing international class blood bank services to all patients ensuring medical & service excellence, complying with statutory regulations & maintaining highest ethical standards.

The quality objectives include providing state of art blood bank facilities, quality assurance, continuously improve quality and patient satisfaction & monitor and adhere turnaround times.

Blood banks are an integral part of the health care system. Accreditation is the single most important approach for improving the quality of blood banks. Accreditation of blood banks strives to improve the quality and safety of collecting, processing, testing, transfusion and distribution of blood and blood products.

NABH Blood bank accreditation programme assesses the quality and operational systems in place within the facility. The accreditation includes compliance with the NABH standards, applicable laws and regulations including guidelines set by National AIDS Control organization (NACO).

Currently, in MHC network, 3 Max hospitals Blood banks are NABH accredited:

1. Max Super Specialty Hospital, Saket (East), Delhi
2. Max Super Specialty Hospital, Shalimar Bagh, Delhi
3. Max Super Specialty Hospital, Patparganj, Delhi

NABH Accreditation of Ethics Committees

NABH accreditation of Ethics Committee is a mandate from DCGI, MOHFW Government of India (wef 1st Feb 2018). This is a public recognition of the achievement of accreditation standards demonstrated by an independent external peer assessment of ethics committee's level of performance in relation to the standards.

Accreditation is an incentive to improve quality as well as capacity of registered Ethics Committee to confirm an ethical research on new drugs. Confidence in accreditation is obtained by a transparent system of monitoring over the accredited ethics committee and an assurance is given by the accreditation body that ethics committee constantly fulfills the accreditation criteria.

MHC is in the process of preparing and applying for the same.

NABH for Nursing Excellence

Nursing services are an indispensible pillar of any health care organization. Nursing services in Max Healthcare is committed to provide safe, competent and ethical care with compassion, comfort and collaboration with the patients, the family, the community and the clinical care team.

Currently, in the MHC network, Max Super Specialty Hospital, Saket has been awarded and certified for "Nursing Excellence".

Nursing Excellence Standards of NABH focus on:

- Nursing Resource Management
- Nursing Care of Patient
- Management of Medication
- Education, Communication and Guidance
- Infection Control Practices
- Empowerment and Governance
- Nursing Quality Indicators

Our nursing department is committed to providing specialized world class care through innovation, collaboration, and evidence-based practice.

Joint Commission International Accreditation

Joint Commission International (JCI) accreditation is considered as the gold standard in global health care. It is recognized globally as the world's leader in health care accreditation and the author and evaluator of the most rigorous international standards in quality and patient safety.

We have successfully completed the 5 day concurrent survey for both MSSH Saket hospitals (East & West Wings) which took place from 13th to 17th February 2017. A team of 5 surveyors (including a lead surveyor) visited the premises and conducted a thorough on site survey using the unique "tracer methodology" which provides the cornerstone of the JCI on-site survey, serving as a tool for surveyors and health care organizations to evaluate patients and systems in unprecedented depth.

The survey went well and the surveyors were very impressed by the strength of the clinical protocols and the quality of clinical care and services present in both the hospitals. They specially commented on the level of involvement and transparency demonstrated by everyone – across clinicians, nursing, paramedics and support staff.

They also pointed out opportunities for improvement that need to be worked on collectively to further improve patient and staff safety and experience.

The journey to JCI formally started in April 2015. This journey consisted of multiple facets like development of an action plan, identification & training of over 100 Quality champions from every department (clinical & non clinical) which included a mix of doctors, nurses, technicians etc., formulation of core teams and committees, formulation of "Steering Committee", preparation of policies and procedures as required mandatorily by the JCI, formation, tracking and implementation of quality indicators etc and so much more. This has definitely resulted in creation of new and improved existing processes related to patient safety on ground & improvement in risk management & reduction processes.

During this two year period, tremendous passion, perseverance and collaboration had been witnessed amongst all teams (both at the corporate & unit level) who had worked towards a common purpose and have succeeded in achieving a common goal through authenticity and teamwork.

April -June 2015	• Baseline Gap Assessment of JCI 5th Standards
July -August 2015	• Train the Trainer
Sept 2015-March 2016	• Formation of Policies and Manuals
April -June 2016	• Department specific deployment
July -Dec 2016	• Application submission • Internal preparations
February 2017	• Final Survey held on "13th to 17th February 2017"

Highlights:

- External Survey successfully completed for both Saket hospitals (East & West Block) from 13th to 17th Feb 2017
- Received the gold seal in the first attempt (without need of a focus survey)
- Out of approx. 1160 measurable elements, there were only 2 Non compliances

Way forward:

Preparations initiated for Max Shalimar Bagh & Max Patparganj

Celebrating the Gold Seal.....!!

Patient Centered Care

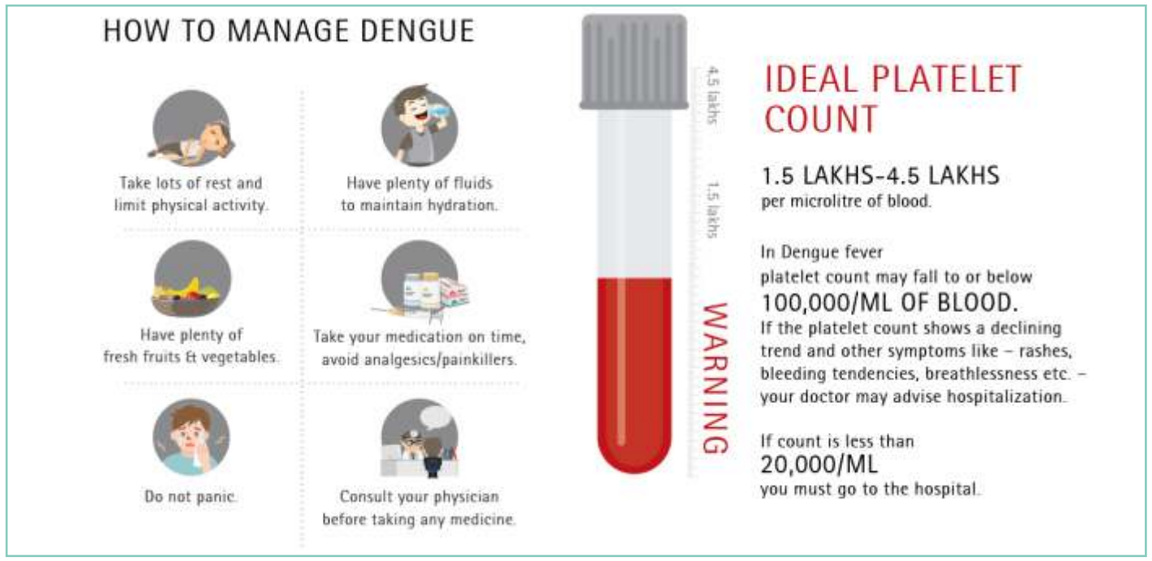
Dengue and Chikungunya Management:

Since the last few years, Delhi – NCR has suffered from major outbreaks of Dengue and Chikungunya during and post the monsoon season. Healthcare service providers in the area have struggled to cope with the increased patient volumes due to the outbreaks and to provide proper medical care to the patients during these seasons.

Fulfilling our commitment to Sevabhav and Excellence, MHC rolled out a Dengue and Chikungunya management plan to deal with the outbreak and provide best care to patients. The plan included enhancing bed capacity by 10-20% at each Max hospital and efficiently planning personnel and infrastructure to manage the extra beds. ~157 dedicated beds were added across MHC under the plan and adequate Clinical, Nursing and F & B care was provided to all patients.

To ensure excellence in treatment - Admission criteria and guidelines for diagnosis and management of Dengue and Chikungunya were circulated across all Max units. New wards were jointly managed by ER and Internal Medicine teams. Specialized trainings were conducted to equip the Nursing and ER teams with required skills to effectively manage patients. Efficient triaging ensured that ER rooms have beds available for new patients and TAT (Turn Around Time) is not high. Specific Lab tests for Dengue and Chikungunya were initiated and added into HIS as per subsidized rates prescribed by the government.

With this plan in place Max was able to treat ~ 4000 Chikungunya and ~ 1100 Dengue patients from Apr-Sep 2016.



Measure of Patient Satisfaction:

In our commitment to provide patient centered care, it is vital to involve our patients and their families in clinical decision making and respect their values and needs. Proper communication with them is imperative to understand their requirements.

In MHC, we have a robust feedback collection system through an independent market research agency. This process has been implemented to ensure that a proper candid feedback is obtained on the overall experience of the patient and his attendants at the Hospital.

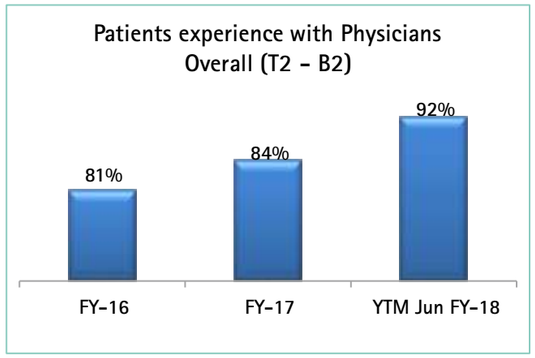
The Program Objectives are:

- To Assesses the quality of the experience that a patient goes through while visiting the Max Hospitals
- Identify and improve the critical areas which impact the patient's perception of quality
- Detailed, actionable information that can be linked directly back to operational process and practices
- Helps detect systematic problems so that preventions can be designed before they become problems – process gaps
- Can validate internal process metrics in terms of relevance to patient's satisfaction – alignment to patient expectations.

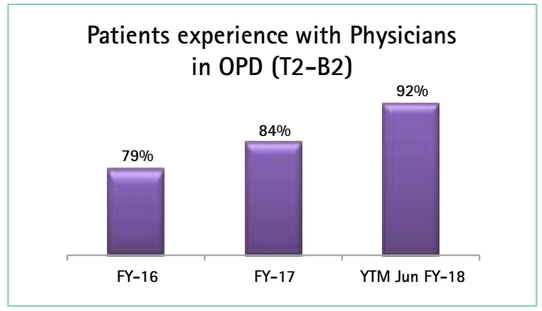
The Rating Scale used is consisting of 5 parameters:

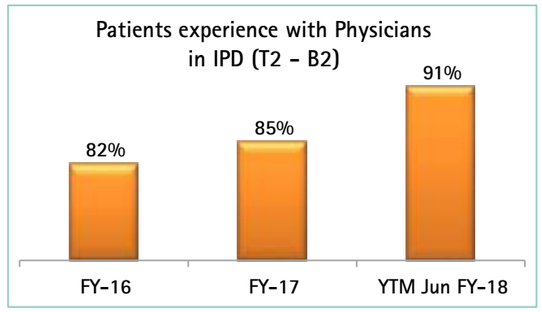
- Excellent
- Very Good
- Good
- Fair
- Poor

The scores of Max Healthcare obtained from the survey are significantly high and show a continuous upward trend.



In the graphs below, summation of excellent & very good is taken as the Top 2 box while summation of fair & poor is taken as the Bot2 Box. The graphs depicts the net patient satisfaction Top 2 – Bottom 2 (i.e. percentage of customers who are delighted – percentage of costumers who are dissatisfied)

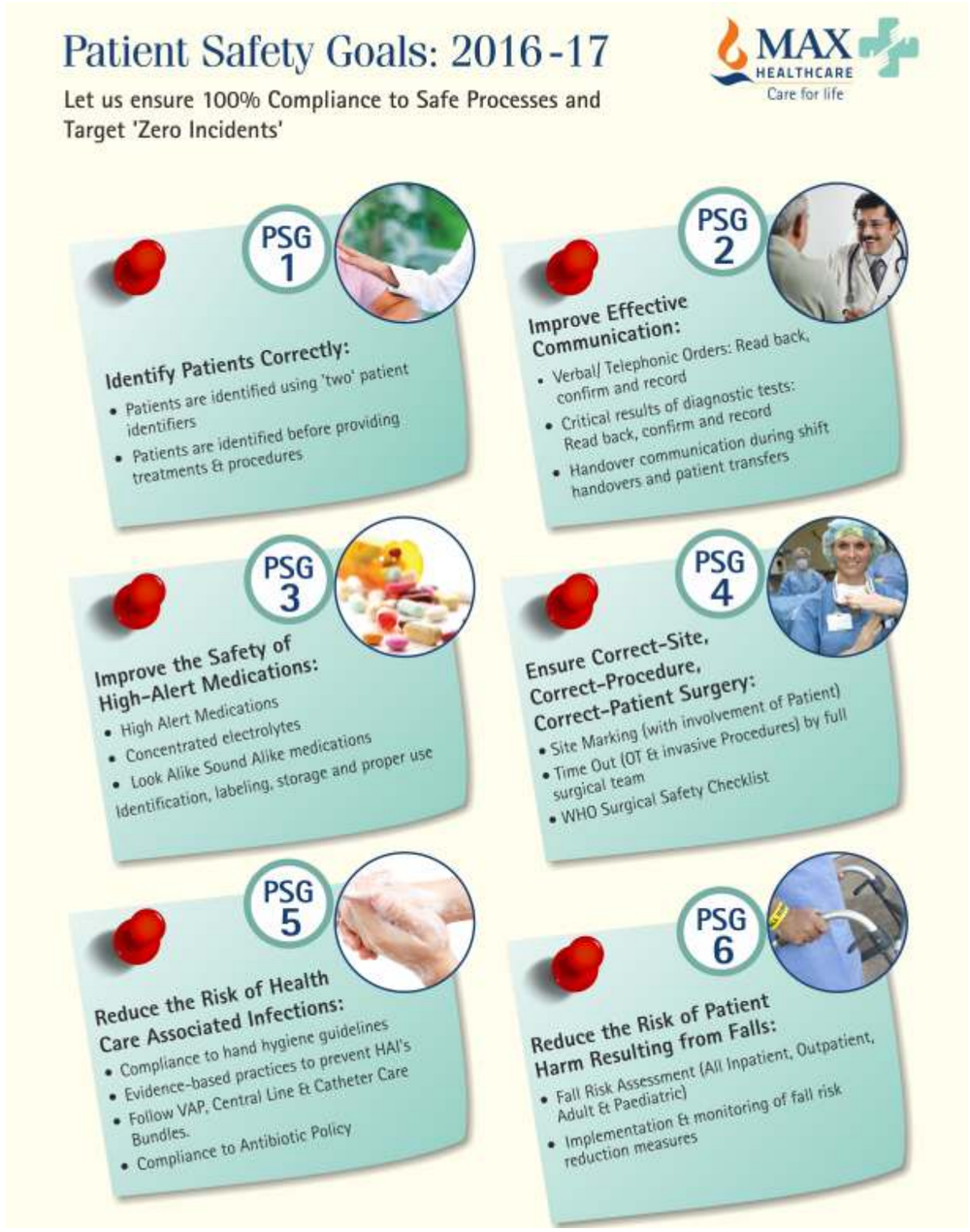




The data is collated and shared with the internal teams on a monthly basis. Any opportunities for improvement are acted upon with sincerity and commitment.

Patient Safety Goals 2016 - 17

Every year, MHC launches a fresh set of "Patient Safety Goals". They help the organization to address specific areas of concern in regard to patient safety. The goals basically focus on problems in healthcare safety and how to address them. The below goals have been adapted from Joint Commission International (JCI) 5th Edition. Ultimate aim is to improve patient safety practices & clinical outcomes.

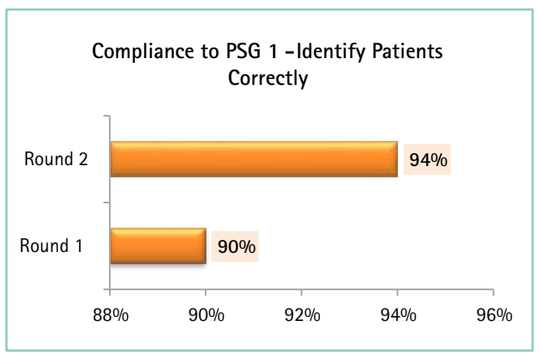


Compliance Assessment Audit – Patient Safety Goals:

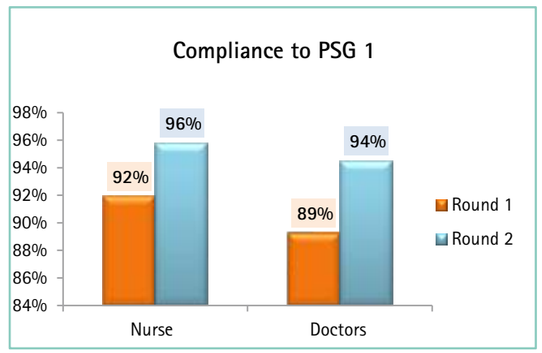
In order to measure the actual compliance of "Patient Safety Goals" on ground, a biannual internal baseline assessment using a preformed checklist is carried out across the network. The checklist comprises of objective checkpoints for every goal related to general observations & staff interviews (doctors & nurses). This activity helps to generate a score which is very useful in bringing out the factual picture on ground practices from different aspects and creating a roadmap for improvement. This practice helps us measure, assess & improve performance.

Patient Safety Goal 1 – Identify Patients Correctly:

Patient identification is vital in virtually all aspects of diagnosis and treatment. The main intent of this goal is to correctly identify the patient for whom the service or treatment is intended and to match the service or treatment to that individual.



An improvement of 4% was witnessed in Patient Safety Goal 1 in the second compliance assesment round



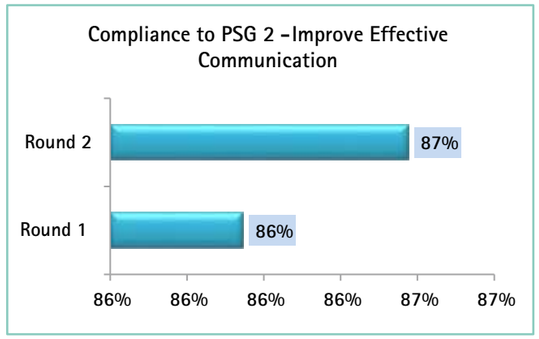
Nurses showed an improvement of 4% and Doctor's of 5%.

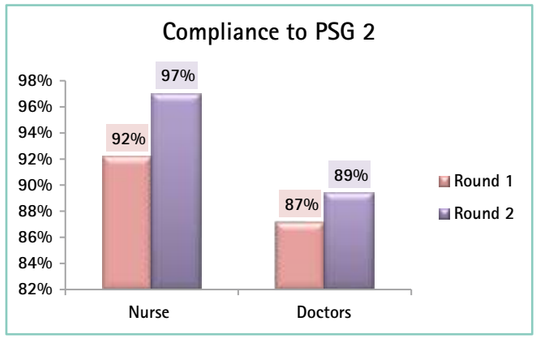
Patient Safety Goal 2 – Improve Effective Communication:

To be effective communication within the healthcare scenario needs to be timely, accurate, complete, unambiguous and clearly understood by the recipient. It then reduces errors and results in improved patient safety. There are many forms of communication – like verbal, electronic & written.

This goal comprises of three important aspects:

- Verbal/ Telephonic Orders - Receiving, reading back, implementing and counterchecking the correctness of the verbal order
- Reporting of Critical test results – Defining, reporting of the test results within a defined time period, confirming & recording
- Handovers - Exchanging information during shifts, transferring responsibility of care, providing continuity of care and make timely decisions

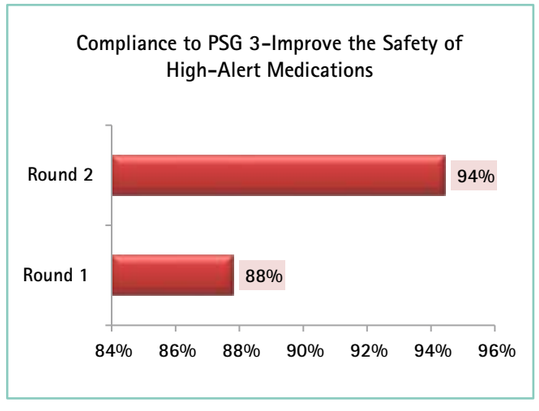


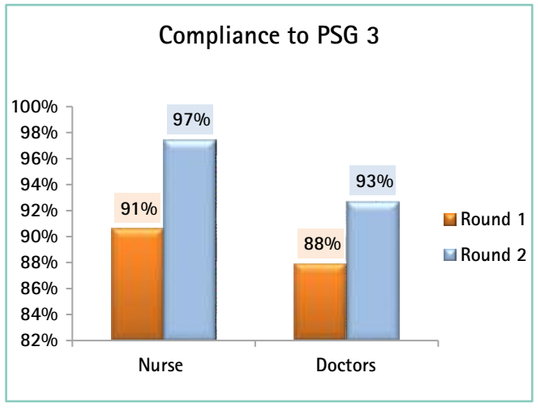


Patient Safety Goal 3 – Improve the safety of High alert medications:

This goal focusses on the safety of "High Alert Medications" as they are liable to harm more frequently and the harm they produce is likely to be more serious if an error occurs High alert medications include "Look alike & Sound alike drugs" & also "Concentrated electrolytes".

Emphasis is laid on their identification, labeling, storage, dispensing & proper use.





Medication Safety Practices: Review of Medication orders for appropriateness

Prescription order is an important transaction between the doctor and the patient. Good medication management involves review of the prescription written by the doctor to check for the appropriateness of the medications prescribed for the patient. The review basically identifies whether the medications prescribed are meeting the patients clinical needs in a correct manner.

In MSSH Saket, review of 100% of inpatient prescriptions was introduced. This was conducted by a team of Clinical Pharmacists on software called PUTTY (Part of CPRS-VistA). The process consisted of conducting an appropriateness review for a prescription order prior to dispensing the medication.

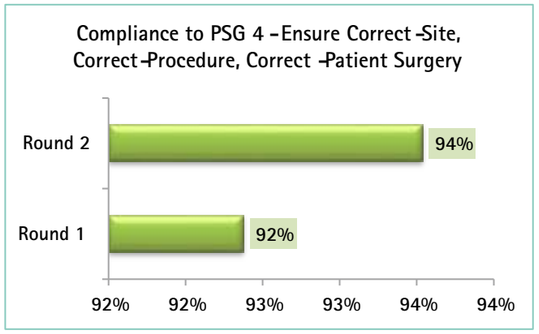
Review was conducted on analysis of parameters listed below:

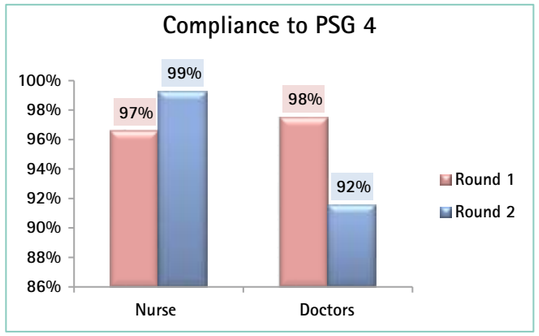
- Right drug, dose, frequency, and route of administration
- Correct drug dilution
- Potential drug – drug interactions
- Real or potential drug allergies
- Therapeutic duplication

On identification of any medication error by the clinical pharmacist, the prescribing clinician was immediately informed and the medication order was rectified.

Patient Safety Goal 4 – Ensure Correct Site, Correct Procedure, Correct Patient Surgery:

This goal centers on marking the surgical and invasive procedure site involving the patient with an instantly recognizable mark. The site should be marked by the person performing the procedure. It also concentrates on the "time-out" practice involving the use of the Surgical safety checklist that is performed in the operating theatre immediately prior to the start of surgery to ensure correct-site, correct-procedure, and correct-patient surgery.





Patient Safety Goal 5 – Reduce the Risk of Healthcare Associated Infections:

Infection prevention and control are challenging in most health care settings, and rising rates of healthcare associated infections are a major concern for patients and health care practitioners. The most common infections in health care settings are catheter associated urinary tract infections (CAUTI), Central line associated blood stream infections (CLABSI), Ventilator associated pneuminia (VAP) & Surgical site infections (SSI). Proper hand hygiene forms the core for reduction & elimination of the infection.

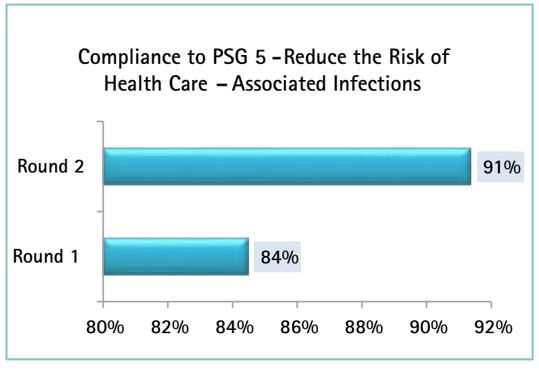
This goal provides attention on maintaining compliance to hand hygiene guidelines & bundle care.

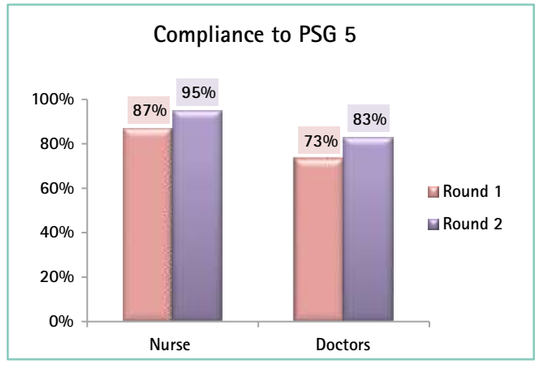
Infection Control Bundle - Central Line Bundle

CRBSI Criteria	Central Line Bundle
• Patient on central line for more than 2 calendar days • Blood culture true positive (one or more) and the organism is not isolated from any other site • Fever>38C, chills, hypotension plus blood culture positive (commensal) in more than two occasion with same organism	• Follow Aseptic Technique • Optimal catheter site selection • Skin Antiseptic(2% Chlorhexidine) • Sterile dressing • Hub disinfection • Daily review of line site • Early Removal/ sign of phlebitis.

Infection Control Bundle
Ventilator Associated Pneumonia (VAP) Bundle

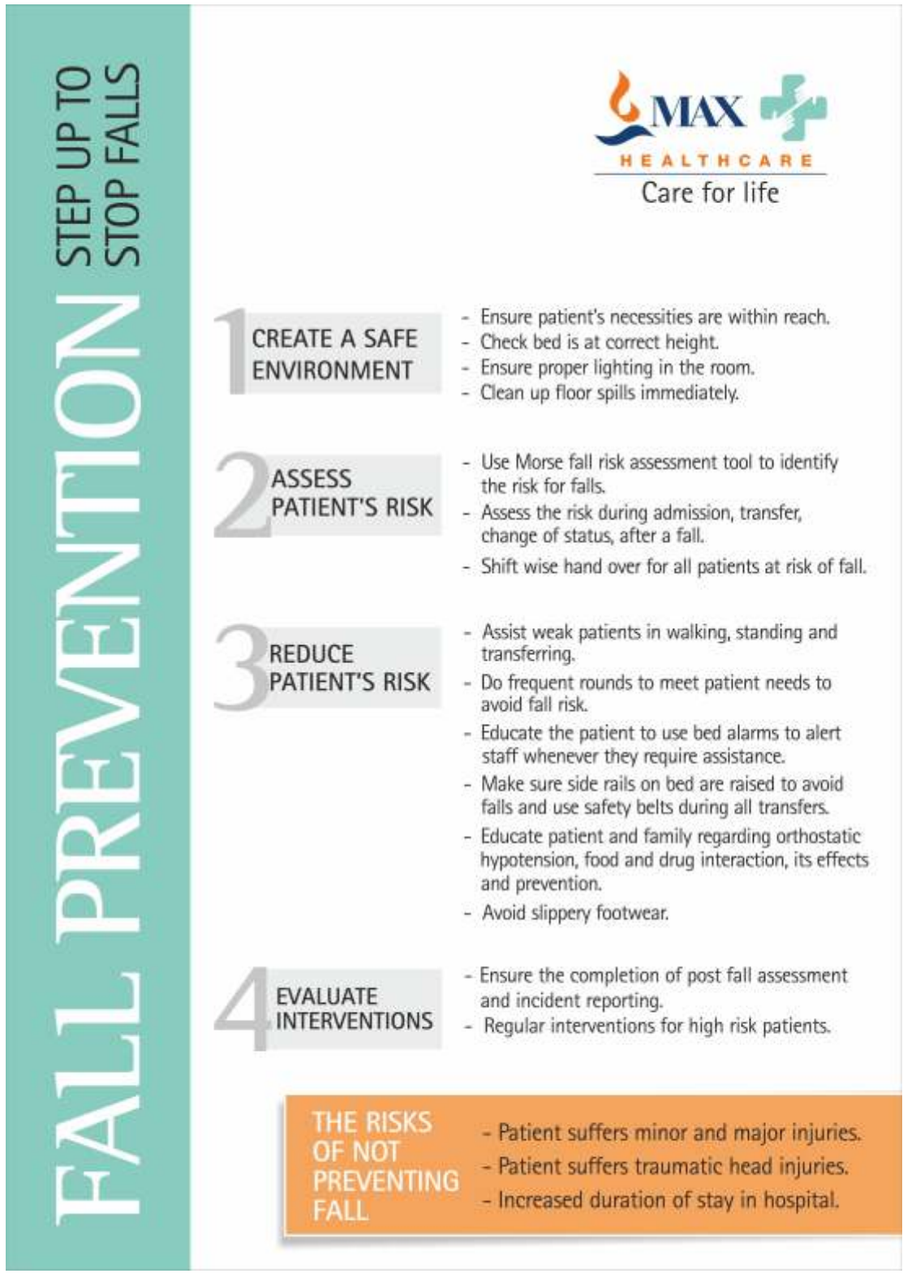
VAP criteria (1,2 & 4 criteria are compulsory)	VAP Bundle
• Patient is on mechanical ventilation for >2 calendar days • Radiology (either New infiltrate/Consolidation/cavitation) • Clinical symptoms (Fever, leukocytosis or leucopoenia) • Increased secretion and suctioning requirement • Worsening of gas exchange • Tracheal/BAL culture >10^5 colony	• Head end elevation 30 - 45° • Aseptic Technique : Oral care, Sterile Suctioning • Sedation vacation once in 24 hours • PUD prophylaxis: H2 blockers • DVT prophylaxis: LMWH (Clexane 40mg/day), Ted stocking • Weaning protocol: assess readiness to extubate

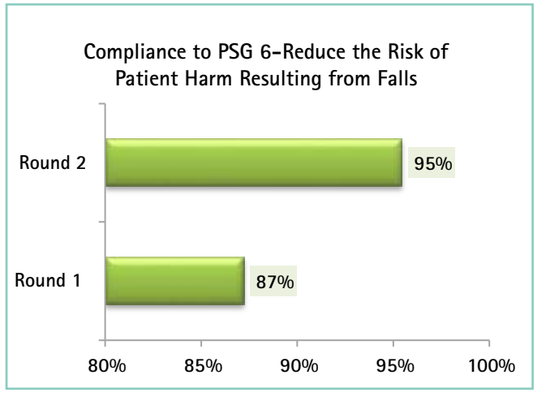


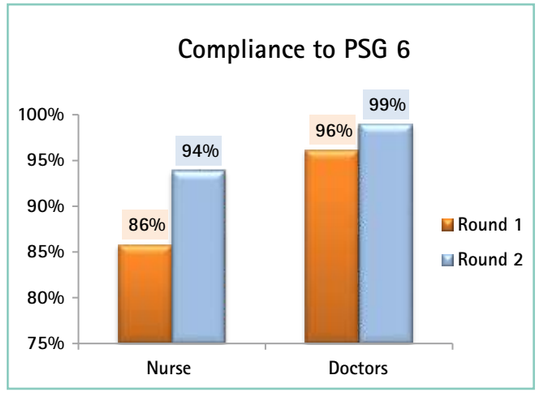


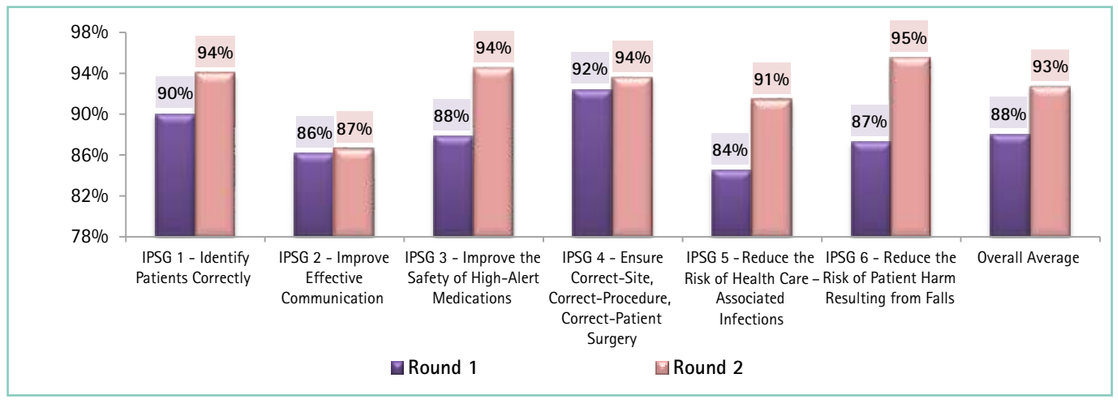
Patient Safety Goal 6 – Reduce the risk of patient harm resulting from falls:

This goal focuses to establish a proper fall risk reduction program and implement a process for assessing all inpatients and those outpatients whose condition, diagnosis, situation, or location identifies them as "high risk" for falls. Inpatients and outpatients identified at risk for falls (based on documented criteria) should be reassessed and measure should be implemented accordingly.





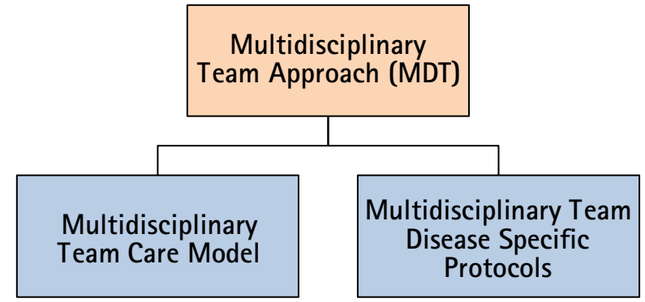




Multidisciplinary Team Care Approach (MDT)

Multidisciplinary team care (MDT) is an interdisciplinary approach that incorporates the knowledge and skills of a number of health care providers essential for successful treatment and patient management. This entails interdisciplinary and multidisciplinary health care approach. This is characterized by a shared philosophy, mission, and set of objectives. We highlight the unique and complementary roles and responsibilities of members of teams of health care providers, the integration of the knowledge and skills, communication, conjoint problem solving, collaboration, consensus-based decisions, and shared accountability that are the hallmarks of interdisciplinary care. The availability of a multi-disciplinary team is the responsibility of all stakeholders, who need to support, encourage, and demand a comprehensive approach to patient management as it is in all of their best interests. Although there may be circumstances where individual health care providers can provide adequate care and situations where there is a lack of available resources for truly integrated interdisciplinary care, we believe that optimal care for patients is best provided within the model we have described and one worthy of aspiring toward. MDT care can be especially helpful for treatment of emergency cases such as Trauma, Stroke, Myocardial Infarction etc. and for chronic diseases such as diabetes which have multiple co-morbidities.

MDT approach can be broadly classified into i) MDT Care Models that include establishing overarching treatment processes, board meetings, discharge processes etc. and ii) Disease specific defined protocols e.g. protocols for Myocardial Infarction or Stroke.



Multidisciplinary Team Care Model

Advantages of Multidisciplinary Team Care

Many research studies have proven advantages of MDT care in healthcare delivery. MDT care has become an established care model in many developed countries with most reputed clinics and hospitals instituting MDT processes and protocols. Clinical Directorate has initiated MDT care model at MHC and within next two years our vision is to institute these protocols across all units. MDT care will help us achieve MHC's vision of 'Sevabhav' and 'Excellence'.

- Improved Communication – MDT meetings and discussions improve communication between clinicians from multiple disciplines and various support teams such as nursing, paramedics etc.
- **Reduced length of Stay –** A comprehensive treatment plan with all stakeholders on board reduces chances of misdiagnosis, re-treatment, patient transfers, relapse etc. and improves patient outcome and recovery. This reduces patient's length of stay in the hospital.

- **Improved Safety –** With improved communication and pre-decided goals, errors in treatment will be minimized leading to better patient safety. Reduced length of stay also reduces number of ventilator days or number of central line days thereby reducing chances of infections.
- **Better patient experience –** A comprehensive treatment plan and integrated approach also makes patient care smooth and continuous. Processes such as admission, tests, discharges etc. become efficient and timely. Patients also face lesser transfers between departments.
- **Family satisfaction –** MDT meetings followed by communication of integrated treatment plan to the family improves satisfaction of the family and provides clarity to the carers/ relatives.

MDT Board meetings and Family Briefings at Max

MDT Multidisciplinary Care approach has been launched at all ICUs at MHC. When a patient is being treated by multiple clinicians and has stayed for 5 or more days, the critical care clinician or the admitting clinician can decide to call an MDT meeting.

All the treating clinicians from different specialities gather together to discuss patients condition, diagnosis and future treatment plan. The clinician's meeting is followed by a family briefing where all the clinicians meet the patient's family and counsel them.

IT based MDT trigger and discussion

We have also developed an IT based algorithm that will automatically trigger an MDT notification to the clinicians when the patient is being treated by multiple specialities and has stayed for a certain number of days. Clinicians can enter MDT notes and integrated treatment plan on CPRS system.

MDT Protocol for Specific Diseases

Disease specific MDT protocols allow for designing more specific and detailed processes and better assignment of roles and responsibilities. The measures of success are speciality dependant and hence become easier to track and evaluate.

Neurosciences – Stroke Protocol

Stroke is a preventable and treatable disease. Over the past two decades a growing body of evidence has overturned the traditional perception that stroke is simply a consequence of aging that inevitably results in death or severe disability. Understanding of the care processes that contribute to a better outcome has improved, and there is now good evidence to support interventions and care processes in stroke rehabilitation. International & National guidelines cover interventions in the acute stage of a stroke ('acute stroke') or transient ischemic attack (TIA

Keeping this in mind, MHC's Departments of Neurosciences have come up with a MDT Protocol on Stroke which has been rolled out Pan Max. As part of this initiative, data from all hospitals is collected to track and analyse patient outcomes. The indicator Door to Needle time has also been added in the company MoS to keep track of the effectiveness of MDT stroke protocol at hospitals.

Cardiac Sciences – Myocardial Infarction (MI) protocol

Rapid patient triage and reperfusion is important in the care of patients presenting with acute myocardial infarction. An MDT program in MI should be designed to facilitate the quick response. Such a program will need a multidisciplinary effort from physician teams, nursing, pharmacist, paramedical & nonclinical teams. The program has parameters like defined timelines for initiation of therapy aimed at reperfusion, conducting ECG, notification to CCU doctor on duty etc.

On similar lines to Stroke Protocol, MHC has rolled out an MI protocol. Door to Balloon time has also been added in the company MoS as a significant indicator of patient care to keep track of the effectiveness of MI protocol at hospitals.

Clinical Dashboard

Max Healthcare is committed to providing the highest level of patient safety and clinical outcomes. A program to embed patient safety and quality measurement has been implemented. A standardized clinical dashboard at each hospital has been established, and ensured it is reviewed and acted upon to drive improvement in patient care. The dashboard measures are related to the patient's journey through the hospital. Each and every measure that improves over time has a direct consequence of saving a life, reducing the patient's morbidity, reducing the length of stay and managing his/her disease.

The dashboard comprises of 20 measures. These are a mix of structure, process and outcomes such as - adverse events, unexpected mortalities and clinical outcomes. A uniform set of definitions ensures comparability and consistency of measurement. To meet the challenge of accurate and efficient data capture, a software has been developed to extract and analyze data from the Electronic Health Record System.

The clinical dashboard is a part of the overall organizational metrics and sits alongside the financial and service measures. It is reviewed at all levels of the leadership, quarterly and/or monthly, such as Board of Directors, Central Executive Leadership and Hospital leadership. The review culminates in analysing trends, comparing hospitals and external benchmarking. At the next level, an exercise was taken to link the measures to the annual goals of each individual member of the senior and middle leadership team. Goal setting has been done on yearly basis for last 2 years, with targets for improvement. The scores of performance are linked to rewards and recognition. Once the targets are achieved for individual indicators, suggestions for new indicators and/or revising the targets upwards are taken.

The challenges that were overcome were - ensuring data reliability and accuracy and training of all frontline and senior managers, doctors and nurses. Linking the dashboard measures to the online appraisal system was an extensive exercise.

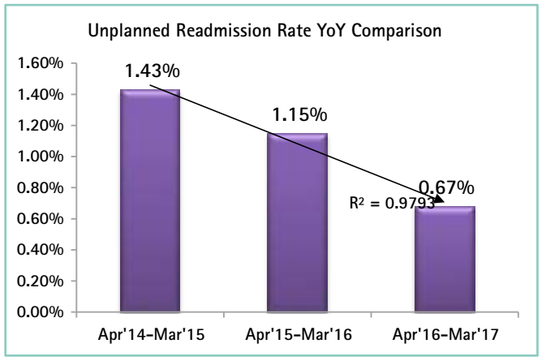
The program is a first of its kind in the region that has had a significant impact on improving clinical processes, reducing risks and improving clinical outcomes. Individual and team ownership and accountability for Quality and Safety has improved.

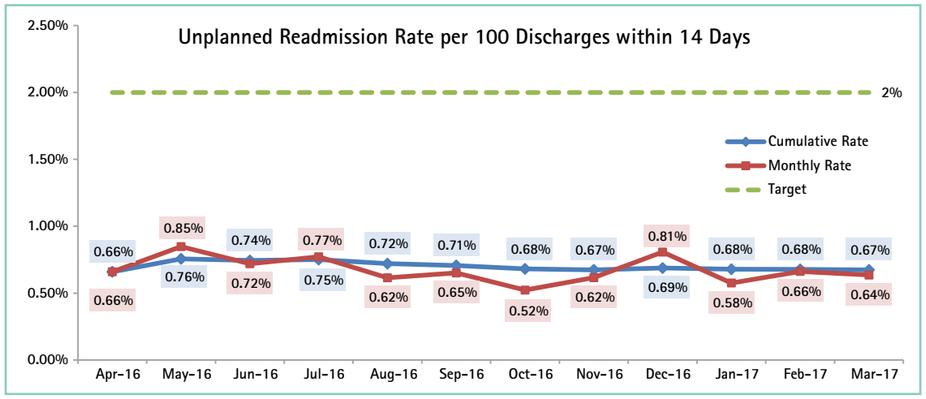
In order to capture the incidents reported correctly and disseminate the information promptly to all relevant stakeholders, we at MHC have also instituted a tracking system, called the 'quality flash.'

The quality flash is a report that captures all safety related incidents that have occurred in the previous 24 hours. There is an incident reporting system in place that is accessible to each and every staff member. Staff are empowered and encouraged to report near misses, and any safety related accidents in a transparent manner, with an aim to identify learning's and continuously improve. MHC results are comparable to the best published rates. Some of these are presented below.

Unplanned Readmissions per 100 discharges

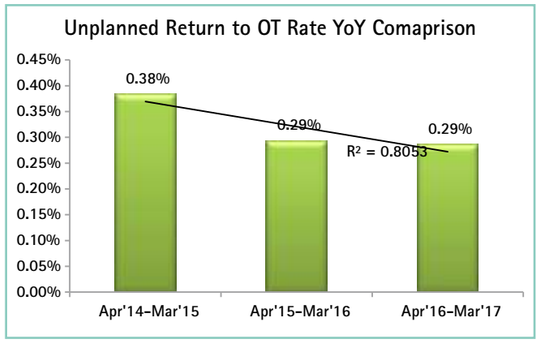
Globally, the emphasis is to reduce readmissions related to the primary cause of illness. Tracking this metric provides the hospital with an opportunity to review in depth the reason for a patient returning to the hospital within 14 days of discharge, in identified specialties. Each readmission is peer reviewed to identify factors that contributed to the readmission, and then make attempts for system wide improvements. The value is reduced morbidity patients. The MHC rates are shown below:

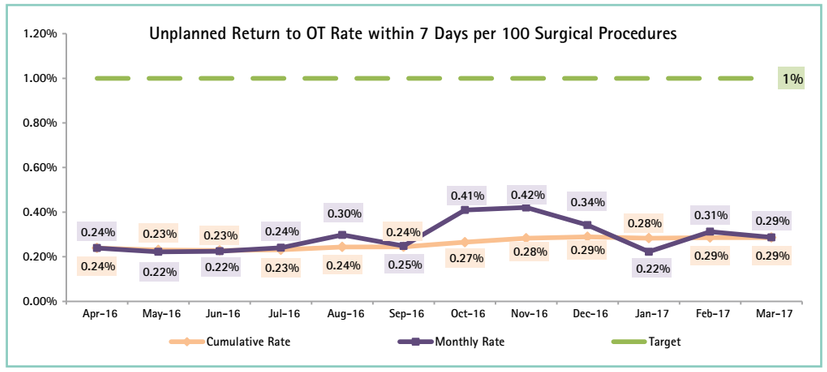




Unplanned return to OT within 7 days

In a few patients, some inherent pre-existing problems or the illness per se, make them vulnerable to a complication such as bleeding or other problems, and they have to be re operated. Rarely, it may indicate opportunities that patient care could have been better planned and improved. Monitoring the indicator closely and comparing it with other studies provides the reassurance that the surgical outcomes are successful, comparable to globally published levels.

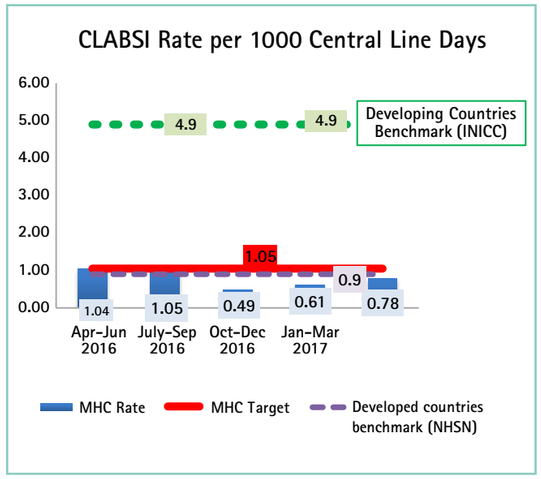




Hospital Acquired Infections

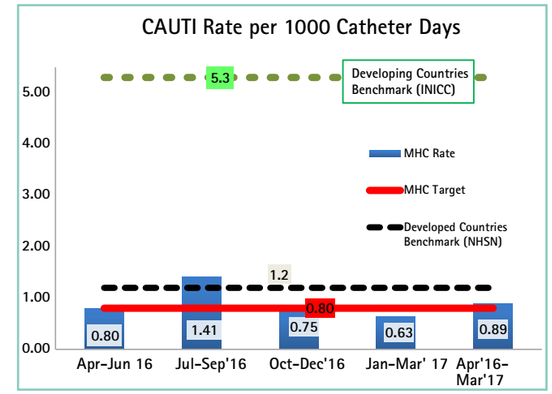
Many factors influence whether a patient will get an infection during hospitalization, such as immunity levels, procedures and invasive techniques that may create routes of infection, and inadequate infection control practices that may facilitate infections to spread. MHC has developed and implemented the best infrastructure, processes and training programs to prevent and control hospital acquired infections. There is an ongoing surveillance of infections and these are tracked and reviewed diligently. Opportunities for improvement are continuously identified. Regular training programs are held for doctors and nurses. The HAI rates are close to the developed countries benchmarks.

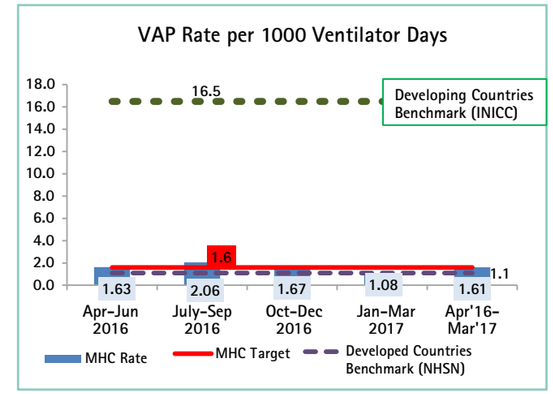
- We compare our results to the developing & developed country benchmarks.
- Our trend lines match with the best in the world in majority of Indicators.



Online Antibiogram:

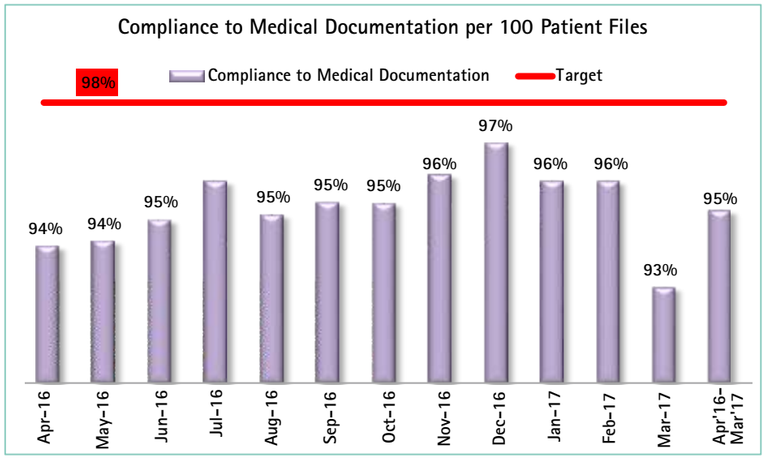
The Anti-Microbial Stewardship program relies on the online availability of microbial and antibiotic resistance information to the Clinician at the bedside. AMS app provides Antibiogram access to clinicians anytime/ anywhere. A mobile app has been launched and CME has been conducted in January 2016. Antibiogram has been prepared using in-house patient flora and microbial antibiotic sensitivity data to inform the rational use of antibiotics.





Compliance to Medical Documentation

Medical documentation is an important input for continuity and safe care. The organization critically examines each and every patient record for completeness and accuracy. The data is accordingly collated for ensuring that improvements are actioned. The rate of compliance has shown an improvement steadily.



ST Elevated Myocardial Infarction (STEMI)

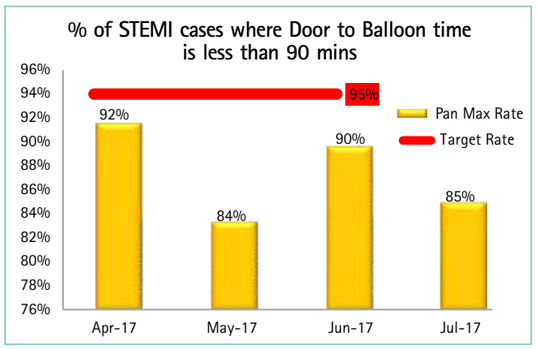
Management of STEMI requires closely knitted functioning of various departments (Eg. Cardiology, emergency etc). As per AHA & American College of Cardiology (ACC), Door to Balloon time of 90 minutes or less is a positive indicator of clinical efficiency & also ensures long term survival of the myocardium.

The **indicator** used for the same is – **"Median Door to Balloon Time"**

Measure of Success – "% of STEMI cases where Door to Balloon time is less than 90 mins"

It is defined as % of patients of STEMI in whom the Percutaneous Intervention (PCI) is performed within 90 minutes since the time of presentation to the emergency department of the hospital. This helps to measure the overall efficiency of the management of acute **STEMI** patients.

Since July 2016, the "Door to Balloon time" has been included in the monthly Executive Dashboard & this year has also been made a part of the Companies measure of success (MOS).



Stroke

IV administration of Recombinant tissue plasminogen activator (r-tPA) is the treatment of choice (unless clinically contraindicated) for Acute Ischemic Stroke. When promptly administered, it can save lives and reduce the long-term effects of stroke. The overall clinical efficiency of the hospital is the "door to needle time" and the acceptable timeline for the same is 60 minutes (or less) considering that there could be patients who present to the hospital late post the onset of stroke. The difference in the time of administration of rTPA & the time of patient's arrival in the hospital is defined as Door to needle time

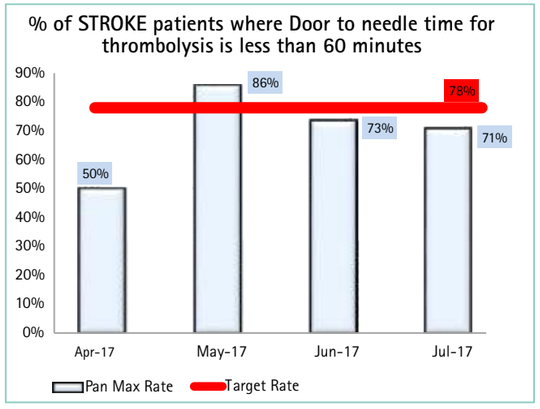
The indicator used for the same is **"Median door to needle time"**

The Measure of Success (MOS) is % of STROKE patients where Door to needle time for thrombolysis is less than 60 minutes

It is defined as % of patients of acute ischaemic stroke in whom the IV bolus of rtPA is administered within the laid down golden hour since the time of presentation to the emergency department of the hospital.

This helps to measure the overall efficiency of the management of **Acute Ischaemic Stroke** patients.

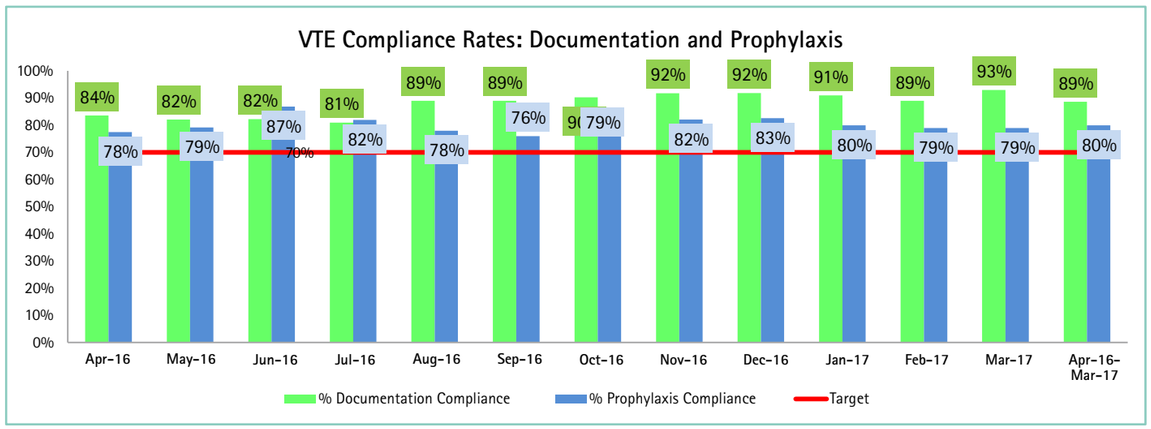
Measurement of this indicator began in September 2016 and is also a part of the Executive Dashboard. This indicator has also been included as a Companies measure of success (MOS) for the MHC network hospitals wherein the number of patients who are administered IV rTPA within 60 minutes of arrival in the hospital is being looked at closely.



VTE Prophylaxis

Venous Thrombo-Embolism (VTE) is a potentially preventable complication in every hospitalized patient. The spectrum varies from asymptomatic DVT (Deep Vein Thrombosis) to sudden unexplained death due to Pulmonary Embolism (PE). Long-term sequelae include chronically swollen leg and venous ulcers which are difficult to manage, and entail considerable costs to the patient as well as the society. Timely risk assessment and appropriate use of prophylaxis to prevent VTE in those at risk is a critical safety practice in MHC.

The organization has taken up an ambitious goal to ensure that all patients at risk for VTE are assessed and given the correct prophylaxis. With close follow up with clinical teams, and indigenously developed software that analyses clinical data, we are able to track improvements efficiently, and use the data for planning interventions in identified areas that need improvement. Clinical alerts are sent to all Clinicians, for patients at risk. In a very short time, the compliance has shown significant improvement.



Patient Falls

Patients are sometimes vulnerable to falling and injuring themselves, on account their illness, age, or medications. MHC has stringent policies in place for fall risk assessment and prevention of each patient. We use the "Morse fall risk" scoring system for adult patients and "Little Schmidy" for pediatric patients. The nursing plan of care is accordingly made for each individual patient, to ensure that the risk of patient falls is minimized. The hospital design and processes ensure that this risk is minimal, such as anti skid flooring in toilets, grab bars, use of bedside rails, seat belts for patients in wheelchairs, and assistance for ambulation. There is a patient safety goal which has been implemented to augment our efforts. In case there is a fall, each incident is reviewed in depth to identify causes and ensure corrective and preventive measures are instituted. The fall rate is also at low levels.

Hospital Acquired Pressure Ulcers

A pressure ulcer, or commonly called a bedsore, is a known cause of pain, and additional treatment for vulnerable patients. Those patients, who are unable to move easily and have reduced circulation or fragile skin, are at risk. Further, prolonged surgery, impaired mental or bowel and bladder function, use of tubes and equipment, inadequate nutrition and fluid depletion may add to the risk. Critically-ill patients in ICUs are at highest risk for the development of new pressure ulcers during their hospital stay. At MHC, we ensure pressures ore prevention care is in place for all patients. These include daily skin assessment and care, regular repositioning, measure and ensure calorie intake, glucose control, and use of special mattresses amongst others. Nurses are trained and competent in these protocols. With all these efforts the HAPU prevalence rate remains at a low level.

Medication Errors

A medication error is an unintended gap in the medication process that leads to, or has the potential to lead to, harm to the patient. These can happen during prescribing, dispensing or administration of medications. The risks are compounded by multiple handovers, multiple steps, and sound alike and look alike medications etc. At MHC, we have developed and instituted several protocols and procedural quality checks at each step of the medication flow process. Staff training is mandatory. The electronic health record and hospital information system is designed for inbuilt safety checks. These include bar coding for

medication administration, allergy alerts, alerts for drug - drug interaction and dosages etc. Each Physician has access to drug information, so that he or she can ensure the correct medication is ordered. High risk medications are double checked. Storage and Labeling is standardized. Infusion pumps are used to ensure correct dosing calculations and administration. Computerized physician order entry at majority of our units ensures legible and efficient medication orders. Generic drug prescribing, brand substitution enables cost effective medication practices. The organization is now introducing electronic prescription systems in OPDs, in a phased manner to further the safety and efficiency of medication practices.

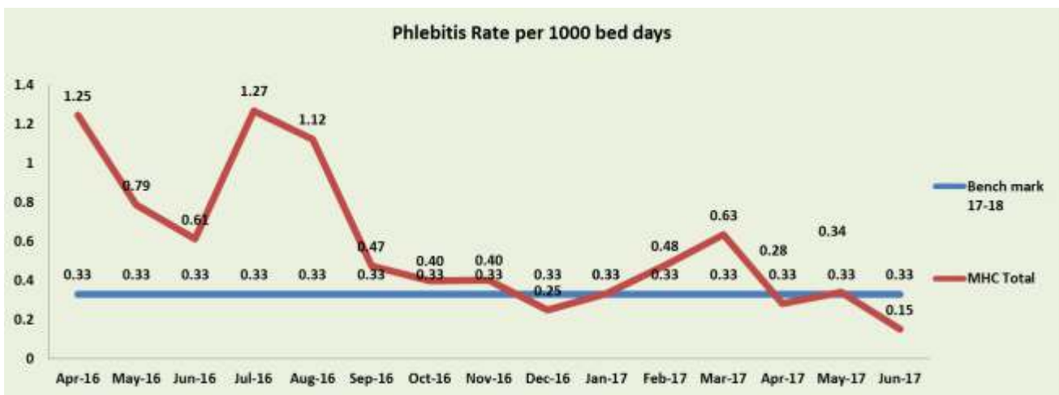
Prescription and medication audits help us as for self evaluation to measure our progress and improve.

Medication error reporting is encouraged, in the spirit of continuous learning and improvement.

Phlebitis

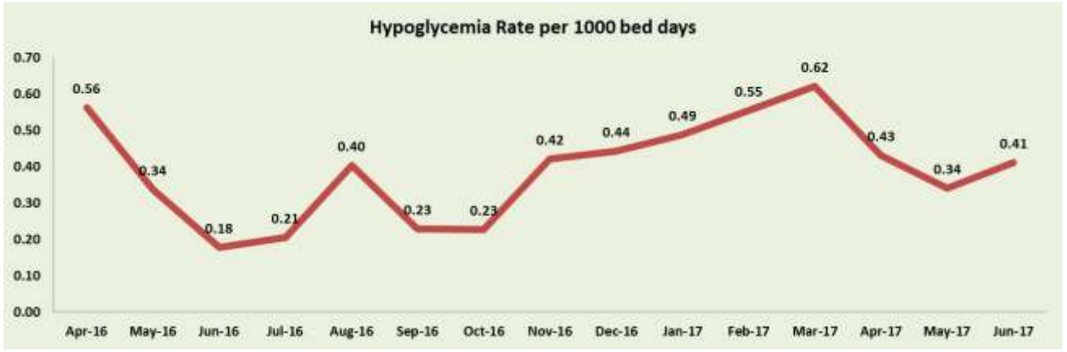
Sometimes phlebitis may occur at the site where a peripheral intravenous (IV) line was started, or blood sample taken.

The surrounding area may be painful or developed a bruise. In rare cases, the same can get infected. It is a constant endeavor of our staff to minimize pain and discomfort to our patients. Protocols for proper hand wash, use of gloves and disinfectants, and certifying competency of our nurses in phlebotomy techniques have helped majority of our patients to have safe and clean procedures. Close tracking of the unintentional phlebitis complication ensures thorough evaluation and insights.



Hypoglycemia:

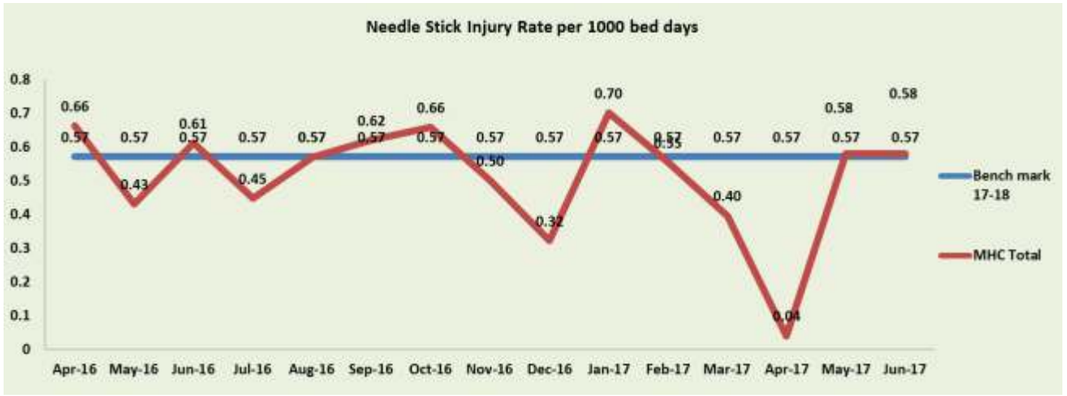
Hypoglycemia occurs when the level of glucose present in the blood falls below a set point (70 mg/ dl). Being aware of the early signs of hypoglycemia is ncessary as it allows to treat the low blood glucose levels quickly - in order to bring them back into the normal range. The main symptoms associated with hypoglycemia are sweating, fatigue, feeling dizzy, weak, hunger pangs, blurred vision etc. hypoglycemia can occur due to various causes like too high a dose of insulin, delayed meals, exercise etc. In the hospitals, paients are educated on the symptoms of hypoglycemia and the actions needed to be taken to correct and prevent it.



Needle Stick Injuries (NSI):

Any injury from a needle/instrument contaminated with patients Blood, Body Fluids or OPIM (other potentially infectious material) is called Needle Stick Injury. In Case of Exposure or Needle Stick Injury, stepa to be take are:

- First Aid - Wash off with soap and water, encourage bleeding, never squeeze, wash copiously with water & find out source
- Reporting – to the Nursing Supervisor, ICN and fill in the Needle Stick Reporting and Incident form
- Testing Titres - of the victim & of self
- Result
  - If positive – take treatment and prophylaxis as per doctor's order
  - If negative inform the patient



Patient Safety Culture Survey

Joint Commission International (6th Edition) has defined "Culture of safety" as "A collaborative environment in which skilled clinicians treat each other with respect, leaders drive effective teamwork and promote psychological safety, teams learn from errors and near misses, caregivers are aware of the inherent limitations of human performance in complex systems (stress recognition), and there is a visible process of learning and driving improvement through debriefings."

There are various methods to evaluate the culture on a regular basis. MHC has adopted the "Agency for Healthcare Research and Quality (AHRQ)" tool for conducting formal "Patient Safety Culture Surveys". This tool helps us to assess how the hospital staff perceives various aspects of patient safety culture & going further in developing the action plan to improve the same.

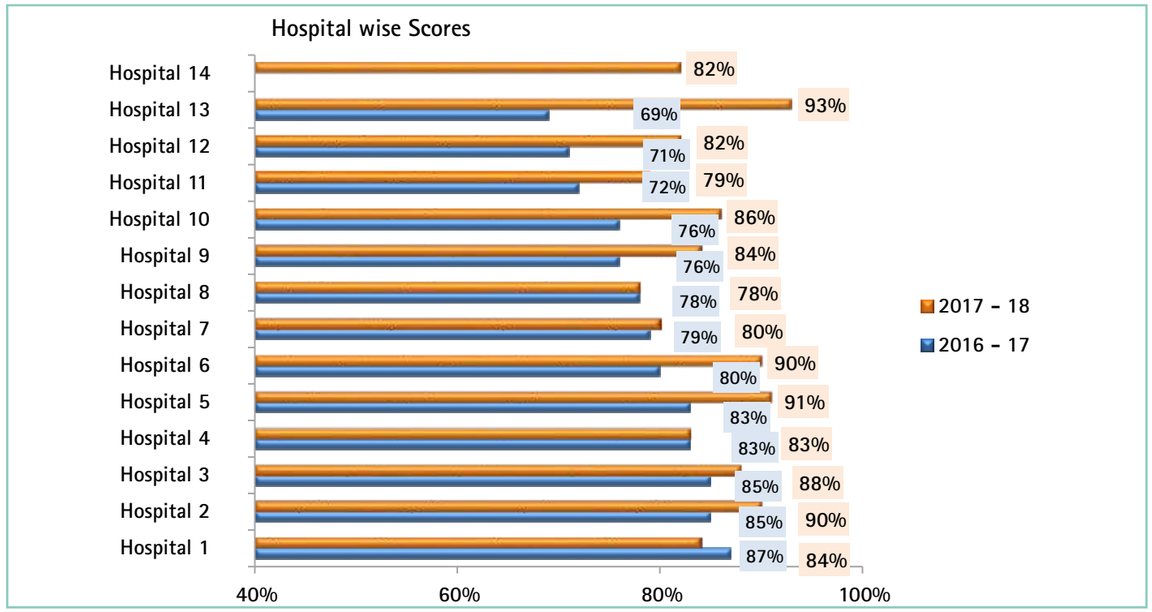
This survey is an annual activity conducted across 14 hospitals of the MHC network where around 30 questions are fed into an online link present on the desk top of all hospital computers. Hospital staff (Physician, Nurses, Physiotherapists, Pharmacists, Technicians, Dentists, Dietician & Medical Administration personnel) is urged to fill the survey within a defined time period. Sample staff required for appropriate completion of the survey (as per internally defined targets) is 50% staff of each hospital. Results are analyzed and reports are formed thereafter.

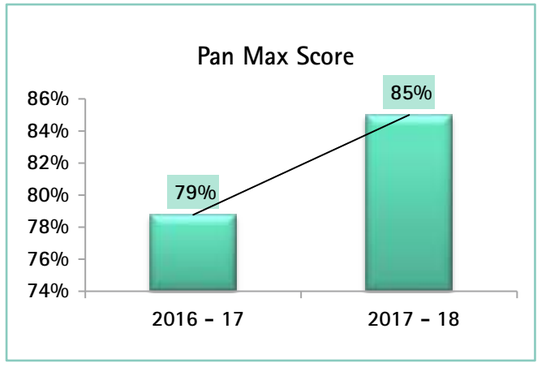
The survey helps evaluate perception and knowledge of staff across MHC on the below listed parameters:

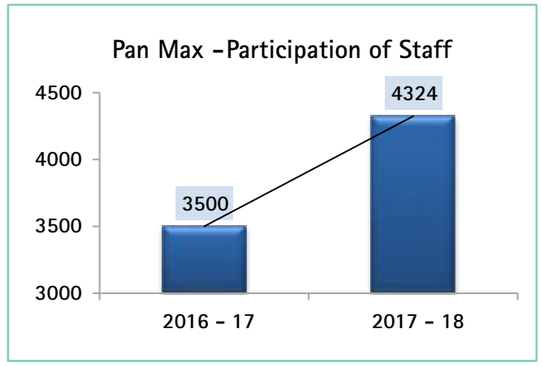
- Communication openness and transparency.
- Feedback and communication about error.
- Frequency of events reported.
- Handoffs and transitions.
- Management support for patient safety.
- Non punitive response to error.
- Organizational learning—continuous improvement.
- Overall perceptions of patient safety.
- Staffing.
- Supervisor/manager expectations and actions promoting safety.
- Teamwork

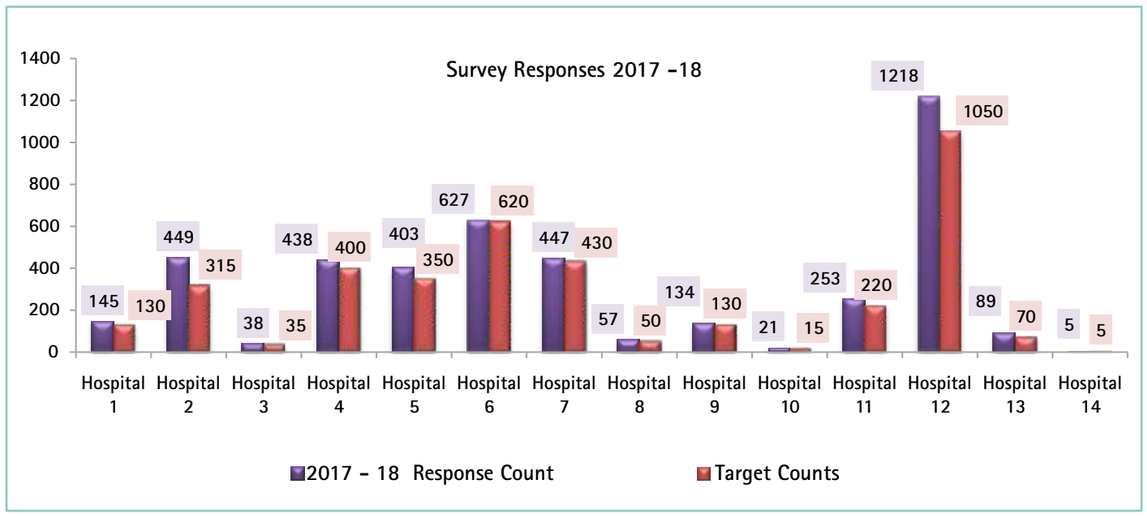
The reports thus formed help the management to get a broad overview and also hospital specific viewpoint on understanding staff perspective on transparency, non punitive working environment, responsiveness and communication, staff confidence and challenges existing in the workplace and accordingly institute measures to address them. The management then needs to identify areas of strength and opportunities for improvement & initiate plans to address gaps.

So far, two rounds of the survey have been conducted in year(s) 2016 – 17 (round 1) & in 2017 – 18 (Round 2).



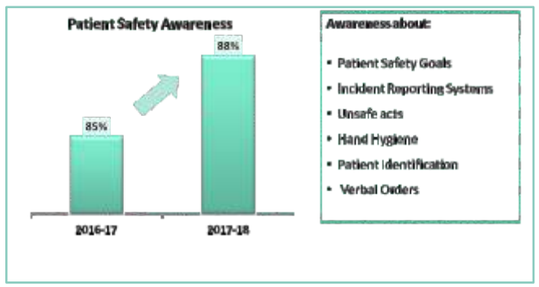


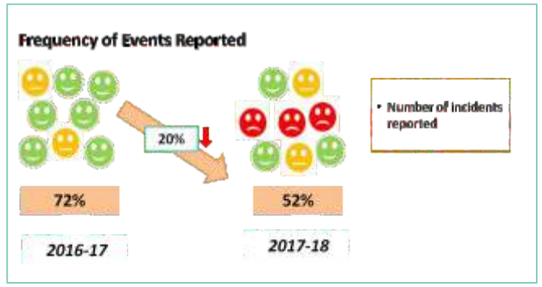


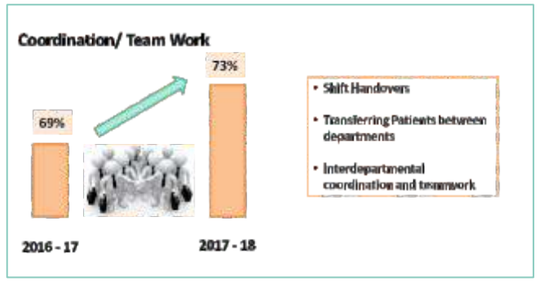


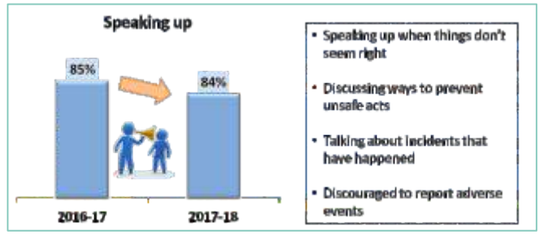
The survey tool consists of the below listed five major sections:

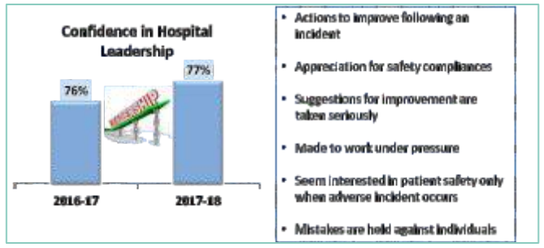
1. Patient Safety Awareness
2. Frequency of Events Reported
3. Speaking Up
4. Coordination/ Team Work
5. Confidence in Hospital Leadership











The participation of staff & overall patient safety parameters scores across Max Hospitals in Patient Safety Culture Survey has shown significant improvement.

Mortality Meetings: Peer Review

Well planned Mortality meetings have helped improve the accountability of mortality data thus enabling quality improvement. It also helps in increasing professional learning as it is conducted with engagement of all stakeholders.The review is done by Peers of the same specialty, as well as multidisciplinary teams where required.

The mortality review process helps systematically examine the circumstances surrounding the care of the patient who died during hospitalisation.

The mortality review process is:

- Use of a preformed checklist to identify triggers
- Setting different levels of Mortality review.
  - **Level-1:** Medical Admin/Quality Team (with in 48 hrs)
  - **Level-2:** Departmental Peer review (within 14 days)
  - **Level-3:** Collation of forms by Medical Admin
  - **Level-4:** Monthly Mortality Meeting
  - **Level-5:** Monitoring and Decisions that needs escalation to be discussed in Medical Advisory Council
  - **Level-6:** All minutes to reach Clinical Director and if needed taken to General Medical Advisory Council
- Holding regular review on the progress of Audits for Mortality meetings
- Sharing of Root cause Analysis and common Learning's from the Mortalities in the form of Mortality Dashboard
- Evaluation of Mortalities in to different categories:
  - **Category I –** Terminal condition at time of admission.
  - **Category II –** Death that occurred due to complications. Death may not have been expected at time of admission, but was expected at time of death.
  - **Category III –** Case of unexpected death.

Level 1: By Medical Admin Team

Evluate as per template (within 48 hours of mortality)

Level 2: Peer Review: Department level MM

Each case is peer review:

- assess Level 1 and complete Level 2 assessment form
- Categorize mortality into # 1,2 or 3
- Mention contributing factors
- Give specific recommendations for improvements (send from to MS within 2 weeks of mortality)

Level 3 : By Medical Admin Team

- Collate all forms
- Tabulate learning's / Recommendations

Level 4: By M & M

Monthly Unit Level Central M & M Under Leadership of Chairperson:

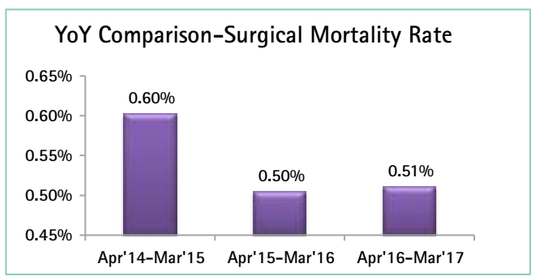
- Discussion of Category 3 mortality
- Agree on recommended solutions
- ATR of previous meetings

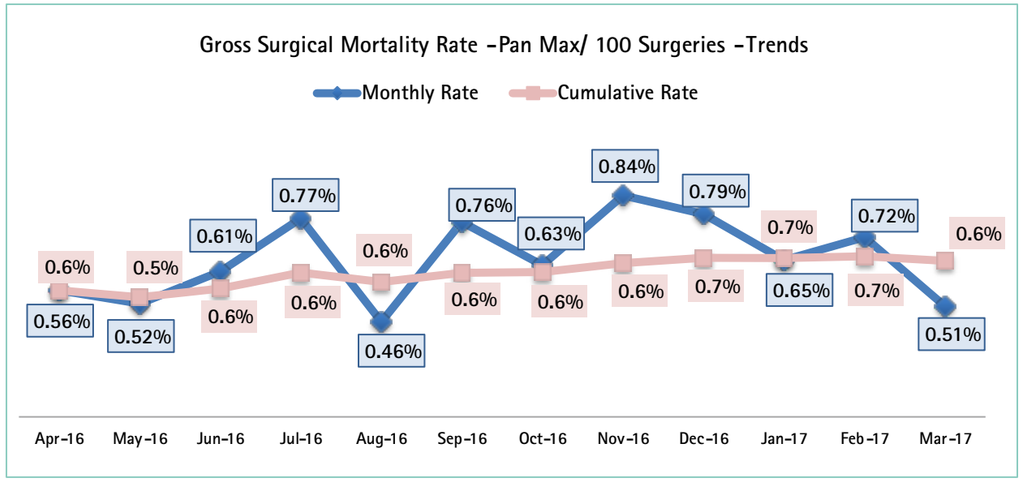
Level 5: By Medical Advisory Council

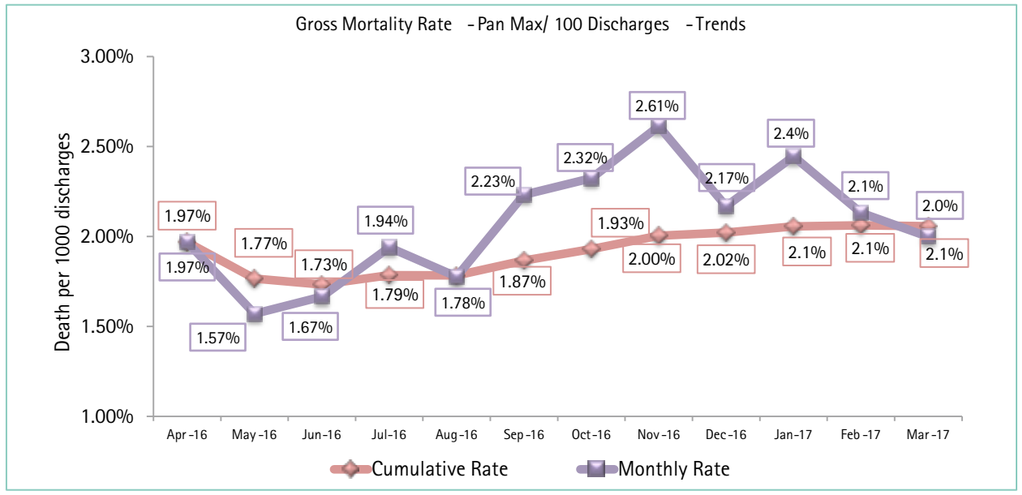
- Monitoring and decisions that need escalation
- Follow up by MS/ Dy MS

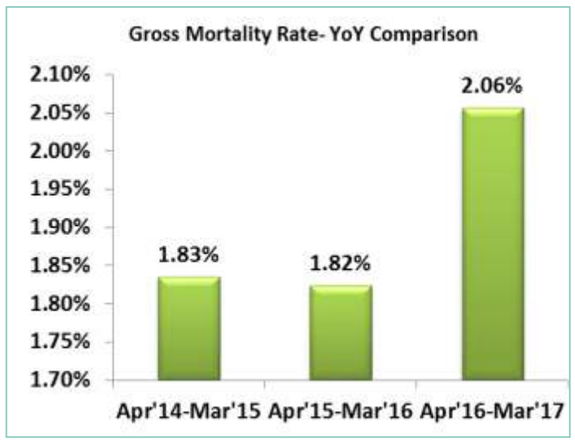
Level 6: Clinical Directorate

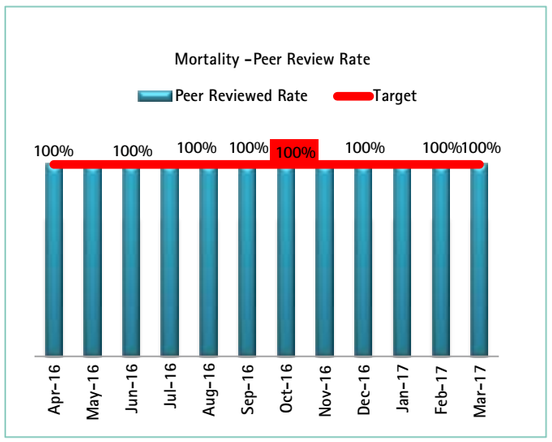
All minute reach CD and if needed taken to General Medical Advisory Council

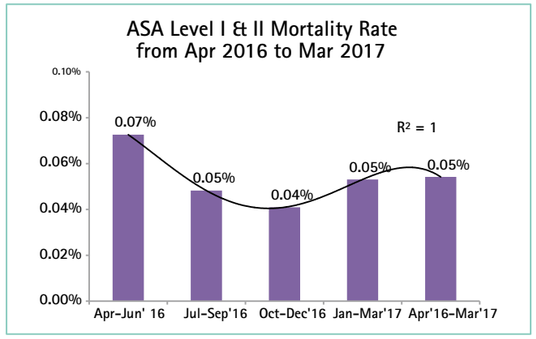


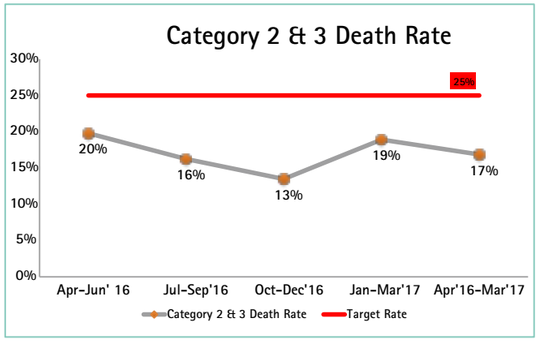












Mortality risk scores

There are many mortality risk scores used in clinical setting to objectively assess and quantify the risk of mortality in a hospitalized patient. These are derived from clinical research and some of them have been extensively used and validated world over. We have picked up a few of the most widely used scores and created a clinical decision support system driven workflow, where these can be entered as a part of the patient record. This helps us to collect structured data on mortality risk for sick/high risk patients. The project aims classify patient mortality vis-à-vis the risk of mortality among critically ill patients or those suffering from high mortality disorders. We have begun with the launch of a mechanism to record and capture the following risk scores:

- Child Pugh Score for Cirrhosis mortality
- BISAP score for pancreatitis mortality
- Sequential Organ Failure (SOFA) Score
- Euro Score II
- APACHE Score II

As we build up the data repository for critically ill patients, many more insights can be generated from the perspective of outcome improvement and research.

Physician Scorecard

Physician score cards have been designed to evaluate "individual physician performance(s)". They have been conceptualized keeping in mind the Joint Commission International standard on "Ongoing monitoring & evaluation of medical staff members (SQE 11)" which requires the hospitals to implement an ongoing standardized process to evaluate the quality and safety of the patient care provided by each individual physician.

The score card consists of measurable elements based on information on behaviors, professional growth & clinical results. Data is assimilated monthly and presented to the department leader who is responsible for analyzing & integrating the same (every quarter) and take appropriate actions.

Based on the results of analysis, actions are instituted accordingly. Main intent of actions taken is to limit risks to patients and improve the quality of care and patient safety.

Around thirty scorecards have been designed for individual specialties.

This initiative has been launched across the MHC network of hospitals. On an average there are around 8 to 10 criteria's consisting of certain common and specialty specific too.

This physician scorecard will really help pave the way for objective evaluation of physician performance.

Sample Physician Scorecards:

Physician Scorecard 2017 - 18																			
Department of Urology																			
Consultant:																			
S. No	Parameters	Unit of Measure	Dept Average	Goal	Bench mark	Apr il	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	YTD	Rating
	Volumes																		
1.	OP Consults	Number																	
2.	IP Admissions	Number																	
3.	Transplants (if applicable)	Number																	
4.	No. of Surgeries performed	Number																	
	Medical Quality & Safety																		
5.	Number of Donors stayed more than 3 Days (policy varies in hubs e.g. 4 days in Saket & 3 Days in Vaishali)	Number																	
6.	Post PCNL stay in ICU more than 48 hours	Number																	
7.	Surgical Site Infection Rate	%																	
8.	Re-exploration Rate (Return to Theatre)	%																	
9.	Re-admission Rate	%																	
10.	Number of Sentinel Events	Number																	
11.	No. of Legal Cases/ Complaints	Number																	

Physician Scorecard 2017-18																			
Department of Emergency																			
Consultant Name:																			
S. No.	Parameters	Unit of Measure	Dept Average	Goal	Bench mark	Ap ril	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	YTD	Rating
	Medical Quality and Safety																		
1	Return to ER within 72 hours with similar complaint and converted into IP	Number																	
2	Door to needle time	Median time																	
3	Patient complaints against particular doctor if it is available																		
4	Door to antibiotic in sepsis cases	Median time																	
5	Acute MI: Door to Cath lab time	Median time																	
6	Number of Sentinel Events	Number																	
7	No. of Legal Cases/ Complaints	Number																	

Physician Scorecard 2017 -18																			
Department of Blood Bank																			
Consultant:																			
S. No.	Parameters	Unit of Measure	Dept Average	Goal	Bench mark	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	YTD	Rating
	Volumes																		
1	Number of Donations	Number																	
2	Number of Transfusions	Number																	
	Medical Quality & Safety																		
3	Donor Adverse Reaction Rate	%																	
4	Transfusion Reaction Rate	%																	
5	Number of Sentinel Events	Number																	
6	No. of Legal Cases/ Complaints	Number																	

MHC Healing Hands Award

This is an annual award which recognizes the Hospital (within the MHC network) with the best score in identified parameters of Clinical Excellence. A trophy is awarded to the best performing hospital.

There are a total of 17parameterswhich are reviewed, modified and updated annually. All the identified parameters are measurable and critical to quality and safety.

The award generates a great sense of excitement & enthusiasm amongst the individual hospitals who really work hard throughout the year to achieve it.

S. No	Categories	Individual Parameters
1.	Process Indicators	Compliance to Medical Documentation Rate
2.		Average TAT: Admission to medication Order in Ward
3.		% of Peer Reviewed Death (Level 2)
4.		Rate of Compliance to VTE Risk Documentation
5.		Rate of Prophylaxis compliance Documentation
6.		Patient Safety Culture Score
7.	Outcome Indicators	Central Line Associated Blood Stream Infection rate
8.		Catheter Associated Urinary Tract Infection rate
9.		Ventilator Associated Pneumonia Rate
10.		Category 2 & 3 Death Rate
11.	Training Indicators	% of Trained Doctors with current certification
12.		% of new Resident Doctors undergone induction
13.		% of new Doctors undergone E-learning
14.	Others	Awards and External Recognitions
15.		Research Publications
16.		QI projects carried out in the year
17.		Publications related to Quality & Safety

Use of Technology for Patient Safety

Ward Monitoring System

Patient care in wards caters to majority of patients in a hospital delivery system. But the sudden reduction in monitoring and surveillance levels as compared to ICU/HDU creates a gap in continuity of care.

A need was felt to address this gap and provide remote continuous monitoring in wards. Continuous monitoring in wards not only reduces sentinel events and cardiac arrests occurring in the wards, it also helps reduce ICU stay and enhances recovery. A reduced stay in ICU reduces chances of ICU acquired infections, mitigates ICU psychosis and allows family and attendants to be around the patient - leading to better overall well-being of the patient. The Clinical Directorate team evaluated several Ward Monitoring Solutions, conducting extensive pilots with defined MoS (Measures of Success) at different units. We decided to collaborate with Vios Technologies as Vios Monitoring System (VMS) provided a real time reliable vital measurement, Bluetooth and wi-fi connectivity, easy remote access to vitals and device portability leading to flexible bed management.

Vios Ward Monitoring System (VMS) is a remote monitoring and alarm notification system that allows continuous monitoring of vitals such as SpO2, Heart Rate, Respiratory rate, BP and ECG. Alarm thresholds for each vital can be customized for each patient. The system has two sensors – a small chest sensor and a clip like sensor on the finger. The sensors communicate wirelessly via blue-tooth to a bed-side tablet that shows all the vital trends and ECG. The vitals trends, ECG and alarms can then be remotely accessed via internet through a desktop allowing Nurses to monitor patients from the Nursing Station. Clinicians can also remotely access patient vitals and historical trends via a web link or mobile app.

In adherence to our efforts towards patient safety and medical excellence, we plan to implement Ward Monitoring Technology pan Max by the end of FY 17-18.

Fig - Vios remote monitoring system architecture and components

Fig - Vitals can be accessed via tablet, desktop monitors or smartphones

Newborn Screening Tracking and Vaccination Management Solution

A comprehensive screening of a newborn child is an essential step in ensuring the future health and well being of the child. While Max has a screening system in place, a gap was felt in terms of tracking the results, communication with parents and ensuring regular vaccinations post discharge. We plan to collaborate with expert partners to help provide a comprehensive screening and vaccination solution to babies born at Max.

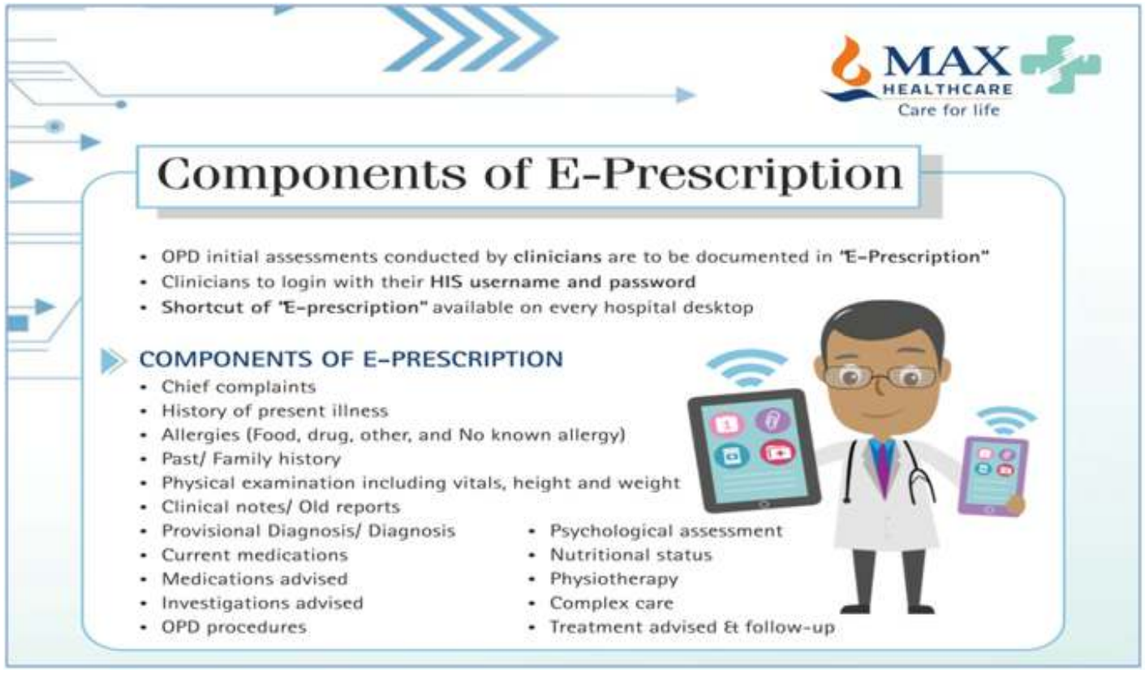
Northgate Newborn Screening and Vaccination management solution is being used by the NHS in UK to manage and track its Newborn Screening program since the last 14 years (more than 15 Million babies screened so far). It enables screening management for Bloodspot Screening, Hearing Screening, Physical Screening as well as Pulse-oximetry. The status of the sample and results can be accessed online by Paediatricians, Nurse, Lab technicians, Hospital management, as well as parents using any mobile or desktop devices. The solution also provides vaccination alerts to parents and hospital thereby ensuring well being of the child over the period of years.

E Prescription for OPD Initial Assessment

The OPD initial assessments conducted by clinicians are to be documented in "E Prescription". The MHC network of hospitals is in the process of adopting "Electronic (E) prescription" in the OPD settings due to its yielding substantial benefits to patients and physicians. Electronic transcription & exchange of prescription information improves prescription accuracy & saves time. E prescription practice in the OPD helps prevents prescription errors, support medication reconciliation process and helps provide important notifications (allergies, drug interactions & other clinical alerts). Patients and pharmacists no longer have to rely on and interpret hand written prescriptions thus reducing the potential for errors. It also helps in retention of OPD records.

Clinicians are supposed to login with their HIS username and password on the shortcut of "E prescription" available on every hospital desktop. The components of initial assessment for every specialty have been defined.

Currently, e-prescription has been successfully implemented in Max Patparganj, Saket & Gurgaon



Continuous Professional Development & Education

Max Healthcare is a "Teaching & Learning Organization". The leadership team works on the belief that academics and on the job performance have a very high correlation. In the healthcare space, the nexus between education, training & patient outcomes is even more acute. Therefore, we are proud to house a number of formal educational courses and programs which imbibe with the spirit perfectly. The programs have adapted the best practices to offer training & support to the candidates.

MedInduct: A Foundation course in Clinical Excellence

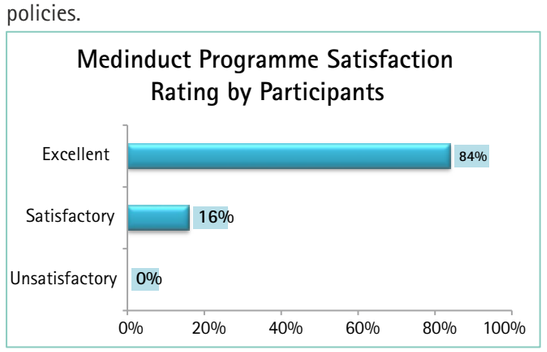
This is a two day induction program exclusively designed for doctors who have newly joined the organization. This program is held minimum once every month. The main objective of this program is to provide an introduction and broad overview to the organization. It also helps aligning them with the MHC vision of delivering high quality and safe patient care with a humane touch.

This program helps make the doctors aware of best practices being used in the organization which not only enables them to deliver their current roles effectively but also provide a good foundation for their future aspirations.

The topics of the program revolve around 3 domains – Organizational, Behavioral & Technical. A "Certificate of Participation" is provided to all participants at the end of the program.

A total of 32 programs have been conducted so far (Sept 2014 to Aug 2017) and more than 1000 doctors have been trained.

The modules covered in MedInduct include an introduction to the organization, behavioral life style modification training, nursing interaction, communication in healthcare settings, important technical topics on safe patient care practices, medical documentation standards, infection control, medication safety, emergency preparedness and patient safety policies.



Program Glimpses:

Max Higher Studies Scholarship Program (MHSSP)

Clinical Directorate launched the MHSSP in the year 2015-2016. Since the inception of the program, every year MHC has provided around 10 scholarships to clinicians across the Max network. The scholarships are provided for higher studies through a transparent scoring system for Clinicians to undergo training to upgrade their skill sets (Maximum course tenure of eight weeks). Scholarships can be availed for courses where clinician identifies the course to be pursued or where MHC has a structured relationship with a particular renowned institute of stature.

Objectives:

- To enable clinicians to pursue higher studies to enhance skills
- To facilitate and support needs of clinicians
- To encourage clinicians to work towards skill enhancement to build excellence
- To improve the quality of workforce in MHC
- To place MHC as a preferred employer for clinicians
- To improve retention
- To address clinical gaps within the system

Max Institute of Medical Excellence (MIME)

The office of Max Institute of Medical Excellence (MIME) was established to meet Max Healthcare's vision for providing the highest quality of patient care and to establish a centre of excellence in training and education.

Its objectives are:

- To develop individuals valued in healthcare as change catalysts who will transform the existing healthcare system in India
- Provide career advancement and lifelong learning opportunities through a center of excellence of continuing education
- Design and develop skilling, workshops, short courses, continuous skill up programs relevant to the sector
- To place patient care at the forefront of all education and healthcare delivery initiatives

MIME – Key highlights:

Five new fellowship programs launched:

- Fellowship in Rheumatology
- Fellowship in Oncology
- One day skill course in Chemoports
- Fellowship in IVF
- Fellowship in Bariatric Anesthesia

Conducte d international exams:

- FRCEM since last 2 years
- MRCP (PACES) starting from Feb' 18

A total of 18053 candidates have been trained till date

Number of trained students in the FY 2015 – 16 are:

- **218** Diplomat of National Board (DNB)
- **30** Masters in Emeregency Medicine (MEM)
- **1693** American Heart Association (AHA)
- **4056** Max Emergency Life Saver (MELS)
- **407** Internship
- **22** Fellowship
- **68** Observership
- **400** International Exams (MRCEM/FRCEM)

Masters in emergency Medicine program expanded to 4 units:

- Max Smart Super Speciality Hospital, Saket
- Max Super Speciality Hospital, Patparganj
- Max Super Speciality Hospital, Vaishali
- Max Super Speciality Hospital, Dehradun

Diplomat of National Board:

- MSSH, Saket is appointed as an Examination centre for FNB and Super Speciality NBE exams.
- MSSH Mohali, MSSH DDN and MSSSH, Saket are now DNB accredited institutes.
- Transition of FNB – Cardiac Anaesthesia into DNB Cardiac Anaesthesia Program.
- DNB Residents from the dept. of Radio Diagnosis win "The Delhi Imaging Update – Annual Conference"
- For the first time we crossed the 200 students mark in DNB Broad and Super Specialities across all units and therefore MIME is ranked no. 3 across India with the highest no. of residents.

Other achievements:

- First Aid trainings were extensively delivered in Schools and Corporate Companies to build awareness and preparedness for generations to come.
- Video conferencing is the preferred medium of teaching to impart knowledge by world standard faculties to students.

Clinical Radiology Pathology (CRP) Meetings

CRP meeting is conducted on a monthly basis through Clinical Directorate (CD) and MIME Dept since March 2015 for DNB candidates at Saket Complex.

The objectives are:

- To impart knowledge to DNB candidates on unique clinical cases experienced by clinicians in various specialties that can provide some interdisciplinary learning to students from other specialties
- To encourage coordinated thought process and learning between Clinical departments and Diagnostic departments i.e. Radiology and Pathology.

All the cases are presented by the DNB candidates of Clinical, Radiology and Pathology departments under the supervision of faculties of the respective departments. In one meeting around 3-4 cases are presented by two clinical departments supported by Radiology and Pathology. DNB candidates, Senior Residents and Consultants from all the departments attend the session and key take home messages and learning's are discussed with the group.

12 CRP sessions were conducted in FY 16-17, covering around 20 clinical specialties.

Access to Journals – Elsevier Clinical Key

In order to equip our Clinicians and DNB students with the best knowledge sources to conduct research and practice evidence based medicine, Max has obtained subscription to Elsevier's Clinical Key. Clinical Key provides access to extensive list of publications encompassing a wide range of specialties and has the following features -

Resources:

- Clinical trials from the ClinicalTrials.gov database
- 50+ Clinics and 300+ Procedures Consult videos and articles
- 17,000+ medical and surgical videos
- 850+ First Consult monographs
- 1,000+ reference books
- 600+ journals
- 2,200,000+ images
- 2,900+ drug monographs
- 4,500+ practice guidelines
- Fully indexed MEDLINE

Other Features:

- Access to the industry's most complete collection of medical and surgical content indexed on a daily basis
- Optimized for mobile use
- SmartSearch – answers to direct diagnosis or treatment questions, relevant results on top, saved searched from previous sessions
- Easy process of sharing and editing content
- Ability to store/tag content for later use or reference

Workshop on "Communication Skills in Healthcare"

Healthcare communication holds a very important place and plays a vital role for ensuring patient safety.

Emergency department staff forms the front line face for receiving all patients and attendant's and handling them in a crisis situation. Not alone the words spoken by them to address the patients and attendants but also the manner and tone matters. Also, they deal with critical situations, like violent patients, serious patients, brought dead etc. This requires great presence of mind, calmness and control on their words and emotions to handle the situation.

Thus, keeping the above in mind, a one day workshop on "Communication Skills in Healthcare" was organized exclusively for the ER staff Pan Max consisting of doctors and nurses in July 2017.

The workshop was acclaimed with great excitement and success with around 50 participants attending it at a Pan Max level, including doctors (HOD's and a mix of middle to senior level doctors) & nursing staff. It was conducted by an expert faculty and was a min. of didactic sessions & role plays.

The objective of the workshop was to help share the importance of communication in healthcare settings and impart tools and techniques to develop additional layers of expertise and competence to current professional capabilities, namely excellent inter and intra communication skills with particular emphasis on patient care.

A Certificate was provided to all participants on completion of the course.

Nursing Quality, Education and Training at Max Healthcare Overview 2016 - 17

Nursing Training:

Being a leading healthcare service provider, Max Healthcare has a multidisciplinary, team-oriented work environment that provides endless growth opportunities to nurses. We, at Max Healthcare (MHC) believe in preparing nurses with professional excellence, critical thinking, social awareness, and competencies meeting the nursing credentials.

The objectives of the training department are:

- To develop quality learning models for Max Nurses
- To design and create growth avenues for nurses at Max
- To establish cost effective ways of teaching and learning
- To influence policy and practice in nursing education and quality through evidence based practice

The training department endeavours to prepare nurses to assume the conventional, extended and expanding roles of practitioners, educators and managers. The nursing programs at Max Healthcare provide a range of growth opportunities to Max nurses in various areas including Wards, OT's, ICU's, ER, and Specialized Wards. With excellent continuing education programs and extensive benefits, Max Healthcare remains a premier nursing destination.

Titrated Training Ladder:

Video Based Learning:

MHC Nursing, in collaboration with Max Skill First has developed video based learning program's with the intent is to improve communication between patients and staff for various situations of customer handling. The program benefits nurses by providing a better understanding of the patient experience and allowing them to engage in service recovery, if needed. Lastly, the program provides opportunities for both employee recognition and process improvement.

Nursing Quality:

As part of Max HealthCare (MHC) commitment to patient centered care, the Nursing Department is actively involved in quality improvement initiatives focused on measuring and improving patient outcomes.

MHC prioritizes quality improvement initiatives based on the positive impact the plan will have for patients and their families. In addition to meeting internal goals based on our own monitoring and reporting and strictly adhering to Indian laws that influence improvement priorities, we also initiate quality improvement programs to meet external goals, including the Joint Commission's Patient Safety Goals.

At any given time there are numerous improvement projects going on at MHC. We invite you to explore some of the projects/ initiatives driven by nursing.

- **Hourly Rounding:** Purposeful Rounding seeks to improve the patient experience through the use of a structured hourly rounding routine. Nursing leaders and managers developed the Hourly Rounding protocol for MHC addressing 4 P's. This initiative, launched, has been widely proven to improve patient outcomes and satisfaction.
- **Improving the effectiveness of Nurses Shift Handover:** Bedside Handoff is a time when responsibility and accountability of care is transferred from one nurse to another at change of shift. Handoff provided an opportunity to improve communication between nurses and increase patient safety. Since structuring Bedside Handoff on several units, some of our key quality indicators have shown improvements.
- **Team Care:** To live up to our mission and to meet our patients' expectations, launched "team care", a new program that critically examines and improves the patient experience from admission through discharge.
- **Improving compliance to Bar Coded Medication Administration (BCMA):** Launched with the aim to reduce medication errors by providing additional safeguards for staff to better protect patients from transcription, dispensing and administration errors through positive patient and medication identification
- **Implementing 5 S management methods for lean healthcare:** By committing itself to the customer experience and utilizing an approach that deters and eliminates waste, MHC set its path for continuous improvement and success through 5 S projects.
- **Infection prevention and control:** Is always been boosted by Quality Improvement projects at MHC, like reduction in CAUTI, VAE and preventing SSI with the strategies of patient education.
- **Safe Insulin Management:** The project examines strategies for improving the quality of care for adult diabetic patients, through changes in nurse's knowledge and skills on safe insulin administration.
- Reduction of non-nursing hours of nursing staff: Reducing non-value-added activities in nursing by introducing floor executives has increased the nursing work efficiency and ensures time for patient care, thus improving the quality of nursing care.

A Snapshot of Awards & Accolade to Nursing:

- World conference on quality and improvement 2017 (WCQI) organised by American Society for Quality (ASQ) on 3rd May 2017 in Charlotte, USA has given "Certificate of Appreciation" to MHC Nursing for "Achieving nursing excellence – For Excellence in community impact"
- Semi-finalist award in 28th Qimpro Convention.
- Winner of AHPI Healthcare Excellence Award 2017.
- AHPI Nursing Excellence Award.
- Max Healthcare - First in Delhi to bag NABH Nursing Excellence Certification.
- BW healthcare Award.
- ABP Healthcare Leadership Award.
- ABP News award.
- NW - Qwaltech Award.
- Various awards in the category of Poster presentation in MHC Annual safety conference
- Significant Contribution Award for Nursing at MHC AIIMS 2016.
- Awards in various categories at CAHOCON 2017.

MHC Representations in Knowledge Sharing:

National representation at:

- Smart Nursing Conference, Delhi
- Rajiv Gandhi Cancer Institute Research Centre , Delhi
- Critical care society of India ,Mumbai
- Infusion Nurses Society
- Annual National Nursing Conclave by Apollo hospital
- CAHOCON 2017

International representation at:

- 2nd global nursing Management & Innovation forum ,Berlin
- Semi-finalist award Best attendee choice award (Community impact) ASQ - 2017- Charlotte , NC, USA

Nurse Practitioner in Critical Care Residency Program (Indian Nursing Council Recognized)

Overview:

Nurse practitioners (NP) are advanced practice registered **nurses who have** completed an advanced degree program that allows them to practice independently. They help assess patients, order and interpret diagnostic tests and initiate and manage treatment plans.

In other countries (US & UK), the role of NP also includes:

- Advanced problem-solving skills
- Critical thinking skills
- Decision-making skills for practice
- Research translation skills for quality improvement

Indian Nursing Council (INC) has announced the NP Program first time in India in the year 2016. Only 23 Institutions across the country have been able to fulfil the required criteria prescribed by INC to start the program. Max Healthcare is one of them

Eligibility criteria:

Bachelor of Science (B.Sc)
- One year of clinical experience
- Both Max employee and outside Max employee

Post Basic
- One year of clinical experience
- Both Max employee and outside Max employee

Master of Science (M.Sc)
- Optional
- Both Max employee and outside Max employee

Entrance test:
A Common Entrance Test is conducted by Guru Gobind Singh Indraprastha University

Units of Max Healthcare who have opted for the course are:

S. No.	Hospital Name	No. of seats
1	Max Super Speciality Hospital, Saket	20
2	Max Super Speciality Hospital, Shalimar Bagh	5
3	Max Super Speciality Hospital, Patparganj	20

Annual Outcome Report - Emergency Department

Introduction

The Emergency department at Max Healthcare cares for over 2,50,000 + adult and pediatric patients every year. Efforts are made to deliver world class care, therefore international protocols are followed in acute care management, particularly for heart attack (MI), stroke, abdominal emergencies and polytrauma). Network wide data is collected and reviewed monthly to ensure continuous improvement in quality of care. Our motto, "Every patient to the right clinician at the right time in right clinical setting" is our driving force and our source of inspiration towards high quality patient care and treatment.

Our patients can expect Safe, Effective, Patient Centered, Timely, Efficient and Equitable Care at all times from our emergency department. Our main focus areas include:-

- Trained, qualified and skilled staff
- World class infrastructure like waiting area, vulnerable area, triage, equipment maintenance etc
- ER processes and protocols(Head injury, MI, Stroke, Sepsis, Major Trauma), Triage instruments
- Coordinated emergency care throughout the patient pathway
- Monitoring and Knowledge of outcomes such as mortality and morbidity review, complaint monitoring to highlight system and/or individual failure.
- Commitment: Adequate resources (finance, equipment, infrastructure) and active visible management engagement with ER...leading to empowered motivated staff.

Emergency department constitutes one of the most vital departments of a hospital. Infact, it serves as one of the first interfaces between the hospital and the patient(s) wanting immediate treatment. They also serve as critical points of care at some of the most life-threatening moments in our lives and those of our loved ones.

Keeping the above in mind, an effort was undertaken to standardize and uplift the ER departments across the Max network of hospitals.

ER Motto

Every Patient to the **Right** Clinician at the **Right** Time in the **Right** Clinical Setting

International Federation of Emergency Medicine

The "International Federation of Emergency Medicine (IFEM)" aims to publish standards for emergency care with the purpose to improve the emergency care being provided around the world. The standards assist both managers and clinical staff to deliver improvements.

A questionnaire was adapted from IFEM standards to assess the emergency departments of Max Healthcare on parameters listed. Based on the feedback, the Max ER's were benchmarked into various levels and certain measures which were not captured at all were introduced (like the IMRB feedback scores etc)

Levels of ED Services

Levels	Scope of Services	Max ER Units
Level 1 (Primary Care)	First aid/treatment–transfer to higher level of service if reqd. **Scope:** • Minor ailments and minor injuries. • Pathology sample collection, X ray, Treatment room, ECG. • Ambulance available on call. • Hours of operation may be 12 hrs. • Resuscitation(BLS & ACLS)	• Panchsheel • Onco Day Care at Lajpat Nagar • Pitampura
Level 2 (Secondary Care)	**Level 1 Plus** **Scope:** • 24 hour RMO available onsite. • Specialist in surgery, anesthesia, pediatrics, medicine, Gynaecology, orthopedics available for consultation and on call. • Pathology, Radiology, OT &other diagnostics available during normal hours, and on call • Access afterhours. • Ambulance transfer to higher center available, • Can manage most emergencies including trauma	• Noida • Pitampura • Greater Noida
Level 3 (Tertiary Care)	**Level 2 Plus** **Scope:** • Can manage all emergencies • Has staff trained in EM and all specialist including Neurosciences and Cardiacscience, available on roster or in house • Capacity for - Frequent major trauma and - Other life-threatening emergencies. - Complete back up of indoor and critical care facilities. - Provides advice and stabilization for complex cases referred from other network centers. - Serves as tertiary referral centre for other lower level facilities.	• Bhatinda • Dehradun • Gurgaon • Vaishali
Level 4 (Quaternary Care)	**Level 3 Plus** • Provides care in case of high Acuity and • High volume load	• Saket Complex • Patparganj • Shalimar Bagh • Mohali

Reference:
International Federation for Emergency Medicine
Criteria chosen: Complexity and acuity of care (Transplant, Trauma and ER conversion) and ER volumes (annual footfall)

Expectations – Max ER

Expectations of Patients	Deliverables
Safe	Avoiding harm to patients
Effective	Providing services based on scientific knowledge to all who could benefit, and from refraining from providing services/ care to those not likely to benefit
Patient Centered	Providing care that is respectful of and responsive to individual patient preferences, needs and values
Timely	Reducing waits and sometimes harmful delays
Efficient	Avoiding waste (personnel, resources, finance)
Equitable	Providing care that does not vary in quality because of personal characteristics

ER Governance Model: Central Emergency Service Committee (CESC)

ER is best managed at site level. However across network there is a need for standardized training, credentialing, guidelines, and quality controls. Therefore network wide administration with responsibilities in each of the above areas was formed. Strategically shifting from one Chair to an Executive Group- with clear accountabilities - CESC (Central Emergency Service Committee)

Purpose:

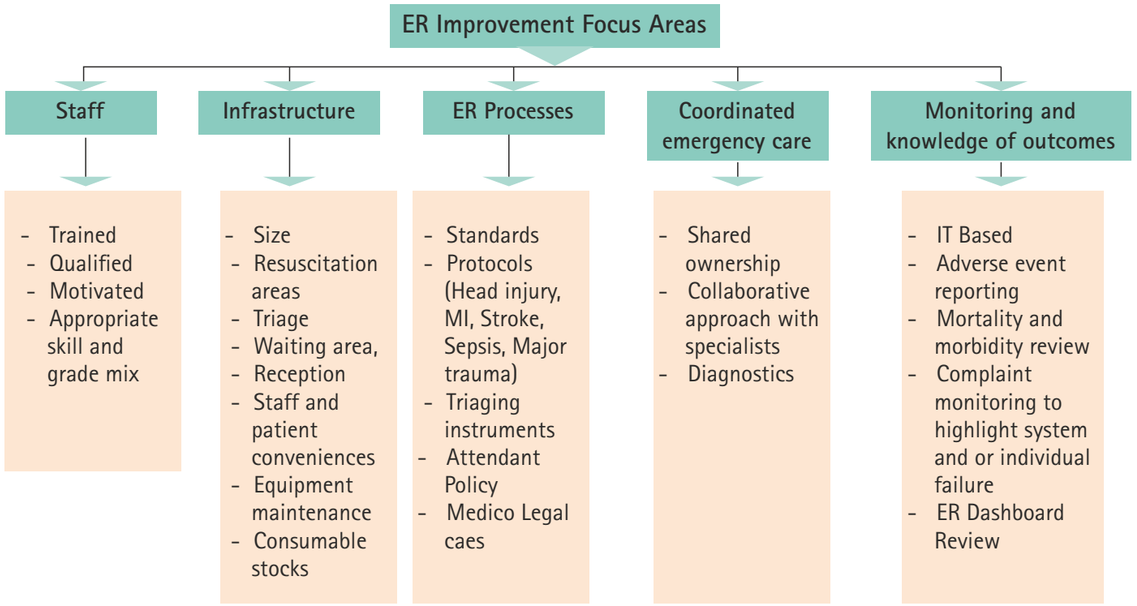
The purpose of forming the "Central Emergency Services Steering Committee" is to lead performance improvement efforts in all facilities of Max HealthCare through the development and implementation of an organization-wide Emergency Management Program within the service specifications of current facilities

Objectives:

- To develop a short, medium and long term strategic plan for the Emergency services across all facilities
- To use defined key indicators capable of showing improvements in emergency preparedness and/or management in reviewing performance
- To conduct effective review and performance monitoring of emergency services across the network
- To develop and implement standards, SOPs, Clinical Guidelines for all levels of care
- To review infrastructure, equipment, staffing levels and ensure that the same is upgraded to meet patient care needs, within the scope and volumes of the service
- To identify and facilitate staff credentialing, training and upskilling

The committee composition consists of the Clinical Director as chair and co-chaired by an Emergency Head of unit nominated for one year. Members & invitees consist of ER heads from across the network and Head of Sales and Marketing, Legal, Medical & Service excellence, Home care & Nursing department.

The committee meets once in a month to review the ER Dashboard collected across the network and take steps towards improving care in Emergency department.

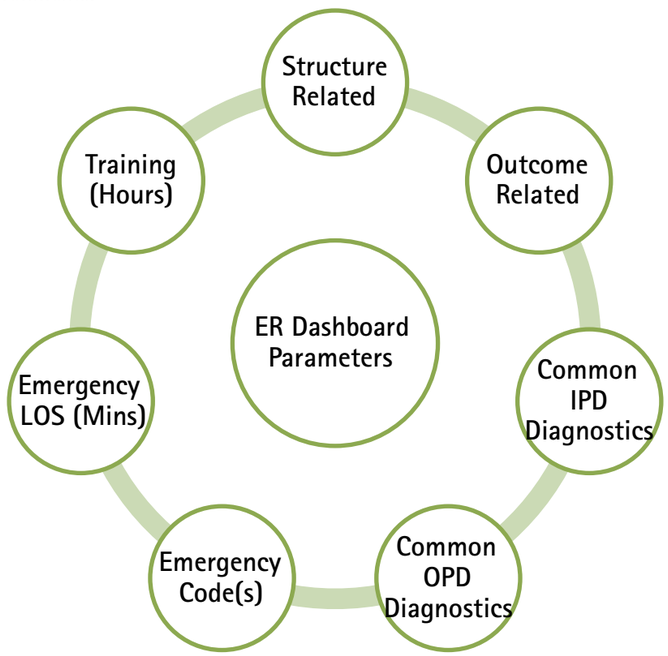


Emergency (ER) Dashboard

The ER dashboard helps provide up-to-date information on vital parameters which assist hospital management, clinicians and staff to monitor and manage the flow of patients in the emergency departments and inpatient units of busy hospital environments.

Process:

The ER dashboard parameters consist of 7 major sections which together enable information to be monitored.



Structure Related	1	Total footfalls
	2	Patients leaving prior to evaluation
	3	Negative VOC's (People, process, product)
	4	Median Length of Stay in Emergency: (in Mins.)
	5	Median length of stay in ER to ward (in Mins.)
	6	Median Length of Stay in Emergency to ICU: (in Mins.)
	7	Median length of stay in ER to discharge (in Mins.)
Outcome Related	8	Return to Emergency within 72 hours presenting with similar complaints
	9	Total referred to another hospital (MAX network and outside)
	10	LAMA Cases
	11	Total Number of Mortalities in ER
	12	Total Number of Mortalities (brought dead)
	13	Total Patients shifted to Day care facility
	14	No. of cases of bad media publicity
	15	ER To IP Conversion (number)
	16	ER To IP Conversion (%age)
	17	Total Number of Discharges
	18	Satisfaction scores (IMRB)
Clinical Protocol Compliance: Common IPD Diagnostics	19	Total Stroke Patients
	20	Acute stroke: Door to CT/ MRI (Mean time)
	21	Total STEMI Patients
	22	Acute MI: Door to Cath lab time (Mean time)
	23	Total Trauma Patients
	24	Code polytrauma response time (Mean time)
	25	Total Sepsis patients
	26	Septic shock: Door to antibiotic administration (Mean time)
Clinical Protocol Compliance: Common **OPD Diagnostics**	27	Fever Under Evaluation
	28	Acute Gastroenteritis
	29	Non Specific Chest Pain
	30	Abdominal Pain- Acute Gastritis, Ureteric Colic
	31	Bronchial Asthma Exacerbation
	32	Vertigo & Giddiness
	33	Vaso vagal Syncope
	34	UTI
	35	Simple Soft Tissue Injuries- Ankle Twist, Fall
	36	Hypertensive Urgency
	37	Paroxysmal Supra Ventricular Tachycardia (PSVT)
	38	Lacerated Wounds Requiring Suturing
	39	Upper Respiratory Tract Infection
	40	Any Other diagnosis
Emergency Code Compliance	41	Code STEMI (announced)
	42	Code TRAUMA (announced)
	43	Code STROKE (announced)
	44	Percentage of patients attended by concerned specialty within 60 minutes
Emergency LOS (Mins)	45	Total patients staying in ER beyond 4hrs (240 mins.)
	46	% of patients staying in ER beyond 4hrs (240 mins.)
Training (Hours)	47	EMO Training Hours (as per training calendar circulated)
	48	Nursing Training Hours (as per training calendar circulated)
	49	Paramedical (as per training calendar circulated)

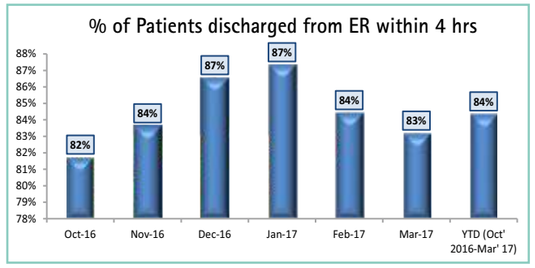
Important ER Indicators

1. Percentage of patients discharged from ER within 4 hours:

This indicator captures the proportion of patients who got discharged from ER within 4 hours. It is required that patients coming to emergency department must be seen, treated, admitted or discharged in under four hours.

A lower percentage of such patients signify inefficiency in the ER and hospital operations team. This will result in overcrowding in the emergency department leading to lack of equal care to each patient and higher cost of operation.

The below data represents the median figures collected for 12 Max units (secondary & tertiary care hospitals).



2. Median Length of Stay in Emergency (In Minutes)

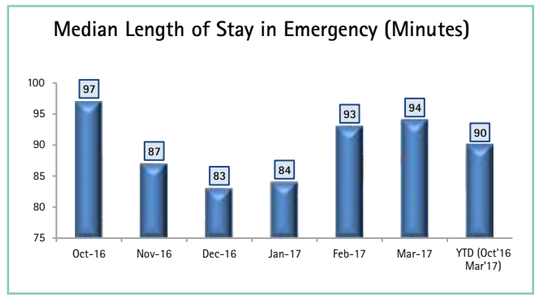
Managing a patient's expectations in the emergency department (ED) environment is challenging. Lengthy waiting times have shown to be associated with dissatisfaction of patients with ED care. This indicator helps understand the patient's estimation of waiting time which leads to lower satisfaction as well as helps provide administrators possible points of intervention to help reduce waiting time in the ED.

Length of stay (LOS) in emergency department is defined as the time difference between T1 and T2 where;

- T1: When patient gets formally registered in ER
- T2: When the patient is formally transferred to ward

Since there is large variation in data, the "Median" is calculated of the time difference of T2 – T1.

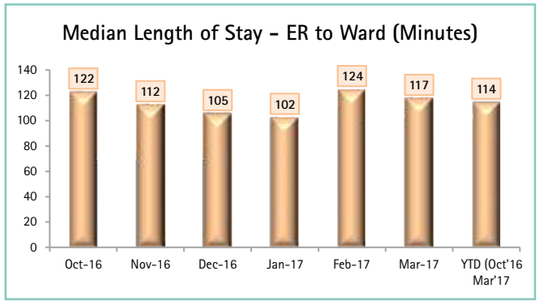
This indicator signifies the efficiency and effectiveness of the operations and management in ER. Ideally it should not exceed 4 hours (240 minutes)



3. Median length of stay ER to ward (In Minutes)

Patient satisfaction with medical care is crucial to ensure a healthy and productive physician-patient relationship. With the ED tending to be the gateway to access care in the hospital, the perception of the hospital may be solely based on the care received in the ED. Wait times can have a huge influence, both positive and negative, on patient satisfaction. Lengthy wait times have shown to be associated with dissatisfaction with ED care This indicator is calculated as the median of time difference between T1 and T2 where;

- T1: When patient gets formally registered in ER
- T2: When the patient is formally transferred to ward



The above indicator helps signify the efficiency and effectiveness of Medical Administration and utilization of wards.

4. Median Length of Stay - Emergency to ICU (in minutes)

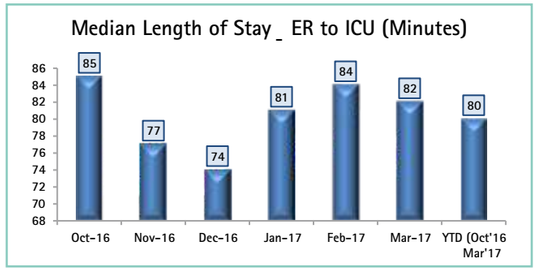
Critically ill patients in the ER require immediate transfer to intensive care units for prompt initiation of treatment.

Delay in transfer can result in physiologic deterioration of the patient associated with increased morbidity and mortality. Thus the timing of transfer to the ICU from the ER is an important determinant of patient outcomes.

This indicator is calculated as the Median of time difference between T1 and T2 where;

- T1: When patient gets formally registered in ER
- T2: Patient is discharged to an ICU facility

This helps signify the efficiency and effectiveness of utilization of ICU facility & Medical Administration.



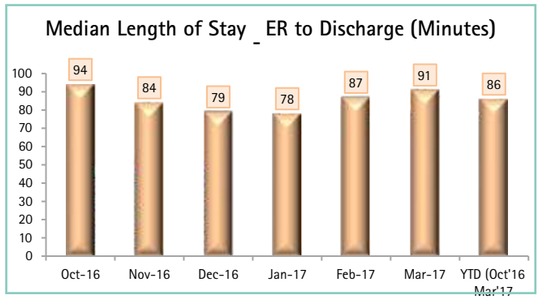
5. Median Length of Stay in Emergency to discharge (in Mins):

Emergency department is faced with numerous challenges such as increased patient volumes, sick & critical patient population, limited bed availability etc. Treatment execution, decision making & appropriate patient transfer needs to be quickly executed so that the patient traffic flows seamlessly.

A delay of the same can lead to overcrowding & mismanagement of work in the ER compromising patient outcomes.

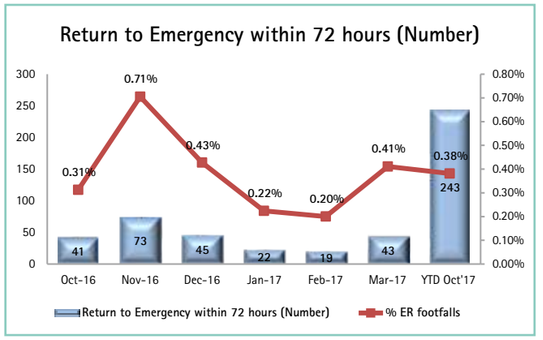
This indicator is calculated as the Median of time difference between T1 and T2 where;

- T1: When patient gets formally registered in ER
- T2: Patient is formally discharged from ER



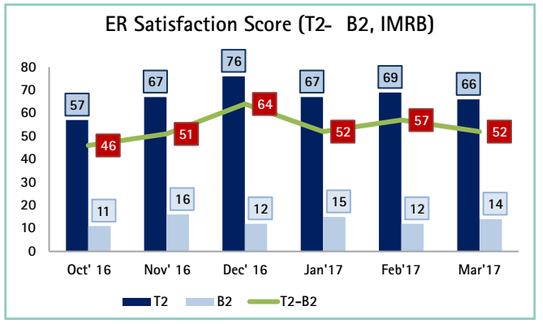
6. Return to Emergency within 72 hours (with similar present complaints)

Unscheduled returns to the ED are a known quality care indicator. An unscheduled return to ED is defined as a patient presentation for the same chief complaint within 72 hours of discharge from the ED. Unscheduled return rates over a certain level reflect malfunctioning of the ED, and the underlying causes should be investigated. The basic aim to capture this indicator is to identify factors associated with unscheduled returns to the ED.



7. Satisfaction scores (IMRB)

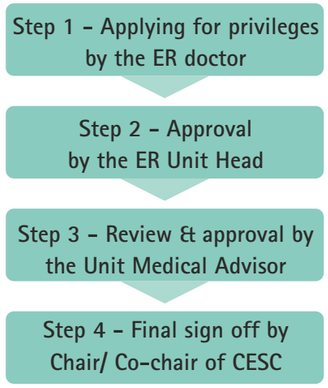
Patient satisfaction scores in the ED signify the degree of positive experiences of the patients presenting in ER. Measuring patient experience by eliciting feedback from patients provides an opportunity to highlight & address aspects of the care experience that need improvement. Measurement of patient experience is important because it provides an opportunity to improve care, enhance strategic decision making, meet patients' expectations, effectively manage and monitor health care performance, and helps decide benchmarks for health care organizations. It can also help provide information to an organization on improvement of processes and clinical outcomes & utilization of resources.



Credentialing & Privileging Process

No specific privileging criteria existed for ER doctors earlier. Now minimum hiring criteria have been established for doctors and nurses in ER. Proper defined hierarchies have been established with regards to the "bands" that ER clinicians can be offered.

ER Doctor Privileging process:



ER Nurses Privileging process:

A Nurse working in the Emergency department of Max Healthcare is a proactive member of the multidisciplinary team of professionals. She/ he is required to attend to a wide range of different medical emergencies among a wide demographic population to provide a thorough assessment, first line of treatment and high quality care to patients visiting the ER.

Nursing professionals with necessary knowledge, attitude, critical thinking skills and experience are hired to ensure upholding the core values of MHC.

In case a particular unit hires a new nurse for ER who is a fresher or is exempt from the hiring criteria, then it is ensured that the nurse undergoes the complete ER nursing training module (Seven Days) designed by Max Institute of Medical Excellence (MIME) for MHC nurses.

Other initiatives

- **Admission Criteria:** Admission criteria (through ER) has been established & formed for each specialty, signed off by the Medical Advisor of each unit & formally submitted to Clinical Directorate. This will go in line with the ER motto and will help ensure that the right patient gets admitted under the right specialty for ensuring better clinical outcomes.
- **Policies reviewed and implemented across the network:** Triage policy, Left Against Medical Advice (LAMA), Sexual assault, Brought dead, MLC Process, Inter hub transfer policy, ER Attendant policy.
- **ER Website:** A new website for emergency has been created which will help provide patients and viewers an easy way to learn about emergency services being provided by Max Healthcare.

Academic Programs

DNB Emergency Medicine:

Max healthcare is recognized by National Board of Examination for conducting post graduate training in Emergency Medicine at 3 centers:

- Max Super Specialty Hospital, Saket, Delhi – 3 Primary and 3 Secondary seats
- Max Super Specialty Hospital, Shalimar Bagh, Delhi – 3 Primary and 3 Secondary seats
- Max Super Specialty Hospital, Vaishali, Ghaziabad – 2 Primary and 2 Secondary seats

Currently we have 21 DNB students in training at the 3 units.

Fellowship of the Royal College of Emergency Medicine (FRCEM):

The Royal College of Emergency Medicine works to ensure high quality care for patients by setting and monitoring standards of care in emergency departments, as well as providing expert guidance and advice on policy to relevant bodies on matters relating to Emergency Medicine. The College aims to advance education and research in Emergency Medicine. It is responsible for setting standards of training and administering examinations in Emergency Medicine for the award of Fellowship and Membership of the College.

Max Healthcare has been approved as an International center for Royal college examination in Emergency Medicine - the only one in North India. Last year approximately 350 doctors from around 10 countries appeared in the examination conducted by Max Healthcare.

Masters in Emergency Medicine (MEM):

This is a 3 year training program for MBBS doctors in affiliation with George Washington University, USA. Currently the program is run at the following Max units:

- Max Super Specialty Hospital, Shalimar Bagh, Delhi
- Max Super Specialty Hospital, Patparganj, Delhi
- Max Super Specialty Hospital, Vaishali, Delhi
- Max Super Specialty Hospital, Smart Saket, Delhi
- Max Super Specialty Hospital, Dehradun

Currently the total number of doctors in this program is 30.

American Heart Association certified resuscitation courses

Max Institute of Medical Excellence (MIME) is a certified International Training Centre for American Heart Association Courses since 2007 and has conducted hundreds of courses and certified thousands of healthcare professionals. The following courses are offered:

For Healthcare Professionals:

- Basic Life Support (BLS) Provider Course
- Basic Life Support (BLS) Instructor Course
- Advanced Cardiac Life Support (ACLS) Provider Course
- Advanced Cardiac Life Support (ACLS) Instructor Course
- Pediatric Advanced Life Support (PALS) Provider Course
- Pediatric Advanced Life Support (PALS) Instructor Course

For Work place Community:

- Heart Saver First Aid
- Heart Saver CPR & AED
- Heart Saver First Aid, CPR & AED

Max Healthcare Certified Resuscitation courses

Max Institute of Medical Excellence (MIME) also provides Max Emergency Life Support courses. These courses are offered to the workforce of Max Healthcare, but also to others seeking to do this course. They have been empanelled by Quality Council of India (QCI). We provide these courses at various Health Care Organizations all across India. The following programs come under MELS programs:

- Max Emergency Life Support - Basic
- Max Emergency Life Support - Advanced
- Max First Responder Course

Observerships & Internships

Max Institute of Medical Excellence (MIME) also offers observerships and internships to interested Doctors in all the Max Healthcare Emergency Departments under the guidance of experienced faculty.

Way Forward ...!!

- Target to improve Patient satisfaction scores from 54% to 64%
- ER Measure of Success (MOS) in place and enforced
- National Conference on ER
- Continuous training and Upskilling (Doctors and Nurses)
- Compliance to Hiring Criteria (Doctors and Nurses)
- Other Areas of focus : Communication of
  - Plan of Care
  - Investigations and Drugs
  - Cost of Care
  - Triaging Criteria

Clinical Directorate - Human Resources (CD-HR) Journey till date

Introduction:

Clinical Directorate - Human Resources (CD-HR) vertical has been formed under the guidance of our Clinical Director, Dr. Sandeep Budhiraja and HR Head Ms. Swati Rustagi in order to provide best in class Learning & Development practices, HR Service Delivery, Talent Management and Compensation & Benefit opportunities for our esteemed clinicians in the Max network of hospitals. In the last three months, the CD-HR Team, led by Mr. Jayant Chaudhary, Vice President (HR) has successfully rolled out and implemented critical projects relating to clinicians.

The key strategic focus areas of CD-HR are:

A. Clinical HR (Human Resources) Operations

B. Employee Culture & Happiness,

C. Learning & Development & On Boarding-Induction,

D. Performance Management System, Compensation Management, Capability building & Succession Planning

These key strategic focus areas hold different meanings for different stakeholders. For:

- Senior Clinicians – CD-HR acts as a 'Sounding Board', being a good listener to their concerns and offers feedback when needed.
- Junior clinicians – CD-HR acts as an 'Advisory Buddy' to clarify the doubts of the budding medicos regarding entitlements, MHC policies, practices, etc.
- Unit teams – CD-HR acts a Functional/Subject matter experts (SME) in the field of HR to advice on critical day to day issues.
- MHC Leadership – CD-HR aids and assists Leadership in clinician engagement and eventually maintains an alignment between MHC objectives and the requirements from clinicians.

Scope of CD-HR

A. Clinical HR Operations:

1. Process & Policies:

- To design an HR SOP (Standard Operating Procedures) manual and governance mechanisms for HR policies
- Create a robust internal database of clinicians
- Identify create and publish clinician dashboards
- Work on regular alerts e.g. Delhi Medical Council Registration (DMC), Contract expiry
- Review and revamp Doctor Exit process
- Release of JD to all doctors specialty wise
- Work on maintenance of clinician 'Log books'

2. Dashboard & Technology:

CD - HR is working towards enhanced analytics & reporting of clinician headcount/attrition data and ultimately work to create a repository of data (band, level and specialty wise) for clinicians. This shall eventually lead to automation update and notification in system.

B. Culture and Clinician Happiness

1. Culture (Building connect with clinicians) by means of-

- Max Mingle over Tea' sessions (focused group discussions) for Junior Doctors led by Medical Administrator (MA), Medical Superintendent (MS) and Unit Head(supported by the unit HR teams)- Details Ahead
- Ensure the rigor and frequency of Doctor's Operating Council
- 'Know your Clinician' program to build a connect between the clinician fraternity by means of increased interactions amongst clinicians at all levels
- Review exits within 3 months of joining of an Independent consultants to understand the grievances of clinicians
- Reinforce values (Seva Bhav, Credibility, Excellence) linkage across Clinical processes in every initiative

2. Clinician Happiness

- SAMBAL Help Desk service program for clinicians was launched on 1st July 2017. This program aims to create a family connect and assist in family celebrations
- Increase the frequency of Head of Department (HOD) interaction with team and HOD Council in units
- Design Engagement Framework for Clinicians (Eg. quiz & lectures)

C. Learning & Development & On Boarding-Induction:

Learning & Development (L&D)

The L&D program of clinicians focuses on creating a standardized training road map for Clinicians in units. They are:

- Three types of trainings
  - i. Technical (Specialty wise)
  - ii Functional (to train second line docs for leadership roles and
  - iii. Behavioral (identified by TNI process)
- Improved participation and review of content of Med Induct

- Certificate program for Docs to move to independent practice
- Sharing of best practices and unique experience

For MedInduct we are working closely with Medical Quality team to complete induction for all back-log cases. CDHR team along with the Medical Quality team will work closely to develop a 4 hour module for covering back-logs as well as refresher training.

Clinician Onboarding and Initiation Plan:

This program has been created with clearly articulated responsibilities of various stakeholders to standardize the orientation experience for new Clinicians across all the Max network of hospitals.

D. Performance Management & Compensation Management:

Performance Management: The objectives are:

- Review Performance management system for clinicians
- Junior doctor's Key Result Areas to be sharpened Admission with respect to discharge management, Clinical outcomes (IMRB Scores) etc.
- Introduce Balanced Score Card for senior Clinicians
- Review Career Progression Policy by providing a visible aspiration ladder
- Specific Internal Developmental Programs(IDP's) for identified high potentials(Successors of Key Clinicians

Compensation Management: This division deals with:

- Studying existing Clinician Compensation & Benefit models across specialties, pool and revenue share arrangements
- They shall recommend and standardize the best models for units
- Create Master Repository of Comp data across categories, specialties & levels
- Explore differentiated reward strategy for junior and middle level doctors
- Work on linkage of balance scorecard to compensation

Reward & Recognition:

- Review existing reward framework at units
- Help implementation of GEM, Susruta, ValYOU, Healing Hands and others
- Build a culture of continuous recognition and appreciation
- Build guidelines around participation for external and internal recognition of Clinicians including Seminars/Lectures

Capability building & Succession Planning:

- Talent Assessment: By identification of key Talent for PL2 & PL3 Bands and creation of a framework of Assessment Centre Development Centre (ACDC) for Clinicians working on list of immediate & potential successors of HODs.
- Capability building by
  - Involvement of younger Clinicians in rare and interesting cases
  - Creation of career progression framework for SR, Attending and Associate Consultant
  - Assigning Coaches to high Clinicians from Clinical Leadership

CD-HR Initiatives rolled out till date:

- **Junior doctor compensation:**

  Junior doctor compensation was rolled out on June 22, 2017. It is a study on existing doctor's compensation and external market data which defined rules to be followed in case of any deviations required. It also standardized designations as Resident Medical Officer and Senior Resident and released standardized hiring grids for Delhi, NCR & Dehradun and Punjab.

- **'Max Mingle over Tea' connect program:** Max Mingle over Tea' connect program for junior doctors with senior management of hospital was launched on June 30, 2017 to help understand the burning issues amongst our junior clinician and to help resolve clinician's grievances in monthly focused group discussions over a cup of tea with Medical Administrators (MA), Medical Superintendents (MS) and Unit HR's.

  The junior doctors are the backbone of Max Healthcare (MHC) set-up and they are the face of MHC with the patients and attendants. By means of Focus Group Discussion we aim to:

  - Bridge the gap between Medical Administration and Junior doctors
  - Collect insights on working environment in various shifts
  - Effectiveness of clinical processes on the floors
  - On the spot solutions for routine issues
  - Invite suggestions on potential solutions to problems
  - Ascertain the general pulse / burning issues amongst junior doctors
  - Help Hospital Management with improved decision-making and resource planning

'Max Mingle over Tea' connect program is a forum for freewheeling discussion, within a comfortable set-up. Agreed actions need to be taken within 30 days & update needs to be given in the next forum. Participant's feedback is collected through a questionnaire and assessed on Likert Scale. This can additionally be utilized for:

- Acknowledging budding Star doctors as Enablers/ Spot Appreciation.
- Specific theme based short Trainings.
- Special interventions / initiatives / projects.

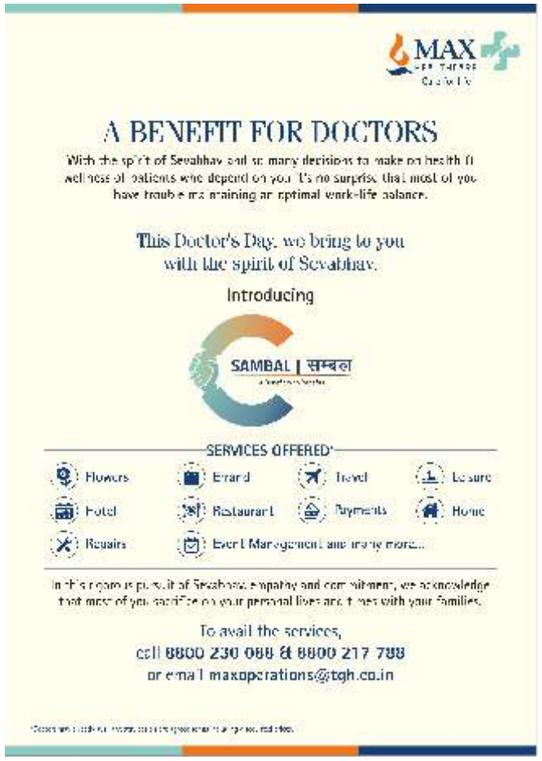
SAMBAL: Helpdesk service for clinicians

With the spirit of Sevabhav and patient first in mind (and so many decisions to make on wellness of patients and with lives on the line depending on clinician expertize) it's no surprise that most of the clinicians have trouble maintaining an optimal work-life balance.

In this rigorous pursuit of Sevabhav, empathy and commitment, we acknowledge that most of the clinicians sacrifice on their personal lives and times with families.

On 'Doctor's Day', July 1, 2017, we thought of bringing the same spirit of Sevabhav to clinicians by announcing the launch of Concierge services for our Doctors at Delhi NCR units.

By taking care of clinician "to do" list, SAMBAL team will make an attempt to help clinicians find that balance between family, work and other life priorities. We understand the value of clinician time and with this launch we reinforce our commitment to making clinician's life easier by ensuring personalized services for simple matters that will bring in a smile to family members.



Key Highlights of SAMBAL helpdesk service:

- ONE STOP SHOP
- Reduces stress of completing everyday tasks
- Saves Time
- Improves focus and productivity, knowing that your personal life is under control
- Gain access to discounts, and complimentary benefits
- Quick turnaround
- Great Deals at nominal charges

Awareness camps are being arranged at every unit to help the doctors maintain their work life balance, in our pursuit of making MHC a Great Place To Work

On-Boarding Process & Clinician Initiation Plan:

This plan was released on August 2017 with clearly articulated responsibilities of various stakeholders. This is to standardize the orientation experience for new Clinicians across all MHC Units and redefining detailed process framework for pre-joining, on-boarding & Induction. The details are:

- Pre-Joining Preparations: Checklist to ensure all ground work has been done before the Joining date of Clinician
- Detailed Induction Plan: Roles and Responsibilities of concerned Stakeholders defined further under four headings
- Clinician Initiation Plan: HR works with the marketing team to ensure that the clinician gets appropriate visibility through AVs EDMs Social Media Campaign etc.

The objectives are:

- Clinician Engagement score shall improve in line with Employee Engagement framework
- High Impact Touch Points' shall be defined for Clinicians
- Ñ Expected dip in clinician attrition
- Defined roles and responsibilities laid down for onboarding and induction will lead to clarity to stakeholders on handling the Clinician Induction process for all levels
- Creating a platform for Max Brand: A great place to work

Continuous updating of Doctor's Database

CDHR Team is currently working on Doctor's database and has defined their unique identification as their respective PAN (Permanent Account Numbers). Month on month information is gathered from the Units to update this database.

Clinician Feedback Form for reference check of doctors:

This feedback form has been created to provide a questionnaire that a recruitment manager/Head of Department/Unit HR should ideally ask about a prospective doctor covering all aspects of profile so as to hire an ideal clinician for MHC

Filling up of the Clinician feedback form in a comprehensive manner will lead to:

- Detailed understanding of the prospective Clinician/candidate
- Coverage of all aspects of professional journey with main focus on values/ethics/aspirations
- Hiring of ideal clinician in sync with Max Healthcare requirements
- Lowering of attrition
- Effective and efficient hiring process
- Improved employee retention

Way forward:

Other strategic projects to be rolled out in the pipeline in near future are:

- Succession Planning: Talent Assessment by identification of key talent and working on list of immediate & potential successors of Head of Department's
- Employee Value Proposition (EVP). This is for all cadres of clinicians to showcase how unique MHC is and what it stands for in order to:
  - Attract clinician who share MHC Values
  - Inspire Clinicians to do great work at MHC
  - Give them reasons to stay longer and engaged

The EVP requires creation of framework for:

i. Interviews with clinicians by focused group discussions/Questionnaires/Surveys

ii. Analysis of findings

iii. Adding components to EVP Framework

iv. Final review and Delivery of EVP for clinicians

Throughout this journey, the CD-HR team has been having regular meetings with senior doctors, senior management team and Executive Council (EC) members to take their valuable inputs.

Clinician Hiring

Owing to the rapid growth of the private healthcare industry and Max Healthcare's expansion plans, the organization has placed a strong emphasis on the Clinician acquisition component of its operations. In order to attract and acquire the highest quality of clinicians to provide premium healthcare services at optimum efficiency as well as grow the arsenal of expertise, the Clinician Hiring (CH) vertical was created in the year 2014. The division supports the organization vision of partnering in growth with Unit Heads and provides a consistent support for enhancing clinical programs across the network of Max Hospitals. Its contribution has been hugely appreciated by the Senior Leadership of MHC.

In addition to supporting BAU (Business As Usual) for routine replacements and new hiring for expansion of new medical facilities; CH continues to partner with each unit of the group to meet their talent and skills requirements

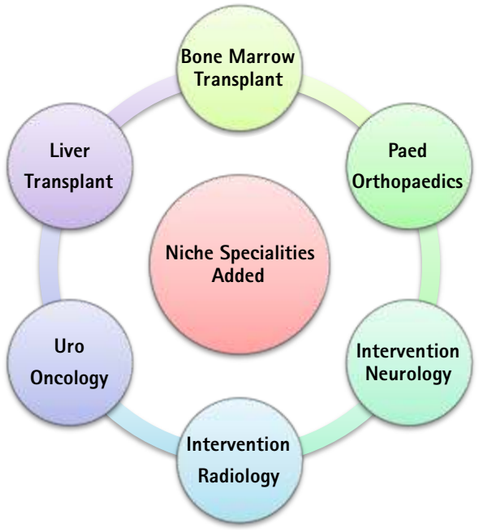
The Clinician Hiring vertical has marked its presence by hiring 221 clinicians (consultant and above) across all specialties pan max in the 2016-17 financial year.

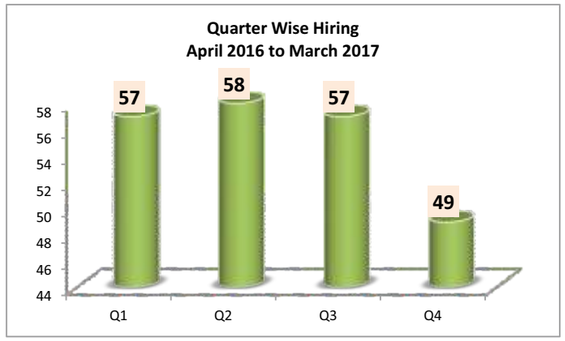
Major achievements are:

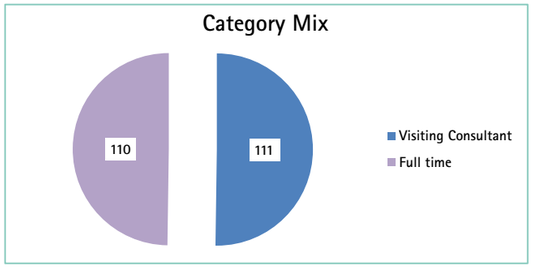
1. **Liver Transplant Program:** This program has provided a long-awaited boost to clinical programme building and providing comprehensive services in GI. The LTP program is led by Dr. Subhash Gupta, a pioneer of living donor liver transplantation in India and Asia's finest Liver Transplant Surgeon. CH has engaged best in class clinicians from across the country supported by a highly trained support & paramedical team for the LTP program. The team carries with it a rich experience and a colossal reputation to enrich Max Healthcare's portfolio. The Program has helped MHC to expand its spectrum of services by offering Liver Transplants and complex HPB surgeries. The program started in February 2017 at Max Super Speciality Hospital, Saket.
2. **Interventional Neurology:** This is a new service that has been introduced at Max Saket. Assessing the need of the hour and the DMG approach as part of our strategy, Dr. Chandril Chugh has joined us in leading the program and establishing it for significant success in times to come. Dr. Chugh who specializes in this field has joined us from the USA.
3. **Interventional Radiology:** Augmentation of Interventional Radiology has added value to MHC's service portfolio at Saket. Dr. Vaibhav Jain has been appointed from for this role.
4. **Orthopedics Team:** New ortho teams were acquired at Saket and Gurgaon. Dr J Maheshwari leads the service at Saket & Dr. Ravi Sauhta & Dr. Jaggi at Gurgaon.
5. **Augmentation of Specialties at Max Smart:** Max Smart after coming under the umbrella of MHC, saw significant augmentation of existing medical & surgical specialties and addition of new ones. The following specialties were targeted and new clinicians were hired to achieve improved performance as a complete hospital unit. The specialties that saw augmentations were Neurology, Cardiac Sciences, Gastroenterology, ENT, Uro-onco and Paediatric Otho, to name a few.
6. **Dr. Jhulka** joined us from AIIMS to run our first of its kind Onco day Care Centre at Lajpat Nagar. He brings with him immense experience and expertise to be able to deliver best in class care.
7. Our East Zone saw additions in Surgical Oncology, GI surgery and Bone marrow Transplants to name a few.

Forging ahead, in alignment with MHC objectives and strategies, CH is actively working on:

- Building up database and creating a comprehensive pipeline for future requirements across hospitals and positions
- Attracting the best of clinical talents from domestic as well as international markets
- Capacity building in tower specialties (along with Clinical Leaders of respective specialties and other stakeholders)







Clinician Hiring Highlights : 2016-17

221
Number of Clinicians hired

111
Visiting Consultants

110
Full Time Consultants

Office of Research

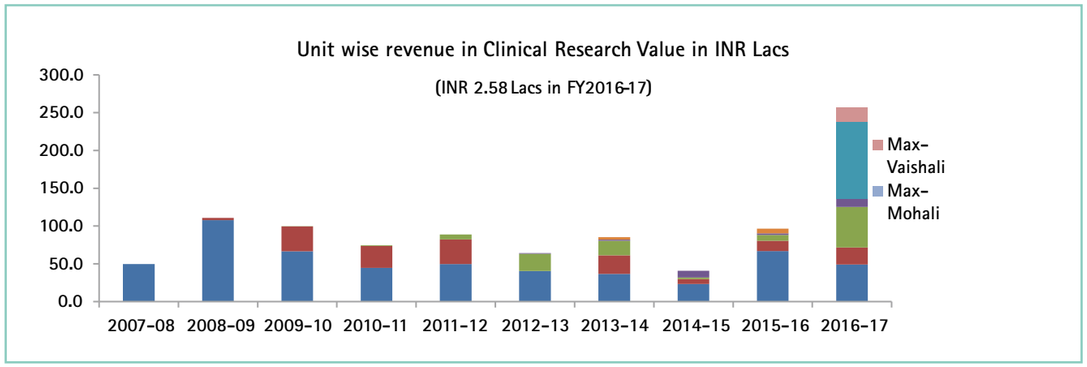
The Office of Research (OOR) at Max Healthcare promotes, supports and guides our diverse research enterprise. It also acts as a "front door" for new research partnerships. Strong research capabilities and an academic environment have been a priority for Max Healthcare. Since its inception, the OOR has had a simple and constant mission: To increase the quality, quantity and efficiency of translating fundamental science advances into improved clinical care for our patients. The OOR has dedicated personnel to support clinicians who want to conduct research or clinical trials in terms of operational, administrative, scientific & academic support. The team boasts of Medical writers and statisticians.

Areas of research being pursued by Max

MHC has built a strong foundation in managing several sponsored clinical trials, collaborative research and Investigator Initiated trials/ studies in all major therapeutic areas such as Cardiology, Vascular surgery, Oncology, Neurology, Endocrinology, Intensive care, Internal medicine, Pulmonology, Psychiatry, Pathology, Anesthesia, Minimal Access Metabolic and Bariatric Surgery, Radiology, Nephrology & Kidney Transplant, Obstetrics & Gynecology, IVF, Urology, Physiotherapy & Rehabilitation, Ophthalmology, Gastroenterology, Pediatrics, Neonatology, Urology, and Emergency medicine covering the areas of drugs, devices, epidemiological and post marketing surveillance studies.

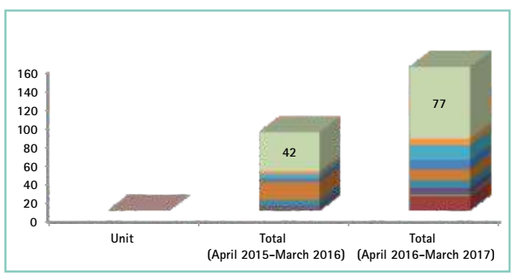
Clinical Trials and Research Studies

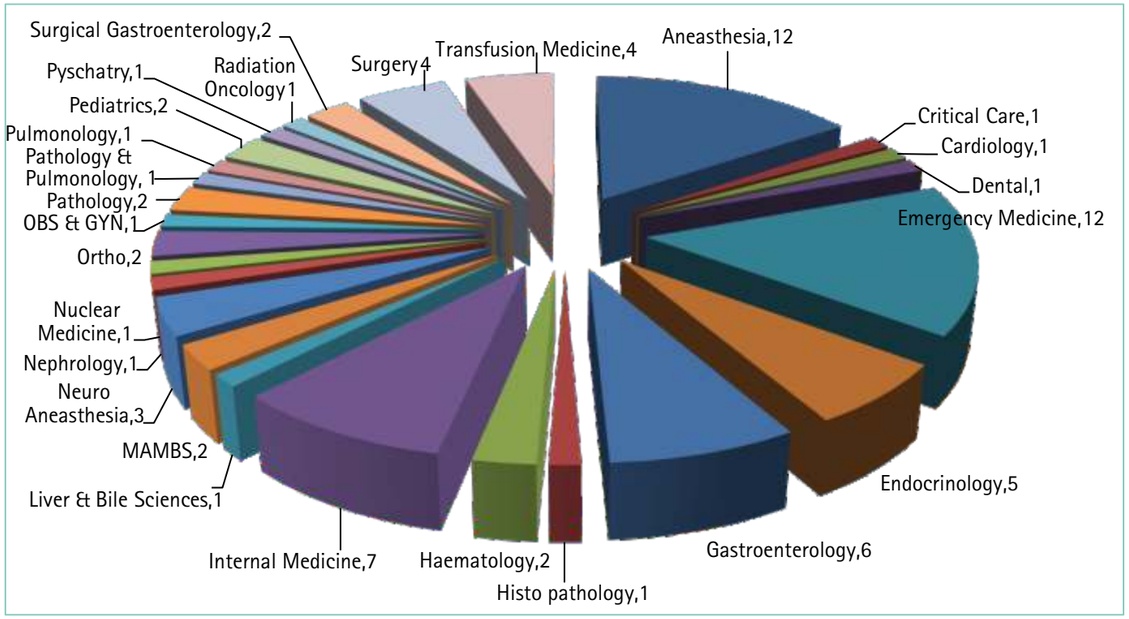
Since 2005, through the Clinical Research Program established at MHC, the Office of research has been able to successfully initiate more than 146 sponsored clinical trials of which 118 have been completed till date and 28 are currently ongoing.



Publications

In the year 2016-2017, more than 77 publications have been done by researchers in MHC in national & international peer reviewed journals. This is an increase of 83% in comparison to FY 15-16. (List of all the publications in the last years is attached in the appendix).





Collaboration with Imperial College (UK)

The aim is to develop world-class research collaborations between MHC-DDF and Imperial College, which addresses major unmet clinical needs common to India and the UK, using cutting edge technology. Currently, one project is ongoing in genetics i.e. Max Genetic study. DDF has successfully completed one study on genetics (Epi-Migrant study) under FP7 programme by European Commission. Through this collaboration second study on prevention of type 2 diabetes among South Asians is ongoing in DDF under "EU Framework Programme for Research and Innovation Horizon 2020".

The second collaboration, a funded study on prevention of Type 2 Diabetes among South Asians under EU Framework Programme for Research and Innovation Horizon 2020" the Project "iHealth T2D Study" has been initiated and running the study project which has been described briefly below:

- iHealth-T2D study, on-going Prevention of Diabetes Program titled "iHealth T2D Prevention Study". Collaborated with Imperial College, London is involved in an initiative to screen pre-diabetes individuals or to identify Indians who are at risk of diabetes.
- Study approach is to promote health through lifestyle modification (healthy diet, increased physical activity) in a simplified manner without medication in pre-diabetes individuals.
- For the study project, MHC is the fastest screening site amongst all participating countries with 4500 screened subjects. Institute of Endocrinology Diabetes and Metabolism has enrolled 450 subjects out of 4500 screenings of pre diabetics from organized various health check up camps in different rural and urban locations of Delhi/NCR, Chandigarh/ Mohall and Muzaffarpur.
- The findings of this study will provide objective evidence to enable local and national experts and policy makers to scale up intervention in a sustainable way, and to translate and embed the findings from our research into clinical practice and policy, and thereby help reverse the epidemic of T2D amongst South Asians.

Department of BIO technology (DBT):

- The Department of Gastroenterology at Max Vaishali under Dr. P. Kar has got a transfer of ongoing research study at MAMC Delhi, which is being funded by DBT for the study title "Association of DNA repair enzyme and frequency of p53 mutation in chronic liver disease patients with aflatoxin exposure from Assam"

Indian council of medical research (ICMR):

- The Department of Gastroenterology at Max Vaishali has got funds from ICMR for the study titled "Effect of sex steroid hormones on replication of hepatitis E virus", wherein the study funds will be given to DDF under the DSIR institutional committee for stem cell research under the recognition. While the study is being conducted at Max Vaishali, the research lab analysis is being done in collaboration with Jamia Milia Islamia.

Department of Science & Technology:

- The Department of Gastroenterology in collaboration with Amity University will be initiating a study entitled "The role of gut microbiota by Metagenomics study in Gastro esophageal reflux diseases (GERD) associated with or without Helicobacter pylori infection", wherein grants will be given to DDF under DSIR recognition. The study will be conducted at Max Vaishali, while the research lab analysis will be done at Amity University.

GE Healthcare

- The department of Radiology is conducting an investigator initiative trial entitled: "Comparison of cardio vascular magnetic resonance imaging (mri) and positron emission tomography (pet) for detection of myocardial viability and ischemia", wherein study initially will be funded by MHC. Further, GE has given grants for conduct of the entire study. The study has also got clearance for DCGI under academics clinical trials scheme as per current regulation for clinical trials in India

Clinical Trials and Research Studies at Various Units

Max Super Speciality Hospital, Saket, New Delhi

Max Saket, having set up the clinical research programme in year 2005 has a wealth of experience in managing number of clinical trials, basic researches, academic thesis, intramural and extramural research in all major therapeutic categories including Oncology, Cardiology, Endocrinology, Intensive care Anesthesia, Physiotherapy, gastroenterology, uro-oncology, Emergency Medicine, MAMBS & Internal medicine covering the areas of drugs, devices, post marketing surveillance and epidemiological studies.

Max Hospital, Gurgaon

The first Clinical Trial has been initiated under the Department of IVF. Currently the clinical trial is ongoing at the IVF center Gurgaon as one of participating sites for a multicenter study for Luteal Support in In-Vitro Fertilization.

Max Super Speciality Hospital, Shalimar Bagh, New Delhi

The Department of Cardiology initiated its first clinical trial in the year 2014. In the last one year, two studies have been initiated in Oncology and also looking into possible opportunities in the other therapeutics area. Currently, the clinical research programmes are in Cardiology, Oncology, and Pulmonology.

Max Super Speciality Hospital, Patparganj, New Delhi

The clinical research programme was established in 2008 at Max Patparganj with Oncology studies and now extended to Cardiology, Nephrology and Pulmonology etc. Division of Oncology continues to conduct regular trials.

Max Speciality Center, Panchsheel, New Delhi

Department of Endocrinology-Max Panchsheel has been involved in clinical research since 2014 and currently we are looking for new opportunities in research.

Max Super Speciality Hospital, Mohali

The center has been part of the prevention of Type 2 Diabetes (iHealth T2D) study and looking into clinical research studies in the area of Oncology

Max Super Speciality Hospital, Vaishali, New Delhi

The center has been part of the prevention of Type 2 Diabetes (iHealth T2D) study. In the last one year two clinical trials have been initiated in Department of Nephrology. Currently, clinical trials are being conducted in the areas of Cardiology and Nephrology.

The newer hospitals incorporated in the Max Healthcare group have been running clinical trials in the area of Cardiology, Nephrology, Anesthesia, Critical Care and are also looking into opportunities for clinical research studies both sponsored and funded by national and international agencies. Clinical Directorate plans to augment support to ongoing research studies at the new units and also use MHC's experience in initiating new studies.

Committees:

In view of compliance as per the national & international guidelines for conduct of any kind of clinical research program, like investigator initiated studies, trials, clinical trials, registries and para medical, medical & non medical post graduates programs, the respective facilities running the projects are overseen by Scientific Committee and Ethics Committees as per regulations by Government of India.

The ethics committees of each facility running clinical trials have been registered to DCGI and constituted by ICH-GCP, Indian GCP, ICMR & D&C Act. For newer areas like stem cell research we have also established institutional committee for stem cell research under the national guideline for stem cell research in India. The Office of Research is instrumental in instituting these committees, running their operations and organizing their meetings.

To support clinicians in their journey towards clinical excellence through clinical research resulting in publications, MHC has constituted the "Max Medical writing committee" (MMWC) with an aim to increase number of publications in peer reviewed high indexed national & international journals. The committee has met twice since its inception in Oct 2016. The Medical writing team has taken up 27 projects till March 2017 covering various medical specialties across MHC.

Through Devki Devi Foundation, MHC had got recognition from the Department of Scientific Industrial Research (DSIR) as a Research Institution by the Govt of India in the year 2013 for period of 3 years. The renewal for re recognition from DSIR has been awarded for the period April 2016- March 2019

Under the DSIR recognition 3 grant projects have been awarded from Indian Govt grant agencies which are DBT, ICMR and DST.

AMITY – MHC MoU (2nd June 2017)

The partners involved in the collaboration are Amity University and Institutions, sponsorship and promotion partners Ritvand Balved Education Foundation and Max Healthcare Institute Ltd. (MHIL) (represented through Max Institute of Medical Excellence - MIME). The validity of the agreement expires on 25th April 2022 (5 years).

The objective of the collaboration is to share interests in academic and research activities / projects related to Biomedical Sciences. Furthermore, the objectives include the following:

- Organize joint scientific workshops, conferences and working meetings at bilateral or multilateral levels
- Exchange faculty, scientists, clinicians, researchers, scholars, students, trainees etc.
- Facilitate mutual sharing of Techno-Scientific Knowledge and Knowhow
- PhD programes
- Facilitation of MHC employees to be registered as part time PhD students
- Faculty and Consultants of MHC are invited to impart training to Amity students as Visiting / Guest faculty

Max Healthcare generates the following from Amity University through the collaboration:

- Max Healthcare Consultants can be designated as Professors
- University Affiliation
- International and National Scientific and Clinical Research Projects
- Sponsorships and Funding for Research Projects
- Faculty, Scientists, Researchers, Scholars, Students, Trainees
- Employees can be registered as part time PhD students
- PhD degrees for faculty

Benefits derived as a result of R & D

- Professional Development
- Professional Recognition
- Other potential benefits:
  - Close monitoring of patient by research team of doctors and other health professionals
  - Reduction of burden of disease
  - Improved Healthcare Delivery systems
  - New technology and updated medical system

Future Plan of action

MHC will continue to focus on Research & Development activities. Following are the major milestones planned:

- Office of Research (OOR) at MHC plans to conduct various training programmes on research areas like medical writing & statistics through collaborations with the academic institutions in clinical research and renowned pharmaceutical companies to enhance the research skills of researchers.
- OOR is also exploring opportunities to collaborate with other national and international research organizations to broaden the scope of research in other Speciality areas other than Endocrinology.
- For the Year 2017 -2018, a total of 14 national and global clinical trials are in the pipeline which would be started after the requisite regulatory approvals.
- DSIR recognition for Max Vaishali through the society i.e Crosslay Society For Promotion of Medical Education & Research will be applying to attract funds from national & international funding agencies.
- As part of the DSIR recognition OOR has future plans for establishing a molecular lab for research activities in view of any opportunity to increase the grants
- In view of the NABH accreditation for ethics committee, all MHC units actively participating in clinical trials and DCGI registered ethics committee will apply for NABH accreditation. As per the GOI effective January 2018 it would be mandatory for NABH accreditation for those ethics committees overseeing, monitoring and approving clinical trials.
- Research studies through adhoc research fellows/ associates funded by ICMR etc.
- Develop Grant writers Team - Dedicated grant writers will help apply to various grant agencies on collaborative studies or investigator initiated studies
  - Initiated Example: Engaging eminent national and international expertise in various areas of research as an advisor, which would provide base for consultants of our non Endocrine departments more visibility, in initiating new proposals including grant writing and project ownership.
- Engaging with Consultants across specialities in MHC by increasing awareness, sharing with ideas and providing knowledge the knowhow of get grants through various available forums and resources.
- Use of funding agencies for getting grants to attend conferences and paper presentation for investigator initiated studies like ICMR, DST, etc. through DSIR Recognition

Clinical Data Analytics

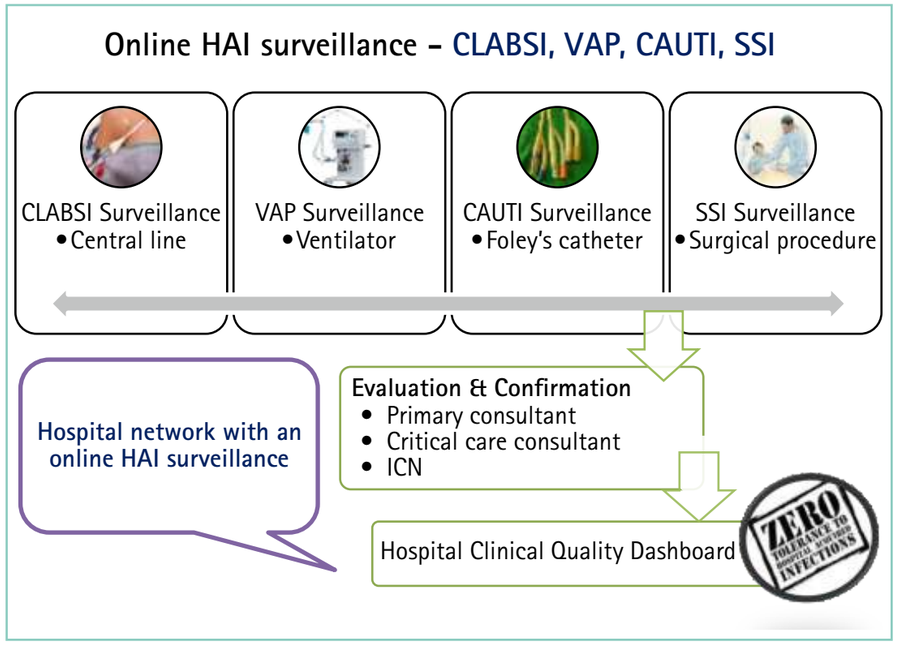
Anti-Microbial Stewardship program

It is well known that the infectious disease burden in India is very high, even though the non-infectious burden is on the rise, especially in urban India. Such a scenario leads to the consumption of a large amount of antibioticsin treating infectious conditions, howevereach use adds to antibioticresistance in bacteria1. We also know that during the past three decades, only one new class of antibiotics, the Oxazolidinone's have been introduced for clinical use.

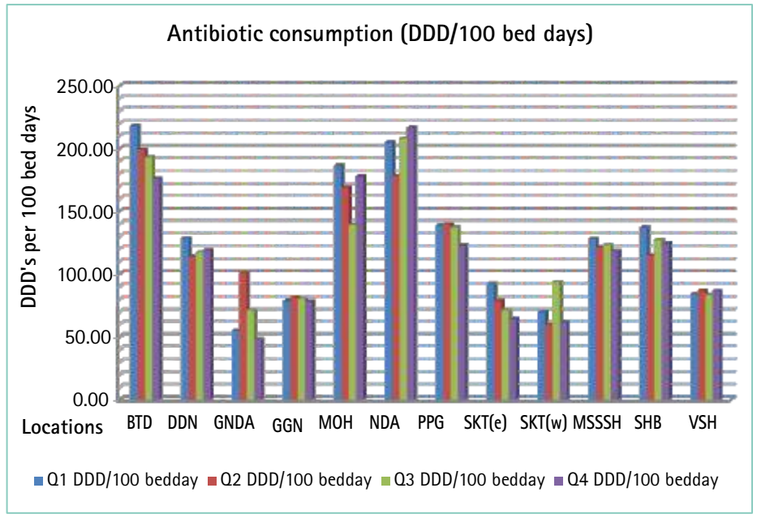
Anti-Microbial Stewardship program aims to promote the appropriate use of antibiotics with a consequent reduction in the burden of anti-microbial resistance2,3,4. The program employs a multi-pronged approach –hospital infection control practices like hand hygiene, hospital infection surveillance, antibiotic resistance surveillance, culture & sensitivity before start of antibiotic therapy, empiric therapy based on hospital antibiogram, appropriate definitive therapyand de-escalation of antibiotics.

Hospital Acquired Infection Surveillance

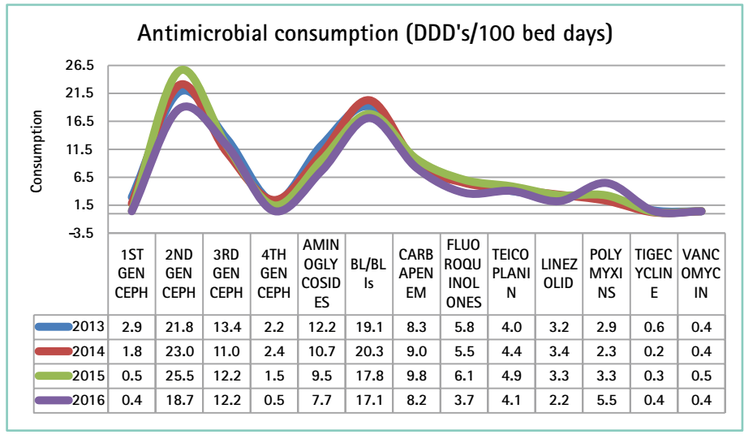
Further strengthening of the network hospitals through an online platform for HAI surveillance program was conducted, with the introduction of Surgical Site Infection (SSI) surveillance. The evaluation and confirmation process at each hub has also been streamlined and strengthened, leading to sustained improvements in the incidence of HAI's.



Tracking antibiotic consumptionis an important measurement for the effectiveness of change brought about by Anti-Microbial Stewardship program. The consumption trends at hospital level can be used in the absence of a benchmark level for monitoring and assessing the change. A drill down to the consumption trends at the level of Drug Class provides a deeper insight to the use patterns. Similarly a subset of consumption patterns for Restricted Antibiotic provides a selective view for a section of patients.

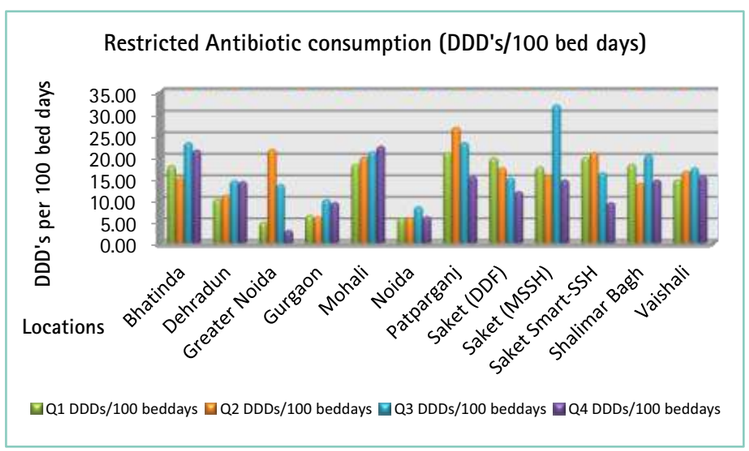


4 year Antimicrobial consumption trend for a hospital

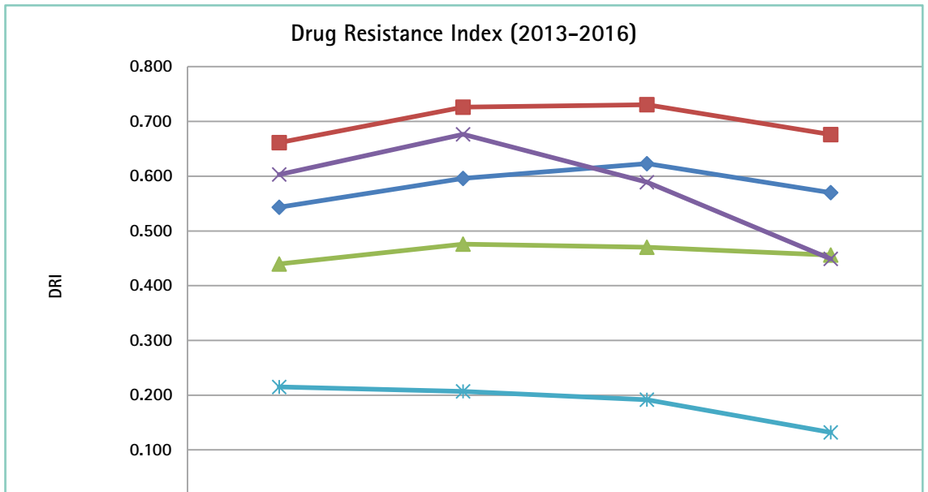


	1ST GEN CEPH	2ND GEN CEPH	3RD GEN CEPH	4TH GEN CEPH	AMINOGLYCOSIDES	BL/BLIs	CARBAPENEM	FLUOROQUINOLONES	TEICOPLANIN	LINEZOLID	POLYMYXINS	TIGECYCLINE	VANCOMYCIN
2013	2.9	21.8	13.4	2.2	12.2	19.1	8.3	5.8	4.0	3.2	2.9	0.6	0.4
2014	1.8	23.0	11.0	2.4	10.7	20.3	9.0	5.5	4.4	3.4	2.3	0.2	0.4
2015	0.5	25.5	12.2	1.5	9.5	17.8	9.8	6.1	4.9	3.3	3.3	0.3	0.5
2016	0.4	18.7	12.2	0.5	7.7	17.1	8.2	3.7	4.1	2.2	5.5	0.4	0.4

Consumption of restricted antibiotics



Drug Resistance Indexis a useful method for surveillance of Antimicrobial resistance among bacteria, to measure the prevalence of resistance in bacteria to the drugs that would normally kill or limit their growth. Drug resistance is a global problem, particularly for infections such as MRSA (Methicillin resistant Staphylococcus aureus), VRE (Vancomycin resistant Enterococci), tuberculosis, E. colietc.The Drug Resistance Index5 (DRI), developed by "The Center for Disease Dynamics, Economics & Policy" is a composite measure that combines the ability of antibiotics to treat infections with the extent of their use in clinical practice. We use annual DRI calculations to study changes in drug resistance and clinical adaptation to the resistance patterns over time in our hospital.



	2013	2014	2015	2016
E.coli	0.543	0.596	0.623	0.57
Klebsiella	0.661	0.726	0.731	0.676
Pseudomonas	0.440	0.476	0.470	0.456
Acinetobacter	0.603	0.676	0.589	0.449
S.aureus	0.215	0.207	0.192	0.132

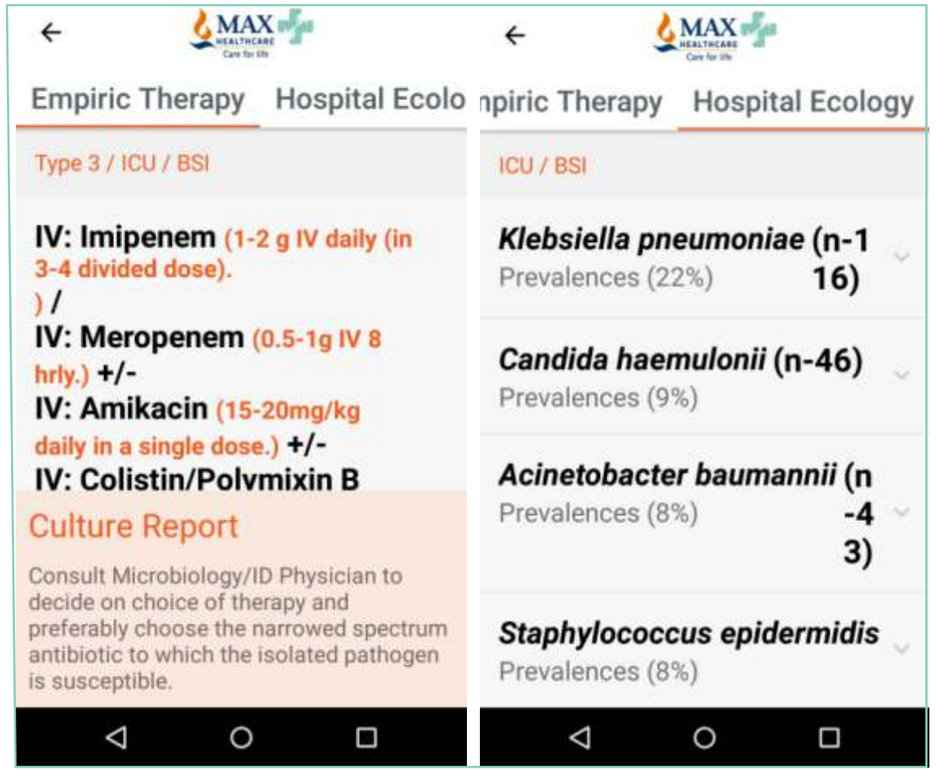
We see a downward trend in drug resistance index for all organisms in 2016, with significant fall in DRI for Acinetobacter and Staphylococcus. Detailed analysis of the resistance and antibiotic consumption patterns reveal adaptive use of sensitive antibiotics to be the reason for slight fall in index values for Gram negative organisms. On the other hand, lower antimicrobial resistance led to a decrease in DRI value for Staphylococcus aureus.

Towards strengthening of the AMS program, Hub training programs were conducted at each Max healthcare facility. The training programs were attended by the Clinicians, Pharmacists, Nursing staff, Medical administrators and Hospital administrators at each hub. It helped in sensitizing the health provider's community to the problems associated with inappropriate use of antibiotics.

The training covered the methodology for measurement of antibiotic consumption along with the interpretation of the trends. A sustained campaign for hand hygiene and appropriate use of antibiotics has been a part of the program.

Online Antibiogram

The Anti-Microbial Stewardship (AMS) program relies on the online availability of microbial and antibiotic resistance information to the Clinician at the bedside. A mobile app in collaboration with MSD Pharmaceuticals provides Antibiogram access to clinicians anytime/anywhere. The Antibiogram has been prepared using in-house patient flora and microbial antibiotic sensitivity data to inform the rational use of antibiotics.



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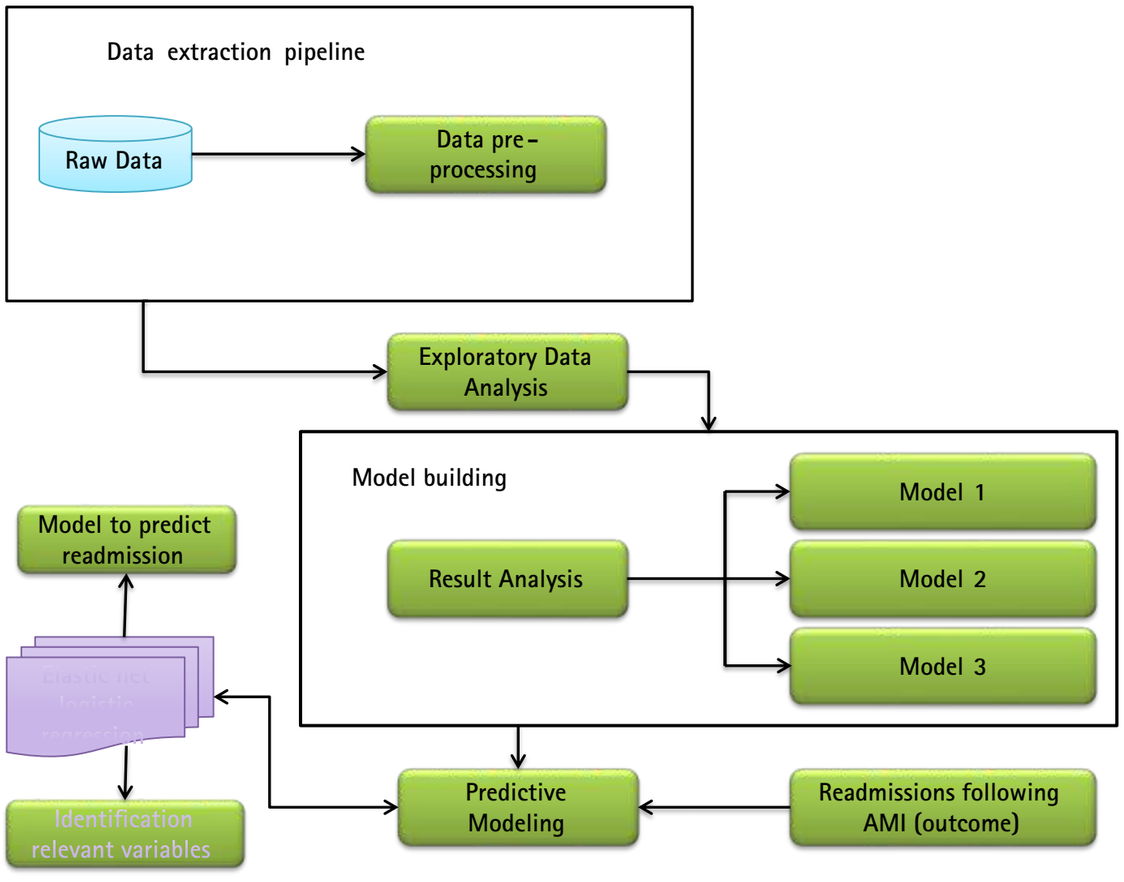
Predictive modeling of readmission following Acute Myocardial Infarction

Frequent unplanned readmissions degrade the patient care and institutional performance. It also adds to the cost of managing patients, whether borne by the state or by the patient him/herself. Recent work reveals that one out of five patients admitted with acute myocardial infarction (AMI) is readmitted within 0-30 days after discharge. In order to reduce readmission rate in such cases, it is obligatory to recognize the high-risk patients during initial admission and take preventive actions at an early stage.

The project team has developed a predictive algorithm for the risk of 30 day readmission post hospitalization from Acute Myocardial Infarction. The model building process utilized pattern discovery on large dataset of discharged AMI patients using machine learning techniques. We anticipate that early knowledge of risk of occurrence can lead to a personalized care plan and an effective follow-up for the higher risk patients. Such an approach promises to improve the medium term patient outcome.

We intend to implement the derived model on Max information systems to provide a real-time feedback loop to the clinician on the risk of readmission at the point of discharge. This could potentially help the clinician in personalizing the post discharge instructions, thereby leading to improvement in patient outcome. We intend to conduct a follow-up study to measure and potentially improve the predictive accuracy of the model, once the system implementation is rolled out.



Exploratory clinical studies

Data Analytics thrives on interesting questions and progresses by innovative data exploration. We like to pick up pragmatic clinical subjects for quick exploration. Such projects have a potential to grow into huge programs later. We conducted a study on INR values falling within therapeutic range and those above or below the therapeutic range. The study provides insight on proportion of patients who could benefit from an intensive follow-up regimen. The benefits from such an intervention, in terms of life threatening complications, would surely far outweigh the cost.

Sharing Industry best practices in Healthcare Data Analytics

An invitational talkatHIMSS AsiaPac16 Conferenceon the topic "Experience with Analyzing Health Data for Patient Care & Safety – Linking Risk with Action for Better Patient Outcome" was presented under the track Applying Better Data for Better Health. HIMSS is the most reputed international organization working in the area of Healthcare Information & Management Systems

The presentation looked at how a clinician striving for correct diagnosis and appropriate therapy brings to bear his knowledge and experience for the benefit of every patient. However, it is becoming increasingly difficult for him/her to cope with the information explosion – medical knowledgebase expanding at an astounding rate, longitudinal patient records and humongous sensor data being stored and ready to be presented on the frontlines of patient encounter.

Advances in data analytics are proposing solutions to ingest and assimilate an ever increasing variety, volume and velocity of data. Patient health data related to history, clinical examination, vitals, course of hospitalization, out-patient encounter, laboratory & radiology investigations, genetic testing, procedures, etc. are streaming at a continuously fast pace and in many cases are too complex to interpret. It requires a supportive environment bringing all the components together, for a Clinician to assess the condition of the patient and plan a personalized treatment.

We shared our experience utilizing the algorithmic approach with contextual insight to improve the patient outcomes, both in preventive and therapeutic mode, in a hospital setting. So far, the results are encouraging; however, there is ample scope for improvement as we gather more experience with our initiatives and implement ever more complex algorithms.

Collaborations

Clinical data analytics synthesizes a diverse field of disciplines in across-integrative manner to achieve insight. This requires multiple skills and expertise ranging from Clinical, Statistical and Information sciences. We encourage collaborations within Max Healthcare as well as in the wider world of academics and research. Some of our premier collaborations are with Deakin University, Centre for Disease Dynamics Economics & Policy apart from industry partners.

Future plans

We are excited by the immense opportunity in the application of newer developments from the field of healthcare data analytics. So far we have realized success both in applied research and system implementation towards better data capture and clinical decision support. We intend to continue this journey with planned projects in the areas of Infectious diseases, Microbial resistance, Adverse events, and Outcome studies.

References

1. SITUATION ANALYSIS Antibiotic Use and Resistance in India, report downloaded from http://cddep.org/publications/situation_analysis_antibiotic_use_and_resistance_india#sthash.i1e6jORb.FNTBqQ2E.dpbs
2. McGowan, J. E. 2012. Antimicrobial Stewardship—the State of the Art in 2011: Focus on Outcome and Methods. Infection Control and Hospital Epidemiology: The Official Journal of the Society of Hospital Epidemiologists of America, 33(4):331–7
3. Tamma PD1, Cosgrove SE, Antimicrobial stewardship, Infect Dis Clin North Am. 2011 Mar;25(1):245-60. doi: 10.1016/j.idc.2010.11.011.
4. John G. Bartlett; A Call to Arms: The Imperative for Antimicrobial Stewardship. Clin Infect Dis 2011; 53 (suppl_1): S4-S7. doi: 10.1093/cid/cir362
5. http://www.cddep.org/projects/resistance_map/drug_resistance_index_urinary_tract_and_skin_infections#sthash.aQX23lcm.dpbs

Fun at Work
Clinical Directorate and Medical Advisors offsite

In order to align ourselves to the new priorities and challenges in the new financial year and to build stronger teams that can deliver on those challenges, the Clinical Directorate organized an offsite for the CD team members and Medical Advisors of all Max units on 30th of April 2017. Offsite saw several team building and recreational activities along with reflective brain-storming sessions and informative sessions by marketing and legal teams.

The sessions on legal and marketing were appreciated by the group and it was decided that such sessions will be conducted at units for wider clinical audience. The two day offsite came to a close with a session by CEO & MD, Mr. Rajit Mehta wherein he enlightened the group on the future trends and challenges in the healthcare industry and how Max Healthcare is planning to leverage the trends and tackle the challenges.

National & International Recognitions
Awards and Achievements

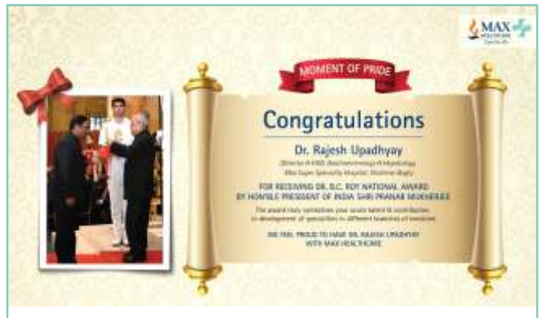
MHC teams have regularly received awards and recognitions from various national and international bodies for their contribution to the medical field. Around 50 Clinicians from various departments and hospitals of MHC have been recognized for achieving excellence in their respective medical specialties in the year 2016-17. Several Max Healthcare facilities were also recognized for excellence in medical quality, service delivery and patient safety.

List of major awards & recognitions can be found in the appendix.

- Dr. Rajesh Upadhyay (Gastroenterlogy and Hepatology), Dr. B.C. Roy National Award by Hon'ble President of India
- Dr. Abhishek Gupta (Nuclear Medicine), Medical excellence award in Nuclear Medicine, Goverment of Telangana
- Dr. Abhishek Goyal (General Surgery), Awarded ChikitsaBhusan by IMA, East Delhi
- Dr. A.K.Singh(Neurosurgery), UttarakhandRatna Award by Chief Minister of Uttarakhand for outstanding contribution in the field of Neurosciences
- Dr. A. K. Anand (Radiation Oncology), "Dr. P. K. Haldar Oration" Award by Association of Radiation Oncologists of India for outstanding contribution in the field
- Dr. Anant Kumar (Urology), Appointed President of Indian Society of Organ Transplantation
- Dr. Archana Bajaj (Medical Admin), DMA Medical Excellence award 2017
- Dr. Ashok Grover (Internal Medicine) , Awarded Fellowship from American College of Physicians
- Dr. Asit Khanna (Cardiology), Fellowship of the American Society for catheterization and intervention (FSCAI)
- Dr. Bharat Kotru(Podiatry), Distinguished Speaker Award-8th Annual wound Care Conference
- Dr. Dilip Bhalla (Nephrology), Appointed as Vice President of Delhi Nephrology Society
- Dr G K Mani (Cardiac Surgery)
  - D.K. Pai Choudhury Oration Award
  - Legendary Doctor Award by All India Journalist Association
- Dr. J B Dilawari (Gastroenterology), Lifetime Achievement Award in Hepatology by National Body of Gastroenterologists
- Dr. KK Talwar (Cardiology)
  - Lifetime Achievement Award (India News Health Award 2016)
  - Homi Bawa Oration (Tata Memorial Centre)
- Dr. Kusum Chand (Homeopathy), Best Clinical research paper award - Ministry of AYUSH
- Dr ManujWadhwa (Orthopedics), Limca Book of Record- 3017 Successful Joint Replacements in 1 year (National Award)
- Dr. MeenuWalia, (Oncology), Bharat Jyoti Award (India International Friendship Society), 'The Illustrious Brands- Making India Proud' (Mail Today)
- Dr. Mukesh Kumar (Plastic Surgery), Awarded Chikitsa Bhusan by IMA, East Delhi
- Dr. N.P Singh (Internal Medicine)
  - DMA Medical Excellence Award
  - Double Helical National Health Award 2017
  - Appointed as Expert member Advisor in ESIC
  - Awarded Out Standing Services Award (IMA - East Delhi Branch)
- Dr. Navin Bhamri (Interventional Cardiology), Awarded VishishtChikitsa Award by DMA
- Dr. Nidhi Gouthi (Radiology), Best paper at the joint conference of Indian National & Asian-Oceanian societies of Radiology
- Dr. ParvinderNarang (Paediatrics), Lecture at International conference , ESPID ,UK
- Dr. P Kar (Gastroenterology) , Dr. R.V Rajam Oration

Award 2016-17

- Dr. Pradeep Chowbey (MAMBS)
  - Award of Excellence in Academics by MoH & FW, GoI
  - India News Health Awards- Winner in the 'Excellence in Bariatric Surgery' category
  - Featured as one of the Living Legends in Healthcare in India by Medgate Today
  - Honorary Professorship of Sri Aurobindo Medical College & Postgraduate Institute Indore
- Dr .Preeti Sharma (Cardiology), Women Achiever Award for Excellence in Interventional Cardiology, Indian Women Convention 2017
- Dr RiteshDebroy (Neuro-anaesthesia) , Fellowship of the Indian Society of Neuro-anaesthesiology& Critical Care
- Dr. Ruby Bansal (Infectious Diseases, PHP/HIV)
  - Selected as visiting consultant at Univ . Of| Illinois Hospital, Chicago
  - Appointed secretary of 9th National Conference of AIDS society of India
- Dr. Sonal Gupta (Neurosurgery), Women's achievement award for excellence in Neurosurgery by, Indian Women Convention
- Dr. Sujeet Jha (Endocrinology)
  - Indian Academy of Diabetes Innovation Award



Dr Rajesh Upadhyay - Dr B.C. ROY NATIONAL AWARD

  - Fellowship of Royal college of Physician Glasgow and Edinburgh (U.K)
- Dr Sumit Gupta (Neuro-anaesthesia) , Fellowship of the Indian Society of Neuro-anaesthesiology& Critical Care
- Dr. Sunil Chowdhary (Plastic Surgery), Coveted membership of the ISAPS (International Society of the Aesthetic Plastic Surgeons)
- Dr.Vanita Arora (Cardiology), Awarded Healthcare personality of the year by Business World
- Dr. V.K.Jain (Neurosurgery), Appointed as Associate Editor of 'Surgical Neurology International' USA - third most read neurosurgical journal in the world
- Dr. Virendar Sarwal (Cardiology), Membership of Society of Thoracic Surgeons
- Dr. Viveka Kumar (Cardiology)
  - Life Time Achievement Award by Gastric Society of India
  - Dr. K Sharan Cardiology Excellence Award by IMA
  - Chikitsa Award by DMA
- Dr. Vivek Kumar (Neurology), Fellowship, Royal college of physician (FRCP)
- Max OncologyTeam (PPG,VSH,SHB,SKT), Best Case Presentation and Best Student Panelist Award at Indo-UK Breast Oncoplasty Masterclass

Max Super Speciality Hospital , Patparganj Recognized as a Centre of Excellence for 'AOMSI Fellowship in Cranio-maxillo Facial Trauma' under Directorship of Dr Rohit Chandra

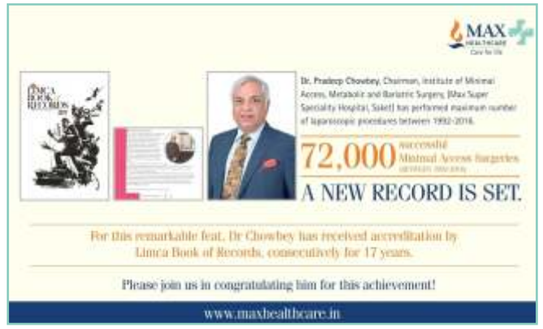
Congratulation for Winning Recognition at AHPI Healthcare Excellence Awards 2017 at Hotel ITC Grand Chola , Chennai

Winner of Asian Patient Safety Award 2016 - Max Smart

Max Healthcare shines at ASQ World Conference for Quality & Improvement

Max Smart – Honorable Mention, Excellence Award for Quality, Safety & Patient Centered Care, 40th World Hospital Congress, Durban, South Africa

Max Hospital, Saket Receives JCI Accreditation



Winner of 'Healthcare Brand Of The Year'
1st Runner Up For- 'Medical Tourism Brand of The Year Award'

Winner of 'Healthcare Brand of The Year' 1st Runner Up For- 'Medical Tourism Brand of The Year Award'

SEMI Excellence Award 2016

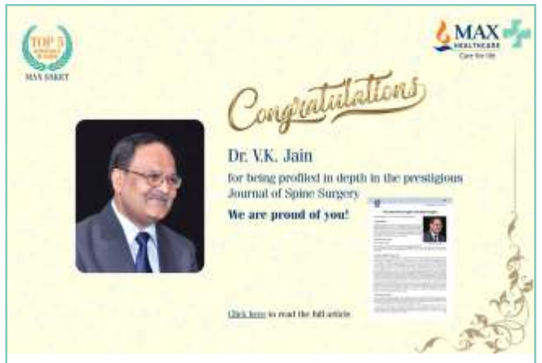
Best Safety Compliances bring Nursing Chief an Award
Max Smart Super Speciality Hospita, Saket

Congratulations to Dr. Vikas Gupta for being awarded as Best Hand & Upper Extremity Surgeon in India

First Book in Asia Pacific Region on Morbid Obesity
Launched by MAMBS, Max Saket

Dr. Naveen Bhamri for Vishisht Chikitsa Ratan Award

Dr. Naveen Bhamri for Vishisht Chikitsa Ratan Award



Congratulations to Dr. VK Jain

ABP News Healthcare Awards

Congratulations- Dr. A.K. Singh

MHC wins at India Health and Wellness Awards 2016

Max Healthcare's 1st Annual Patient Safety Conference

Conference theme: "Teams that Chase Zero!"

30th April & 1st May 2016 | Eros Hotel, Nehru Place, New Delhi

Day1

Welcome Address – Dr. Arati Verma

Plenary Session 1- Accreditation as a trailblazer for Patient Safety

Chair: Dr. KK Kalra

Speaker: Maj. Gen. Pawan Kapur
Session: Impact of safety touch points of NABH Accreditation

Speaker: Dr. Prabhu Vinayagam
Session: Impact of safety touch points of NABH Accreditation

Process Excellence: Is it the most important driver of quality and safety?

Chair: Mr. Prashant Hoskote

Speaker: Mr. Sarang Deo
Session: Lean, six-sigma, TQM: Different flavors of the same recipe (Process Control + Process Improvement)

Speaker: Mr. Kartik Kulbhushan
Session: Changing the paradigm: Innovation

Session: Process Excellence: Is it the most important driver of quality and safety?

Dr. Budhiraja handing the certificate and memento to Mr. Prashant Hoskote

Plenary Session 2
BELIEVING IN and ACHIEVING ZERO HARM, The Flight Plan Forward

Key Note Speaker: Mr. John J. Nance, JD
Session: BELIEVING IN and ACHIEVING ZERO HARM, The Flight Plan Forward

Mr. Rajit Mehta handing the certificate and memento to Mr. John J. Nance

Learning from successes; A new emerging concept in Patient Safety

Key Note Speaker: Professor Ravi P Mahajan
Session: Learning from successes; A new emerging concept in Patient Safety

Mr. Girdhar Gyani handing the certificate and memento to Professor Ravi P Mahajan

Plenary Session 3
Building safe hospitals: What's new

Chair: Mr. Girdhar Gyani

Speaker: Mr. Carson Shearon
Session: Design thinking for patient-safe clinical environments

Speaker: Dr. Shakti Gupta
Session: Planning premises and design considerations from patient safety perspective

Flash Mob – Hand Hygiene by Nurses

Infection Prevention

Welcome Address – Dr. Arati Verma

Chair: Dr. Bansidhar Tarai

Speaker: Dr. Sandeep Budhiraja
Session: Max Healthcare's journey of Antimicrobial Stewardship Program

Speaker: Dr. Abdul Ghafur
Session: Infection control: The ultimate safety measure for the patient...and the hospital!

Managing Vulnerable patients

Chair: Dr. Vinay Aggarwal

Speaker: Dr. Harit Chaturvedi
Session: Patient safety in Oncology

Speaker: Dr. Bulbul Sood
Session: Maternal safety: Empowering providers for improved MNH care during institutional deliveries

Speaker: Dr. Rinku Sengupta
Session: Maternal safety: Reducing unwanted caesarean births

Financial aspects of Quality and Safety

Chair: Dr. Arati Verma

Speaker: Mr. Charles Dalton
Session: An investors perspective

The Organizing Team

Day 2

Plenary Session 1

Showcase Session: Case Studies – Medical Category

Speaker: Dr. Vinay Pawar

Topic: Management of Adverse Drug Reaction incidences associated to potential Drug-Drug Interactions in critically ill patients.

Speaker: Dr. Suchitra Jain

Topic: Reducing Ventilator Associated Pneumonia In Intensive Care: Impact Of Implementing Bundle Care.

Speaker: Dr. Surveen

Topic: Analysis of Fertilization Rate and Pregnancy rate as a Quality Parameter in IVF laboratory to assess the Impact of Quality Improvement Measures

Speaker: Dr. Sushma Dikhit

Topic: Need of the hour: To bring down the Rate of Primary LSCS in a Tertiary Care Hospital to ensure maternal & perinatal safety.

Speaker: Dr. Roopa Salwan

Topic: Acute Myocardial Infraction Programme

Showcase Session: Case Studies – Nursing Category

Speaker: Saleen Simon

Topic: A study to assess the basic knowledge and skill of nurses in critical and non-critical area and basic assessment tool (BAT) was developed in tertiary set-up in order to attain efficient nursing service delivery.

Speaker: Biji Jayapradeep

Topic: A study to assess the effectiveness of structured teaching programme on knowledge and practice regarding patient fall & preventive measures in inpatient areas among nursing personnel's in Max Healthcare

Speaker: Eldhose Vijayan

Topic: Nursing Transformation in patient care

Plenary Session 2
Nursing initiatives

Chair: Dr. Shubnum Singh

Speaker: Dr. Neeraj Agarwal

Session: Strengthening nursing and midwifery cadre in India

Speaker: Mrs. Gracy Mathai

Session: Nursing empowerment for patient safety

Speaker: Mrs. Sandhya Shankar

Session: Shared governance and inter professional collaboration

Plenary Session 3
Electronic Health Records: A tool for Patient Safety

Chair : Dr. Sanjeev K Singh

Speaker: Dr. Dinesh Jain

Session: MHC journey from EHR to data analytics for patient care & safety

Speaker: Mr. Milind Pol

Session: Building safer systems for better care using the right EHR

Plenary Session 4
Medicolegal Aspects of Patient Safety

Chair: Dr. BK Rana

Speaker: Mr. MK Bajpai

Session: The perspective of the legal system

Plenary Session 2
Communication

Chair: Dr. Vijay Aggarwal

Co-Chair: Mrs. Upasana Arora

Speaker: Dr. Alexander Thomas

Session: Communication as a simple but crucial necessity for patient safety

Speaker: Dr. Raj Tobin

Session: Communication in the Perioperative Environment

Awards and Valedictory Session

Title: Analysis of Fertilization Rate and Pregnancy rate as a Quality Parameter in IVF laboratory to assess the Impact of Quality Improvement Measures

Title: Acute Myocardial Infarction Programme

Title: A study to assess the basic knowledge and skill of nurses incritical and non-critical area and basic assessment tool (BAT) was developed in tertiary set-up in order to attain efficient nursing service delivery.

Title: Nursing Transformation in patient care

Title: Key to VTE Risk Assessment- Unlocked

Title: Zero preventable deaths by 2020-The promising future of health care

Title: Review of Cesarean Section Rate at a Super Speciality Hospital

Title: Clinical audit of antibiotic use in critical care

Title: Raising awareness among the patients regarding surgical site infection prevention by means of patient education material on wound care.

Title: "A pre experimental study to assess the effectiveness of triple identification practice among staff nurses for vulnerable patient safety and to develop a self instructional module in a selected IPDs of max super specialty hospital at Saket".

Title: Nursing Transformation in patient care

Peer Reviewed Journal List 2016-2017 (March)

1	Kumar P1, Khanna G2,3, Batra S2, Sharma VK2,3, Rastogi S1	Kumar P, Khanna G, Batra S, Sharma VK, Rastogi S; Chlamydia trachomatis elementary bodies in synovial fluid of patients with reactive arthritis and undifferentiated spondyloarthropathy in India. Int J Rheum Dis. 2016 May; 19 (5) : 506 -11. doi: 10.1111/1756-185X.12364. Epub 2014 Apr 9.	Ortho	Max PPA
2	Hemendra Kumar Agrawal, Mohit Garg, Balvinder Singh, Ashish Jaiman, Vipin Khatkar, Shailender Kharef, Sumit Batra, Vinod Kumar Sharma,	Agrawal H.K, Garg M, Singh , Jaiman A, Khatkar V, Kharef F, Batra S, Sharma V.K, Management of complex femoral nonunion with monorail external fixator : A prospective study Journal of Clinical Orthopedics and Trauma Available online 8 June 2016	Ortho	Max PPA
3	Karan Raheja, PS Narang, AJ Chitkara, Satvinder Kapoor, Nikhil Vinayak and Neha Bandhari	Raheja K, Narang PS, Chitkara AJ, Kapoor S, Vinayak N, et al. Hematite Ingestion in G6PD Deficiency: Case Report. J Clin Toxicol 6:295. doi:10.4172/2161-0495.1000295	Pediatrics	Max SHB
4	Dr. N. P. Singh	Brigandi R.A, Johnson B, Oei C, Westerman M, Olbina G, Singh N.P; A Novel HIF-prolyl Hydroxylase Inhibitor (GSK1278863) for Anemia in CKD: A 28-Day Phase IIA Randomized Trial. AJKD 2016 Jun;67(6):861-71.	Internal Medicine	Max VSH
5	Dr. N. P. Singh	Sarkar T, Singh N.P, Kar P, Kapoor S, Kumar A, Garg N; Does Angiotensin Converting Enzyme-1 (ACE-1) gene polymorphism lead to chronic kidney disease among hypertensive patients?. Renal failure 2016. Ren Fail. 2016 Jun;38(5): 765-9. doi: 10.3109/ 0886022 X .2016.1160247. Epub 2016 Apr 6.	Internal Medicine	Max VSH
6	Dr. N. P. Singh	Shah H.R, Singh N.P, Aggarwal N.P, Jha L.K, Singhania D, Kumar A; Cardio-renal syndrome-clinical outcome study JAPI; Journal of The Association of Physicians of India Vol. 64 December 2016 4	Internal Medicine	Max VSH
7	Sujata N, Tobin R, Kaur R, Aneja A, Khanna M, Hanjoora VM.	Sujata N, Tobin R, Kaur R, Aneja A, Khanna M, Hanjoora VM. Randomized controlled trial of tranexamic acid among parturients at increased risk for postpartum hemorrhage undergoing cesarean delivery. Int J Gynaecol Obstet. 2016 Jun; 133(3):312-5. doi: 10.1016/j.ijgo.2015.09.032. Epub 2016 Feb 16. PubMed PMID:26952346	Anesthesia	Max Saket (W)
8	Dr. Sujeet Jha	Jhaet al. First Identification of a Novel Glucokinase (GCK) Mutation in an Indian Female: Normal Pregnancy Outcomes. The Lancet Diabetes & Endocrinology, 2016; 4:302.(April 2016) 2016 Apr;4(4):302. doi: 10.1016 / S2213-8587 (16) 00040-1.	Endocrinology	Max Saket (E)

S. No.	Author/Authors	Title	Department	Max Location
9	Dr. Sujeet Jha	Jha S et al. A Prospective Observational Study to Assess the Effectiveness of an Electronic Health (E-Health) and Mobile Health (M-Health) Platform versus Conventional Care for the Management of Diabetes Mellitus.Int J Diabetes Dev Ctries DOI 10.1007/s13410-016-0501-x (June 2016)	Endocrinology	Max Saket (E)
10	Anuj Khurana,	Khurana A, Mukherjee U, Singarave S; Primary retroperitoneal mucinouscystadenocarcinoma in a male patient. Indian Journal of Pathology & Microbiology Volume 59, Issue 2, April 2016, p229-231	Histo Pathology	Max Saket (w)
11	Badyal B, Rao S, Sandhu K, Walia BS	Badyal B, Rao S, Sandhu K, Walia BS. Transcranial Doppler guided cerebral blood flow augmentation resulting in near complete resolution of cerebral infarct. A case report of intractable hypertension. Journal of Neuroanaesthesiology and Critical Care 2016; 13:141-144 (May)	Neuro Anesthesia	Max Saket (w)
12	Prabhakar S, Jain V, Sandhu K	Prabhakar S, Jain V, Sandhu K. An unusual case of hypoplastic internal jugular vein in a vein of Galen malformation. Journal of Neuroanaesthesiology and Critical Care 2016; 13:149-150 (May)	Neuro Anesthesia	Max Saket (w)
13	Raha A, Wadehra A, Sandhu K, Dasgupta A	Raha A, Wadehra A, Sandhu K, Dasgupta A; Acute Subdural Hematoma Causing Neurogenic Pulmonary Edema Following Lumbar Spine Surgery. (2016), Journal of neurosurgical anesthesiology 29 (1) 63-64	Neuro Anesthesia	Max Saket (w)
14	Mudit Agarwal, Abhishek Singh, Andleeb Abrari, Naveen Singh	Agarwal M; Singh A; Abrari A; Singh N, Posterior Pharyngeal Wall: A Rare Case Report with unique Reconstruction using Lateral Trapezius Flap;	Pathology & Pulmonology	Max Saket (w)
15	Dr. Singhal	Singhal D; Elderly women with acute abdomen and gastric mass on imaging JAMA Surgery May 2016.	Surgical Gastroent-erology	Max Saket (E)
16	Dr. Sunil Garg	Garg S.K, Singh O, Deepak D, Singh A, Yadav R, Vashist K ; Extracorporeal Treatment with high volume continuous venovenous Hemodiafiltration and charcoal based sorbent hemoperfusion for severe metformin associated lactic acidosis (MALA): A Case Report" Indian J Crit Care Med. 2016 May; 20(5): 295–298. doi: 10.4103/0972-5229.182205	Critical Care	Max Saket (W)
17	Dr Sonia Mahajan, Dr. Shefali Kalra, Dr. Madhavi Chawla, Dr. Pankaj Dougall,	Mahajan S, Kalra S, Chawla M, Dougall P, Detection of Diffuse Infiltrative Primary Hepatic Lymphoma on FDG PET CT: Hallmarks of Hepatic Superscan World Journal of Nuclear Medicine/ Vol 15/Issue 2/May 2016	Nuclear Medicine	Max Saket (E)

S. No.	Author/Authors	Title	Department	Max Location
18	Neema PK, Kapoor MC.	Neema PK, Kapoor MC. Anesthetic management of a patient with mitral stenosis undergoing mitral valve repair/replacement. MAMC J Med Sci 2016; 2:94-8	Anesthesia	Max Smart
19	Saxena P, Kumar K, Mittal S et.al.	Saxena P, Kumar K, Mittal S et.al. Acute fibrinous and organizing pneumonia: A rare form of nonbacterial pneumonia. Indian J Crit Care Med 2016; 20:245-7.	Pulmonology	Max Smart
20	Dr. Aparna Sinha,	Sinha A; Obstructive Sleep Apnea: the growing Menace!! January 10, 2016 0Vol 2| Issue 1 | Jan – Apr 2016 | page:2-3	MAMBS	Max Saket(E)
21	Dr. Aparna Sinha, Dr. Lakshmi Jayaraman, Dr. Dinesh Punhani, Dr. Pradeep Chowbey	Sinha A; Enhanced Recovery after Bariatric Surgery in the Severely Obese, Morbidly Obese, Super-Morbidly Obese and Super-Super Morbidly Obese Using Evidence-Based Clinical Pathways: a Comparative Study; March 2017, Volume 27, Issue 3, pp 560–568	MAMBS	Max Saket (E)
22	Dr. Dinesh Singhal, Dr. Vashistha , Dr. Bharat Aggarwal,	Singhal D, Vashistha A, Aggarwal B, Young Adult With Multivisceral Lesions and Hypoglycemia. July 2016Gastroenterology 2016;151:e24; DOI: http://dx.doi.org/10.1053/j.gastro.2016.06.006	Surgical Max Gastro-enterology	Saket (E)
23	Dr. Ankur Gupta	Gupta A; Unusual behavior of hepatocellular carcinoma in a patient with liver cirrhosis- Journal of Gastroenterology and hepatology: Open access; Vol 4;Issue 3- 2016	Gastro-enterology	Max Dehradun
24	Dr. Ankur Gupta,	Gupta A, Rai P, Singh V, Gupta RK, Saraswat VA; Intrahepatic biliary duct branching patterns, cystic duct anomalies, and pancreas divisum in a tertiary referral center: A magnetic resonance cholangiopancreaticographic study. Indian Journal of Gastroenterology : Official Journal of the Indian Society of Gastroenterology [23 Sep 2016, 35(5):379-384];	Gastro-enterology	Max Dehradun
25	Kapoor MC, Rana S, Singh AK, Vishal V, Sikdar I.	Kapoor MC, Rana S, Singh AK, Vishal V, Sikdar I. Nasal mask ventilation is better than face mask ventilation in edentulous patients. J Anesthesiology Clinical Pharmacology 2016;32:314-8	Anesthesia	Max Smart
26	Kapoor MC.	Kapoor MC. Types of Studies and Research Design. Indian J Anaesth 2016;60:626-30	Anesthesia	Max Smart
27	Dr. Suchita Lahiri, Dr. Arun Puri	Lahiri S, Puri A, Heredity Angioneurotic edema in Emergency :A Case report ; Journal of Anesthesia and Crtical Care 2016 May-Aug 2 (2); 18-20	Anesthesia	Max PPG

S. No.	Author/Authors	Title	Department	Max Location
28	Mamta Jain, Dr. Suchita Lahiri, Dr. Arun Puri, Anish Singh	Jain M, Lahiri S, Puri A, SinghA; Nasogastric tube malposition leading to a ventilator leak: A case report; Journal of Anesthesia and Crtical Care 2016 May-Aug 2 (2); 13-15	Anesthesia x	Max PPG
29	Sunny Malik,	Malik S, Coccydynia with central sensitization plays an important role as pain generator a case report; JORAPAIN May-August 2016;2(2):62-64.	Anesthesia	Max PPG
30	Sunny Malik,	Malik A, Mirror visual feedback treatment for meralgia paresthetica JORAPAIN May-August 2016; 2(2):59-61.	Anesthesia	Max PPG
31	Sunny Malik,	Malik A, Magnetic resonance imaging alone is not enough to rule out the radiculaopathy diagnostic intervention has arole January-April 2016 2(1)33-5	Anesthesia	Max PPG
32	Shalini Chawla, Ashish Ranjan, N. P. Singh, Neena Garg, Anish Kumar.	Chawla S, Ranjan A, Singh N.P, Garg N, Kumar A. Assessment of Drug Utilization and Quality of Life in Patients of Chronic Kidney Disease in a Tertiary Care Hospital. WJPPS 2016;5(9):1214-26.	Internal Medicine	Max VSH
33	Dr. Swasti	Swasti, Fallopian Tubes: Keep or Remove?; Acta Medica International; Jan-Jun 2016; Vol 3; Issue1.	O&G	Max VSH
34	Dr. P.Kar	Kar P, Karra V.K, Jyothi S, Rutalla R; Clinical significance of quantitative HBsAg titres and its correlation with HBV DNA levels in the natural history of hepatitis B virus infection- title: Journal of Clinical and experimental hepatology- 02-07-2016	Gastro-enterology	Max VSH
35	Dr. P. Kar	Kar P, HCV- NS5A region and response to pegylated-interferon alpha plus ribavirin therapy: mutational analyses in patient with chronic HCV infection- International Journal of Current Research Vol. 8, Issue, 09, pp.38114-38123, September, 2016	Gastro-enterology	Max VSH
36	Mittal D. , Gulati V., Das I., Datta K.	Mittal D. , Gulati V., Das I., Datta K. Managing Abdominal Pain in the Emergency Department: Modern Emergency Medicine the Changing Face of Provisional Diagnosis; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.4	Emergency Medicine	Max SHB
37	Khan S.M , Sandhu H., Das I., Datta K.	Khan S.M , Sandhu H., Das I., Datta K. Dengue NS1 Antigen Level: A Potential Tool for Predicting Disease Severity in ER; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.5	Emergency Medicine	Max SHB
38	Sarat Naidu, Monil Patel, Indranil Das , Kishalay Datta	Naidu S, Patel M, Das I, Datta A; Methemoglobinemia & Hemolysis Secondary to Hematite (Geru Powder) Ingestion in a G6pd Deficient Patient ; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.8	Emergency Medicine	Max SHB

S. No.	Author/Authors	Title	Department	Max Location
39	Naidu S., Sandhu H.,	Naidu S., Sandhu H., Rawat A., Datta K; A Rare & Unusual Case of â œMiller-Fisher Variant of Gullain-Barre Syndromeâ ; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.10	Emergency Medicine	Max SHB
40	Singh A., Khan S., Datta K., Das I., Govil P., Nagrani S.K.	Singh A., Khan S., Datta K., Das I., Govil P., Nagrani S.K. Case Report of TTP, A Diagnosis Worth Consideration in Patients with Coagulation Disorders; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.11	Emergency Medicine	Max SHB
41	Gupta Ayush, Mohit Kaul, Das Indranil, Datta Kishalay	Gupta A, Kaul M, Das I, Datta K; A Typical Presentation of Grey Turnerâ ™s Sign in Acute Necrotizing Pancreatitis; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.12	Emergency Medicine	Max SHB
42	Kaul Mohit, Gupta Ayush, Datta Kishalay, Das Indranil	Kaul M, Gupta A, Datta K, Das II; An Unusual Presentation of Inferioposterior Wall Acute Myocardial Infarction as Severe Headache; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.13	Emergency Medicine	Max SHB
43	Gupta Ayush, Khan Shahid, Mittal Deepika, Das Indranil, Datta Kishalay	Gupta A, Khan S, Mittal D, Das I, Datta K; Case Report of Cryptococcal Meningitis in an Immunocompetent Host ; DOI http://dx.doi.org/10.21088/ijem.2395.311X.2116.14	Emergency Medicine	Max SHB
44	Dhand Nitish, Das Indranil, Datta Kishalay	Dhand N, Das I, Datta K; An Unusual Presentation of CVA As Epilepsy Partialis Continuum; DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.15	Emergency Medicine	Max SHB
45	Kalita R., Kaul M., Das I., Datta K.	Kalita R, Kaul M., Das I., Datta K. Guillain-Barre Syndrome: Diagnostic Challenge in ED to Rule Out Other Causes of Polyneuropathy, DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.16	Emergency Medicine	Max SHB
46	Kalita R., Naidu S., Govil P., Datta K.	Kalita R, Naidu S., Govil P., Datta K. Foreign Body Aspiration in a Child Presented with Cardio-Pulmonary Arrest DOI: http://dx.doi.org/10.21088/ijem.2395.311X.2116.18	Emergency Medicine	Max SHB
47	Raheja K, Narang P.S, Kapoor S, Chitakara A.J, Vinayak N, Kalyani A.	Raheja K, Narang P.S, Kapoor S, Chitakara A.J, Vinayak N, Kalyani A. Unusual Presentation of Lupus in Pediatric Patient: Case report, open Journal of Rheumatology and Autoimmune Diseases, 2016, 6,102-105 Nov 15, 2016	Pediatrics	Max SHB
48	Rahul Nathani, Nitin Dayal, Guarav Dixit	Nathani R, Dayal N, Dixit G; Single versus dual platform analysis for hematopoietic stem cell Enumeration using ISHAGE Protocol ; Indian Socieity of Hematology & Transfusion Medicine , 2016, 15 Nov 2016	Hematology, Pathology	Max SHB
49	K Bembem T Singh, N P Singh, A Saxena, S L Jain	Bembem K, Singh T, Singh N.P, Saxena A, Jain S L; Bone Histo-Morphology in Chronic Kidney Disease Mineral Bone Disorder Received: 25 June 2016 / Accepted: 21 November 2016; Indian Society of Haematology & Transfusion Medicine 2016	Internal Medicine	Max VSH

S. No.	Author/Authors	Title	Department	Max Location
50	H R Shah, N P Singh, N P Aggarwal, L K Jha, D Singhania, A Kumar.	Shah H.R, Singh N.P, Aggarwal N P, Jha L.K, Singhania D, Kumar A .Cardio-renal syndrome-clinical outcome study. JAPI 2016;64:41-6	Internal Medicine	Max VSH
51	V Gehlot, S Mahant, A K Mukhopadhyay, K Das, J Alam, P Ghosh, R Das.	V Gehlot, S Mahant, A K Mukhopadhyay, K Das, J Alam, P Ghosh, R Das. Low prevalence of clarithromycin-resistant Helicobacter pylori isolates with A2143G point mutation in the 23S rRNA gene in North India. Journal of Global Antimicrobial resistance. 2016; 6, 39-43.	Gastro-enterology	Max VSH
52	Valentina Gehlot,	Gehlot V, Mahant S, Vijayraghwan P, Das K, Hoda S, Das R.Therapeutic potential of lichen Parmelia perlata against the dual drug resistant Helicobacter pylori. International Journal of Pharmacy and Pharmaceutical Sciences 2016; 8(1).	Gastro-enterology	Max VSH
53	Kapoor M C.	Kapoor M C. To TEE or not to TEE'. Ann Card Anaesth 2016;19:S1	Anesthesia	Max Smart
54	S Jha, M. Krishna, S Siddiqui, M Panda, R Saxena, L Raghuvanshi, H Bhatt, A Shrivastava, A. Bhargava, K Singh, S Waghdhare	Jha S, Krishna M, Siddiqui S, Panda M, Saxena R, Raghuvanshi L, Bhatt H, Shrivastava, Bhargava A, Singh K, Waghdhare S; The Impact of Diet, Physical Activity and Weight Perception on Body Mass Index (BMI) In Patients of Indian Origin. J J Obesity. 2016. 2(2): 030.	Endocrinology	Max Saket(E)
55	Jha et al.	Jha et al. A prospective observational study to assess the effectiveness of an electronic health (E-health) and mobile health (M-health) platform versus conventional care for the management of diabetes mellitus International Journal of Diabetes in Developing Countries December'16	Endocrinology	Max Saket (E)
56	Bansidhar Tarai10,	Tarai B,Issues in antifungal stewardship: an opportunity that should not be lost; J Antimicrob Chemother doi:10.1093/jac/dkw506; 2016 (Feb 2017)	Pathology	Max Saket (W)
57	Bansidhar Tarai11,	Tarai B, Candida auris candidaemia in Indian ICUs: analysis of risk factors: Antimicrob Chemother doi:10.1093/jac/dkx034;accepted 17 January 2017	Pathology	Max Saket (W)
58	Dr. Subhash Gupta	Gupta S; MiRNA199a-3p suppresses tumor growth, migration, invasion and angiogenesis in hepatocellular carcinoma by targeting VEGFA, VEGFR1, VEGFR2, HGF and MMP2 ; Cell Death & Diease ; Nature ; Feb-March 2017	Liver and Biliary Sciences	Max Saket (W)
59	Dr. A. K. Anand	Anand A.K.; Significance of Peri Neural Invasion in locally advanced bucco alveolar complex carcinomas treated with surgery and post operative Radiation (+/- concurrent chemotherapy). Journal of the Sciences & Specialities Head & Neck 2017 (Feb -March)	Radiation Oncology	Max Saket (E)

S. No.	Author/Authors	Title	Department	Max Location
60	Dr. Sujeet Jha	Wahl S, Drong A, Lehne B, Jha S, John C Chambers. Epigenome-wide association study of body mass index, and the adverse outcomes of adiposity. Nature 2017; 541 : 81–86	Endocrinology	Max Saket (E)
61	K. K. Talwar, Samir Malhotra	Talwar K.K, Malhotra S; Medical Research in India: Time to Act; Journal of the Practice of Cardiovascular Sciences ¦ May-August 2016 ¦ Volume 2 ¦ Issue 2	Cardiology	Max Saket (E)
62	Dr.Kamal Preet Palta, Dr.Sarmad Pandith	Palta K P, Pandith S; Seizure as the Rare Manifestation in a Young Healthy Adult with Pulmonary Embolism: Case Report ; IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) e-ISSN: 2279-0853, p-ISSN: 2279-0861. Volume 16, Issue 2 Ver. IV (February. 2017), PP 08-10 www.iosrjournals.org	Emergency Medicine	Max Smart
63	Saxena P, Dewan A,	Saxena P, Dewan A, Accidental Pulmonary Aspiration of endodontic file, Guident (Mag) PUBLICATION IN DENTAL JOURNAL - Endodontics; Jan 2017:20-22	Dental	Max Smart
64	Sunny Malik1, Arun Puri1, Rajeev Taneja1, Shraddha Malik2	Malik S, Puri A, Taneja R, Malik S. Critical incident in operation theatre: Surgical table remote might be the cause. Ann. Int. Med. Den. Res. 2017; 3(2):AN03:AN04.	Anesthesia	Max PPG
65	Sunny Malik, Gautam Das, Arun Puri, Rajeev Taneja, Shraddha Malik, Vikky jaiswal	Malik S, Das G, Puri A, Taneja R, Malik S, Jaiswal VOpioid Induced Hyperalgesic : An entity not so common but exits; Jorapain; Januray-April 2017; 3(1);54-55	Anesthesia	Max PPG
66	Nisha Bhatt, Rahul Nathani S.K.Gupta	Bhatt N , Nathani R Gupta S.K; Super staturated calcium phosphate rinse in prevention and treatment of mucositis in patients undergoing haematopoetic stem cells : Experimental & Clinicla Transplantation: 23 feb 2017	Haematology	Max PPG
67	Daljit Kaur, Veena Doda,	Kaur D, Doda V, Hemal A; Effectiveness of Blood Transfusion Therapy And Awareness Among Kinfolks Of Thalassemia Patients Visiting A Tertiary Care Hospital In North India; Effectiveness Of Blood Transfusion Therapy; NJIRM 2016; Vol. 7(3) May – June eISSN: 0975-9840 pISSN: 2230 - 9969 11	Transfusion Medicine	Max DDN
68	Kaur D, Doda V, Hemal A.	Kaur D, Doda V, Hemal A. Blood Utilization and Quality Indicators - Trend at a Super Speciality Hospital in Northern India; Hematology & Transfusion International Journal ; May 2016, 2(3): 00037	Transfusion Medicine	Max DDN

S. No.	Author/Authors	Title	Department	Max Location
69	Kaur, Doda V,Kandwal M,	Kaur, Doda V, Kandwal M, Parmar IABO Rh(D) blood group distribution among whole blood donors at two different setups of tertiary care hospitals in North India. International J Community Med Public Health, 2016;3: 2806-2811.	Transfusion Medicine	Max DDN
70	Kaur D, Bains L,Kandwal M, Parmar I.	Kaur D, Bains L, Kandwal M, Parmar I. Erythrocyte Alloimmunization and Autoimmunization among Blood Donor and Recipient Population Visiting a Tertiary Care Hospital in Northern India. Journal of Clinical and Diagnostic Research, 2016.	Transfusion Medicine	Max DDN
71	Shobit Garg	Garg S The efficacy of cerebellar vermal deep high frequency (theta range) repetitive transcranial magnetic stimulation (rTMS) in schizophrenia: A randomized rater blind-sham controlled study; http://dx.doi.org/10.1016/j.psychres.2016. 07.023; 0165-1781/© 2016 Published by Elsevier Ltd.	Psychiatry	Max DDN
72	Singh N P, Prakash A.	Singh N P, Prakash A.Evolution of a research paper: From completion of research to writing a research paper. Pearls on scientific paper writing. PRF-API:5-8	Internal Medicine	Max VSH
73	Kaza RM, Bains L, Kaur B, et al.	Kaza RM, Bains L, Kaur B, et al. No needle no scalpel vasectomy – an Indian experience. J. Evolution Med. Dent. Sci. 2017;6 (21): 1691-1694, DOI : 10.14260/ Jemds/2017/ 372.	Surgery	Max VSH
74	Sundeep Singh Saluja, Vaibhav Kumar Varshney, Pramod Kumar Mishra, Pritul Saxena	Saluja S. S., Varshney V.K, Mishra P.K, Saxena P; Step-Down Approach for Pharyngoesophageal Corrosive Stricture: Outcome and Analysis World Journal of Surgery Mar 2017.	Surgery	Max VSH
75	Pramod Kumar Mishra, Sundeep Singh Saluja, Nabi Prithiviraj , Nilesh Patil	Mishra P.K , Saluja S.S; Prithiviraj N, Patil N, Predictors of curative resection and long term survival of gallbladder cancer – A retrospective analysis ; American journal of surgery American journal of surgery; Feb 2017.	Surgery	Max VSH
76	Talwar S, Makhija N, Sampath kumar A	Talwar. S, Makhija N, Sampath A K; Pathological changes in the autologous pericardial Aortic velvet 10 yrs followup. Annals of Thoracic surgery March-2017.	Surgery	Max VSH
77	Sonia Sharma, Sanjiv Saxena	Sharma S, Saxena S; Glomerulonephritis – Do We Have Promising Role of Monoclonal Antibodies? J Clin Exp Nephrol 1: 23. DOI: 10.21767/2472-5056.100023	Nephrology	Max SHB

Glossary

ACLS	Advanced cardiac life support
AHRQ	Agency for Healthcare Research and Quality
ALOS	Average Length of Stay
AMI	Acute Myocardial Infarction
AMS	Anti-Microbial Stewardship
ASQ	American Society for Quality
ATLS	Advanced Trauma Life Support
AV	Audio Visuals
BAU	Business As Usual
BCMA	Bar Coded Medication Administration
BLS	Basic Life Support
CAPA	Corrective & Preventive Actions
CAUTI	Catheter Associated Urinary Tract Infections
CD	Clinical Director
CD-HR	Clinical Directorate - Human Resources
CEO	Chief Executive Officer
CH	Clinician Hiring
CLABSI	Central Line Associated Blood Stream Infections
CPRS	Computerized Patient Record System
CRP	Clinical Radiology Pathology
DCGI	Drug Controller General of India
DDF	Devki Devi Foundation
DMS	Deputy Medical Superintendent
DRI	Drug Resistance Index
DSIR	Department of Scientific & Industrial Research
DVT	Deep Vein Thrombosis
ECG	Electrocardiogram
EDM	Electronic Direct Mail
EMO	Emergency Medical Officer
ER/ ED	Emergency Department

ERCP	Endoscopic Retrograde CholangioPancreatography
EVP	Employee Value Proposition
FnB	Food and Beverages
GI	Gastroenterology
HAI	Hospital Acquired Infections
HAPU	Hospital Acquired Pressure Ulcers
HOD	Head of Department
HPB	Hepato-Biliary
ICH-GCP	International Conference on Harmonisation-Good Clinical Practice
ICMR	Indian council of medical research
ICN	Infection Control Nurse
ICU	Intensive care Units
IFEM	International Federation of Emergency Medicine
IMRB	Indian Market Research Bureau
ISO	International Organization for standardization
IT	Information Technology
IV	Intravenous
IVF	Invitro Fertilization
JCI	Joint Commission International
L&D	Learning & Development
LAMA	Leave Against Medical Advice
LTP	Liver Transplant Program
MA	Medical advisor's
MDT	Multidisciplinary team
MHC	Max Healthcare
MI	Myocardial Infarction
MIME	Max Institute of Medical Excellence
MLC	Medicolegal cases
MM	Mortality Meeting
MOHFW	Ministry of Health and Family Welfare
MoS	Measure of Success
MoU	Memorandum of Understanding
MQ	Medical Quality

MRSA	Methicillin resistant Staphylococcus aureus
MS	Medical Superintendent
MSSH	Max Super Specialty Hospital
NABH	National Accreditation Board for hospitals & Healthcare Providers
NCR	National Capital Region
NRP	Neonatal Resuscitation Program
NSI	Needle Stick Injuries
OOR	Office of Research
OT	Operation Theatre
PACU	Post Anaesthesia Care Unit
PALS	Pediatric Advanced Life Support
PCNL	Percutaneous Nephrolithotomy
PISC	Performance Improvement & Safety Committee
PSG	Patient Safety Goals
QCI	Quality Council of India
RIS-PACS	Radiology Information System - Picture Archiving And Communication System
RMO	Resident Medical Officer
RRT	Rapid Response Team
r-tPA	Recombinant tissue plasminogen activator
SME	Subject matter experts
SOPs	Standard Operation Procedures
SpO2	Saturation of Peripheral Oxygen
SSI	Surgical Site Infections
TAT	Turnaround time
TNI	Training Need Identification
VAE	Ventilator Associated Events
VAP	Ventilator Associated Pneumonia
VOC	Voice of Customer
VP	Vice President
VRE	Vancomycin resistant enterococci
VTE	Venous thrombo-embolism
YoY	Year on Year