Dr L H Hiranandani Hospital

FEBRUARY 2021

Healthy MILESTONES

INDIA FIGHTS BACK AND WE JOINED THIS WAR

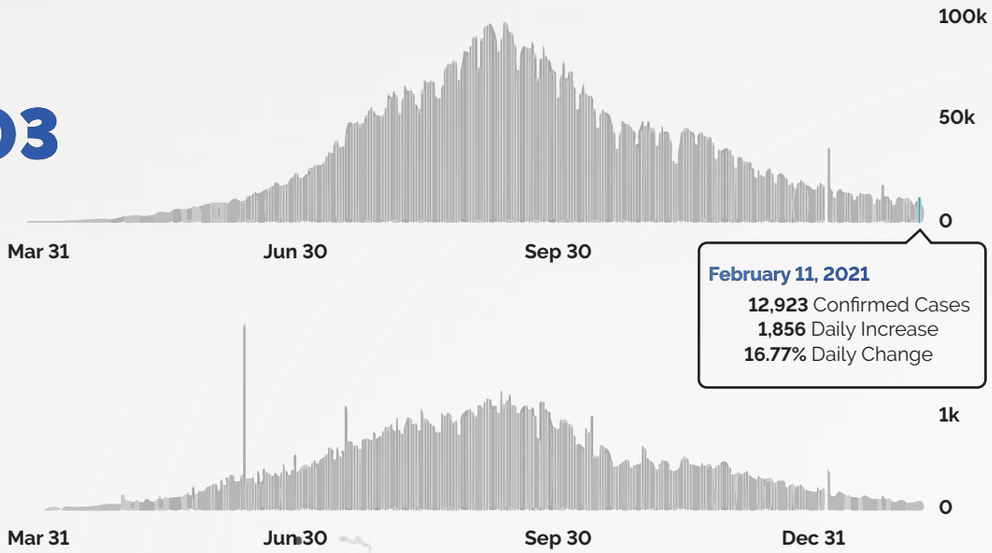
"We have **WON** our City back"

India Situation

Daily Weekly

10,880,603
confirmed cases

155,447
deaths



Source: World Health Organization

Dr L H Hiranandani Hospital
with its warriors led the charge in the defense of the city of Mumbai against this pandemic. We worked continuously since the outbreak in our country, treating over 3,500 hospitalised or admitted patients and over 10,000 patients on an out-patient basis.

Hiranandani Hospital

Your Family Superspeciality Hospital™

To be the preferred choice of healing and good health

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from the Chief Managing Trustee

Dr Niranjan Hiranandani

Chief Managing Trustee

“There was a time when Mumbaikars thought that Mumbai was lost, but the spirit here is indomitable, and YOU led the charge to reclaim Mumbai

I am proud of each and everyone in the hospital!! From **March 2020** till today you have been on your feet fighting an unseen enemy. The pandemic of **SARS-CoV-2 virus** was relentless but all of you stood firm.

Both the fourth and the fifth floors had to be manned and also the fever clinic. I am told that you all worked in shifts for hours on end, day in and out. You'll embodied the spirit of **Chairman, Dr L H Hiranandani**, who would have reacted in a similar manner. There was a time when Mumbaikars thought that Mumbai was lost, but the spirit here is indomitable, and you led the charge to reclaim Mumbai.

It is not easy to be in the **frontline** especially when you have loved ones waiting at home who are concerned about your well-being. Yet you were concerned about the well-being of those who came to you seeking help. None of them you knew but they took your all. How commendable.

I am particularly happy that you have carved a niche for yourself in Mumbai as the hospital that rose as one when it was required the most. I raise my hand in salute.

Thank you ...God bless you and our hospital.

Message
from the Trustee

Mr Surendra Hiranandani

Trustee

The admissions were unrelenting. The pressure was constant. I am told that several doctors and nurses were afflicted by the virus and recovered to come back and re-join the battle.
This is exemplary courage.

The year 2020 has been difficult for humanity. A virus *(SARS-Cov-2)* had brought the world to its knees, India and Mumbai were not spared. Those were dark days, the going was difficult. India, Maharashtra, and Mumbai fought back. Our hospital was at the forefront of the battle in Mumbai. I am aware that all at the hospital worked long hours and in continuity, round the clock to save the admitted patients. The admissions were unrelenting. The pressure was constant. I am told that several doctors and nurses were afflicted by **the virus and recovered to come back and re-join the battle**. This is exemplary courage.

While the intensity of the viral infection has reduced, the proverbial tail of the elephant is still in the room. I urge you all to remain forever vigilant and maintain the precautions that you have been taking to date. While you serve humanity, you too have your loved ones who fear for you and want you to be safe. You too must keep them safe by maintaining the same strict hygiene practice that you keep at the hospital.

This year, I am sure, will bring good tidings. I congratulate all of you for your stupendous performance and also pray to God that all of you and your families are safe.

Editorial

Dr Suvin Shetty

Pathologist & Editor

Some say that this year should be deleted from our timeline, some say that this year showed us what we are made of. I sincerely feel the latter.

Year, 2020.

Some say that this year should be deleted from our timeline, like it never existed. Some say that this year showed us what we are made of and how we face a calamity thrown at us. I sincerely feel the latter. The calamity, in this case, a **SARS-CoV-2 virus** originating from a Chinese province caused a global havoc, will come in any form but it is up to the human how he or she faces it, fights it and wins it. **This annual issue is the compilation of the human story, told in different words, by different people, in different settings**.

Our leadership recognized this danger lurking in. It knew that the nation and the city needed us. It educated, trained, motivated, built tools to help handle the pandemic. Formed a task force to brainstorm ideas, implement process, and proactively handle issues. **The hospital was at the forefront since the beginning, managing over 10,000 outpatients and about 3,500 admitted patients.**

We created **isolation wards and separate intensive care units** to manage critical patients. We created self-sufficient clinics to handle patients. We created separate corridors to handle traffic. We managed man-resources to handle this crisis. **We created post-COVID clinics to manage the aftermath. And now we are equipping the fraternity with vaccines to continue the fight**.

The doctors, the nurses and the 'others' knew the dangers. They had their fears, personal ghosts. But they kept these aside. In their personal protective gear, they sought to take care of the community. Several of our warriors fell to the infection, but, all came back to take care of their responsibility.

Finally, the annual note would have been incomplete without mentioning our gratitude to those who **donated** their **blood** *(plasma)* after their recovery to save several lives. There were several community members who came forward to help the hospital to conduct itself in such a difficult time. We thank you all.

Stay safe, protect yourself, and spend time with your loved ones.

Dr Sujit Chatterjee
Chief Executive Officer

COVID-19:

Challenges and Measures taken by Dr L H Hiranandani Hospital

Preamble:

SARS-Cov-2 Virus has devastated the world like no other. COVID 19 has created the perfect disaster. It is apt to say that it has **destroyed physical, mental, social and spiritual wellbeing along with wrecking the global economy!!**

Its roots sprouted in Wuhan in China, but the spread was rapid. India was not spared and recorded its first case on **January 30, 2020**. The **World Health Organization** *(WHO)* declared COVID 19 as a **Global Pandemic** on **March 11, 2020**. India readied itself for the war against the virus. The **Epidemic Act** was declared on **March 12, 2020** and the **Disaster Act** on **March 25, 2020**.

Our hospital geared up on **March 14, 2020**, to battle the virus and take the **'bull by the horns'**. Read on, as the document explains the measures taken, with a view to treat and safeguard our own...

Heads up:

The Hospital team took cognisance of the emerging news and literature about the disease and the devastation it was creating. The team immediately started clinical meetings with all doctors on the **SARS-CoV-2 viral infection**. The meetings were held as early as **23 January 2020**. Briefing was on the spread, infection control measures and its treatment.

A **COVID Task Force** was created - this was a **multidisciplinary team with senior managerial staff, medical consultants, and infection control team**. The team met for the first time on **16 March 2020**, under the leadership of the **Chief Executive**.

Having evaluated the news from around the world of the risks the healthcare personnel faced the idea was clear. We save our **"warriors"** first. Since without them who would fight the virus. To reduce the learning curve, team first met on alternate days, later twice a week and finally now we meet once every week.

The mandate of this team was **multifold - policy making using the international, national and local guidelines or notifications, implementation of measures, staff training and trouble-shooting**. The latter helped in improving the processes by constant feedback mechanism to the leadership with immediate action there upon. Dr L H Hiranandani Hospital received its first COVID case, referred from the **Municipal Hospital ICU** on the night of **22 March 2020**.

Operations:

The creation of the task force helped **planning, utilization and monitoring of our resources**. As it was declared at the outset that the safety of the hospital staff would be the foremost concern, the entire staff was put on HCQ chemo-prophylaxis, based on evidence available at that point in time. The next was proper **use of masks** and then the **Personal Protective Equipment** *(PPE)*.

While hard to come by in the early days, all resources were mustered to ensure that the frontline 'warriors' were adequately equipped:

1. Infrastructure resources:

Separate traffic movement for COVID-related work was established. All those desirous of treatment at the hospital were directed to the **'Fever Clinic'**. This was a well-ventilated room, outside the hospital. A consultant doctor, resident doctor, nurse, lab technician and an administrative person were on a 12-hour watch. The importance of the consultant was there in triaging and shifting cases. All were provided protective gear. A holding station was created with 4 trolleys equipped with oxygen cylinders, pulse oximeters too. A red corridor was created. A lift was earmarked and also floors were dedicated for holding patients whose reports were awaited, positive patients accommodation and a dedicated critical care unit. The hospital converted to NO VISITOR status.

Staff and visitors entering the hospital premise were screened for their body temperature, at the entrance, using a non-touch thermal gun. Anyone who had a temperature was referred to the Fever Clinic for further assessment.

The hospital milieu interior was maintained at 25˚C except the critical areas such as ICU and operation theatres. Biomedical waste management was given priority especially those marked COVID-waste.

Use of disinfectants *(1% sodium hypochlorite solution)* was used to disinfect regularly used areas. Areas such as the fever clinic or the COVID wards were disinfected every two hours. The cleaning team were instructed to clean all high-touch surfaces such as door knobs, staircase railings, OPD counters/desks, elevators and floors every 2 hours. Hand sanitizers were kept at prominent points for use.

The reuse of N-95 masks policy was defined and implemented to maintain healthy stock at all time. Wearing of a mask in the hospital was compulsory for everyone. Visitors using mask with valves were asked to change the mask before entering the premise.

Separate areas with privacy and safety for donning and doffing of PPE's including provision for bathing for the staff on duty were provided for. Educative videos were created to help staff in the use of PPE's

2. Tactical Medical Teams:

Teams were created consisting of **doctors, nurses, physiotherapists, dietician, and housekeeping staff** to man the **COVID facilities**. The selected **healthcare personnel** would be divided into teams who would do duties for the designated shifts and would be replaced by another team with adequate off-duty breaks. The team members were given adequate rest in between their duties. The COVID-duty team members were housed off-site. **Doctors and nurses** were resided in 5-star hotels in the vicinity. The hospital also requisitioned fully furnished flats nearby for the rest of the crew which included travel and food.

Thus **two distinct teams** for **COVID duties and Non-COVID duties**. Each team segregated from the rest of staff. We started with one week on and one week off. This helped in resting the teams. Counselling was done on a regular basis on regular basis by psychiatrist to deal with their mind-play here. The dietary aspect of the staff especially while on duty had been provided for with **high protein diet** including **protein bars and fluids** to keep them **hydrated**.

3. Logistics, Monitoring and Process

The department coordinators were asked to monitor their staff that were not reporting to work due to illness or reporting to work but seemed unwell. These staff were not to be allowed on the floor but routed to meet the physician in the Fever Clinic for assessment. The staff that was suspected to be infected with COVID-19 were tested and asked to be quarantined till further review based on the laboratory test results. As most of these staff lacked home quarantine facility those affected were provided hospital stay *(isolation ward)*. A register, **HCP Self-Declaration Record**, was maintained in the medical care areas *(COVID wards and ICU)* for the staff monitoring to report if any of them have COVID-like symptoms so that they can be tended to at the earliest.

The standard operating procedure for the safety of the healthcare workers was established and captured under the title **"Management of Healthcare Personnel with Potential Exposure in a Healthcare Setting"**. This document addresses risk assessment, monitoring, and work restriction decisions for healthcare workers with potential exposure to COVID-19. Because of their often close contact with vulnerable individuals, a conservative approach to healthcare personnel monitoring and restriction from work was taken to quickly identify early symptoms and prevent transmission from potentially contagious worker to colleagues. **Healthcare Risk Assessment Protocol** was defined and implemented in the hospital. A sub-committee consisting of Medical Director, Pathologist, Microbiologist and Physician would assess the level for exposure of the healthcare worker and the risk as per assessment protocol.

4. Constant readiness:

Regular rounds were conducted by **Infection control team**. They constantly reviewed the processes and failure was brought to the notice of the **Task Force Committee**. Responsibility also entailed the hospital staff to prepare them for the task ahead and instilling measures to protect themselves.

Some of the **training sessions** held included:

- Hand hygiene – correct method of washing hands
- Respiratory etiquettes
- Use of PPEs and correct use of masks - use of audio-visual tools such as donning and doffing technique videos for staff use
- Protocols set by the task force including sample handling and handling of dead bodies
- Infection control measures to be implemented in care areas and ancillary areas
- Waste management protocols

5. Social distancing:

This was advertised throughout the hospital and in most **social media platforms**. Use of lifts was restricted to only five individuals at any given time. The **social distancing** by **staff** was reinforced especially in the usually crowded areas such as **OPD areas** and **cafeteria**. Posters and information boards and restricting the number of seats were effective. The sitting arrangement maintained **social distance** of **1 metre** at least. **Staff** gathering was **not permitted**. Meetings especially **clinical meets** and **interactions** were shifted to **online**.

We used technology to take care of our patients during this time including moving towards **digital technology** to benefit the community through **teleconsultation**.

6. Immunisation:

The Central Government along with the support of the local authorities have begun the **immunization** against **COVID-19** of the healthcare workers on priority. The hospital has participated whole-heartedly and supported this final fightback against the virus to protect the **'warriors'**. Most of our personnel have now been immunised.

The Outcome:

Casualties occur in every battle. We too had our **'warriors'** down in the hospital. They were **admitted, treated, and came back to re-join the battle.** The mission was to win the war and we are headed there. None of our fighters were left to wage this war alone; it was one for all and all for one. For the record, we have thus far, sent back home about **3000 positive cases** who recovered from **COVID-19** in our **care, arguably the highest number of COVID-19 cases** treated and discharged amongst the private hospitals in Mumbai. Our team assessed and treated over **10,000 patients** in our **Fever Clinic**.
The learnings out of **interacting and discussing** in the early days as a team helped our **process mature**.

The Accolades:

Felicitation and appreciation by the **Honourable Governor of Maharashtra, Shri Bhagat Singh Koshyari** towards the **COVID-19** efforts of the **Dr L H Hiranandani Hospital.**

The Accolades:

'AHPI Awards for Excellence in Healthcare 2020' in the Quality Beyond Accreditation Category.

'Iconic Leader in Healthcare Quality Award' given by the former Chief Minister of Maharashtra, Shri Devendra Fadnavis.

The Accolades:

Business Leader of the Year

Category - INNOVATION IN QUALITY OF SERVICE DELIVERY AWARD 2021

Dr L H Hiranandani Hospital

Dr Shalini Suralkar
Consultant Physician

Prepared and fought
the Virus

The year '2020' exposed us to challenges never seen before. The pandemic unearthed the fears, anxieties and strengths of the society and the medical fraternity as a whole.

When we heard about the novel coronavirus and had our first task force meeting, it felt like many such similar meetings we had for earlier outbreaks like MERS, SARS and Ebola where the discussions were only limited to the board room and never did we actually ever have to deal with it. But this was something different. For the first time the world was forced to a standstill. This was a new virus and none of us really knew anything about it. This coronavirus was a novel virus, named SARS-CoV-2, with diverse effects on the body systems which was rarely seen with any other virus.

With these uncertainties and fears, we set out to fight against this pandemic taking the toll of our nation, our city. However, there were multitude of challenges that we had to deal with. These included:

- **Isolation and quarantine** - We created separate wards with a separate entry and exit point. These areas needed to be differently prepared with regards to waste disposal, ventilation and catering
- **Use of PPE kits** - Training regarding appropriate use, donning and doffing and their subsequent disposal. It was a challenge to stay and work in these kits in non-air-conditioned wards for long periods.
- **Fear of unknown** - Mental challenges such as reluctance to work, motivation, fears, education and training, reassurance. These needed to be dealt with and we used the services of our psychiatrists to mentally prepare our staff
- **No definitive line of treatment** was available and the clinical guidelines were revised very frequently by the authorities
- **Unknown disease course**

> *"This was something different. For the first time the world was forced to a standstill. This coronavirus was a novel virus, with diverse effects on the body systems that had been rarely seen before with any other virus... 'Self-Learning' was the key.*

'Self-Learning' was the key. Our hospital task force met daily initially. **Frontline COVID warrior** teams were formed. **Training of health-care personnel** including **doctors, nurses, housekeeping staff and security staff**.

Treatment protocols were revised periodically and upgraded. The **COVID ward protocol booklet** came into being and was used in the ward for the indoor management of patients which made life of doctors and nurses easier.

Our hospital staff along with their families who were infected were taken care of. Even during the peak when bed availability was an issue our staff was never denied a bed.

This helped allay fear to certain extent. **Everyone received chemo-prophylaxis, Hydroxychloroquine**. We did have our share of employees who were infected but fortunately everyone had a mild disease thanks to the prophylaxis. Teams working in COVID wards were provided high protein food, accommodation in 5-star Hotels nearby and transport facility by the hospital. All were given adequate breaks between duties.

During the peak the numbers were overwhelming and we had to additional facilities and a floor. The workload doubled. Back up team of doctors were recruited. All of us gave our best and contributed in whatever way we could.

Our wards were upgraded to **mini-ICU**. Only the sickest patients with multiorgan involvement and requiring **NIV or invasive ventilation** were kept in the **ICU.** Patients were managed in the ward with **oxygen requirement as high as 60 liters** with help of **HFNC**. **Plasmatherapy and tocilizumab** were given in the ward. We had some good outcomes from the ward.

We were the only team in the city of Mumbai who provided personalized care to COVID patients when other teams elsewhere were shying away from **attending to patients in person and were treating patient remotely**. We developed a protocol to give feedback to every patient's relative regarding the current status of patient and spoke to almost all the relatives on a daily basis.

Not only were the medical needs of the patients met but also their psychological, social and nutritional needs, with the help of our ancillary staff.

Lot of changes on how we work were made to meet the COVID protocols. Isolation and sanitization goals were kept in mind and new ways were devised to achieve this. Process flowed without much glitch once the initial training and acceptance was achieved. In fact, healthcare personnel became more comfortable working in the COVID than in the non-COVID wards.

This way we could upgrade ourselves with the increasing load, we achieved the de-escalation of our processes and facilities the same way when the patient numbers reduced and the transition was smooth.

Finally, it was team spirit and resilience in the face of very tough challenges and our faith and motivation to serve the community which helped us tide over this crisis.

Dr Neeraj Tulara
Consultant Physician

Fever Clinic -

An unique OP services of its kind

The year **'2020'** had just begun. Everyone was happy, exchanging new year's greetings and taking some or other new year's resolution without having a clue of what was happening in our neighbourhood and what we were going to face. Yes, no one knew that we are going to face a **global pandemic very soon and every one of us were to be hit badly**.

On **21st January 2020, WHO** declared that a new strain of corona virus was creating **havoc** in **Wuhan town of China** and alerted everyone due to the highly contagious nature of this virus. Very soon lots of advisories came from across the globe regarding the prevention and containment of this virus.

Our hospital was swift in taking **preventive measures** under guidance of its leadership. The **CEO** took the lead in alerting everyone as soon as the news broke on the **21st January 2020**. We had our **clinical meeting** just **2 days** later on **23rd January 2020**, to create **awareness to everyone in the hospital about this virus**. We constituted a task force for the same to prepare ourselves.

We continued with the **awareness programmes and educational talks** in the community including schools and corporate offices.

As the cases started to rise, our task force team met daily to discuss how we will handle the situation. Declaration forms were made and every patient coming to **OPDs and A&E were screened to detect high risk patients**.

The team had to deal with the question on where to see such patients when they come to the hospital for help. As the infection was highly contagious, we had to also protect our staff, other patients and facilities. Thus a different traffic movement needed to be created by bypassing the usual hospital flow. We resolved this dilemma by starting a separate **Fever** *(COVID)* **Clinic** on the **23rd March 2020**. Since the cross-infection was to be prevented, we located this clinic outside the hospital near the **A&E Department**. There were issues with this room such as the space was very noisy, not well-ventilated nor lit, but these matters were taken care of very quickly.

> *"As the infection was highly contagious, we had to also protect our staff, other patients and facilities... The Fever Clinic was the only clinic of its kind in the city of Mumbai, running outside the hospital, with an entire triage process which never crossed the non-COVID areas of the hospital.*

Initially it was decided to have the **clinic run for 8 hours daily**, manned by **hospital physicians, which was later extended to 12 hours, from 8 am to 8 pm**, as the patient footfalls were increasing.

The entry through the main gate were restricted. All visitors including staff and patients were **screened with hand-held thermometer** at the **Security**. Those with high temperature or having any of the influenza-like **symptoms were routed directly to the fever clinic**. This was followed strictly to protect the rest in the hospital.

As summer was approaching, it became difficult to work in these **make-shift clinic in full PPE gear**. **The management acted upon immediately to help the clinic work**:

- Constructing new shade to cool off
- Installing a powerful air-cooler
- Starting the appointment system at the fever clinic
- Identification of the donning areas and doffing areas near the fever clinic
- Installation of showers in the washroom outside the A&E
- Regular disinfection of the clinic premise
- Dietary needs of the staff involved in the COVID clinic duty

New laboratory sample collection facility was started in close proximity to the clinic. A new billing counter were introduced near the **fever clinic**. A portable **X-ray unit** was stationed nearby for immediate imaging of suspected cases. Separate lifts were assigned to transport COVID patients to the wards from fever clinic directly. The corridor was cleared for the transport of such patients and the area and lifts disinfected immediately thereafter. All the efforts were made so that fever clinic runs smoothly and at the same time there was no compromise with safety of the existing non-COVID patients in the hospital.

The clinic received patients who were severely hypoxic who required immediate care including **oxygen and immediate medicines** to control the symptoms. It was decided to start a transient care ward with **4 oxygen beds** in front of fever clinic with all emergency equipments available, manned by **A&E doctors and nurses**. **As COVID-beds were in shortage in the city at this point and waiting for ward or ICU beds would take many hours, this initiative by our hospital helped save many lives**.

To help manage the increasing rush of patients to the clinic, the hospital mangers were put on duty to smoothen the process, manage any kind of chaos and to communicate with all the patients and direct them accordingly.

Our fever clinic was unique in many ways. It was the only one clinic of its kind in the city of Mumbai which was running from outside the hospital, with entire triage process which never crossed the non-COVID areas, a **24-hour functional clinic**, always manned by doctors and other **supportive staff, and all relevant tests and emergency treatment completed while waiting for their bed availability**.

We have seen arguably the largest number of the patients in a private set-up in the city of Mumbai. Till date we have managed more than **10,000 patients** in **our fever clinic**. Of course the path to reach here was not easy as illustrated above but it was all team effort that we managed the entire pandemic well. Not a single patient was denied treatment in our facility and we tried accommodating all who needed medical care in this tough time.

COVID was a tsunami, hit many badly, but the team fought with the right attitude and immense energy and leadership and have come close to defeating the virus.

Jai Hind!

Dr Arpita Dwivedy
Consultant Intensivist

The Ray of Hope and Well-being through the

COVID times

When the turmoil started and the initial reports of the pandemic taking its roots in Wuhan reached India, it was still some newspaper articles, social media reports and coffee table chats. I was already bombarded with questions on whether India would get affected the way China and West were beginning to experience. And then in **February 2020** it had reached Dubai in a fairly **large manner and beginning to knock on the doors of India** *(mainly Kerala and Mumbai, if I may add)*.

I had some experience with **H1N1 cases** in the **ICU** in **2009** and that had somehow instilled some confidence in me and our ability to handle any new situation. However if that was a **'flood'**, this was **'tsunami'** hitting us.

The virus being totally new, the availability of literature on the same was practically nil. Hurriedly published articles with a month's data and studies conducted with different protocols for few patients and very short periods were not only confusing but did not add much value. Also as I mentioned in an early media interview, the ever changing **global protocols were not helping in any way**. The so called **'COVID-19' medicines** were short on the shelf as manufacturers hurried to get them into their supply chain.

The hospital management was very supportive right from the word go. The active participation in the management and treatment of the disease for the public at large was voluntary, even as we were putting together thoughts and strategies. The weekly interactions became daily planning meetings led by the **CEO** wherein **every support service in the hospital had to be manned despite the fear factor and non-availability of skilled manpower due to the national and state lockdowns**. The **management, the emergency services and the critical care units had to be fearless and selfless**. The reports of deaths of doctors and paramedics on account of COVID-19 infections were becoming media highlights!

"The hospital management was very supportive right from the word go. The active participation in the management and treatment of the disease for the public at large was voluntary, even as we were putting together thoughts and strategies.

And then the patients started pouring in from all strata of society. This was not a poor man's disease and did not spare any social group. There were **fresh cases through OPD, there were cases referred by nursing homes and doctors and then cases where patients had been home for long without truly understanding the repercussions** of what the disease was doing to their **lungs and oxygen saturation**. The anxious relatives who had to in turn protect themselves were to be kept away from wards, laboratories and hospital beds for their own good. **Long video calls followed to explain individual cases to them and the prognosis**.

Weekly online **clinical meetings** were also useful in our interactions among doctors, functions and team of senior paramedics. Layout-changes for segregation took place and new wash areas for shower and gowning took us to the world of **Personnel Protection Equipment** *(PPEs)*. For all of us who even wear masks we know how tough it becomes to breathe, speak and work. With full gowning that included **hazmat suits, gloves, hoods, masks, and goggles** the staff had to be extensively trained in donning and doffing the PPE. Being in the PPE and unable to even quickly identify each other was another experience. Extensive hours in the suits makes one physically and mentally exhausted. Kudos to all the motivated personnel who worked with a positive mindset to make a difference to the lives of hundreds of patients.

With the availability of certain drugs and new protocols the management of the disease became relatively easier. Outcomes and recovery periods started improving and we could sit back and wonder about one of the toughest periods of our lives as medical professionals.

While thanking each member of the critical care team, I would like to extend the **appreciation to the hospital leadership, colleagues, nurses, front desks, PROs, blood bank** *(for all the convalescent plasma)*, **laboratory, dietary department and support services** for their whole hearted support and engagement towards patient care and treatment. A special word of thanks to the **Department** of **Anaesthesiology**, that lent their residents and managed the **non-COVID ICUs**, so that we could put all our energy on the **COVID-19 pandemic**.

Dr Vimal Pahuja
Consultant Physician

Tackling COVID-19

with Co-morbidities

COVID-19 with co-morbidities is risk multiplied by 10...

COVID-19 pandemic times have been **challenging for everyone, especially the medical fraternity**. In early phase of the pandemic, when we were trying to understand the virus and its bearings on the human body, the death rate was to the tune of **8-10% and even more in elderly, complicated with co-morbidities** like **diabetes mellitus, hypertension, heart disease, obesity, and chronic lung disease.** It was very mentally draining to see the patients slipping away from the hand in the spur of minutes to hours and going on ventilator and dying due to **'cytokine storm' and secondary infections**.

However, there were many bright spots in the dark and gloomy days of sickness and death. There were survivors who fought all odds and made it to see the other side of sickness and death. For an elderly to survive, with all co-morbidities and to attain the reasonable level of functioning despite being on oxygen support for months was always exhilarating and satisfying.

Our approach to people with complications was always aggressive with close monitoring, and when most drugs were available at our disposal we used them in timely fashion to halt the viral multiplication. **Drugs like Remdesivir, steroids and convalescent plasma therapy were deployed early in the management, to block the viral from replication and inhibit the stimulation of the immune system in an unbalanced manner, which was the cause of deadly situation called 'cytotoxic storm'.** The idea was to catch them early in the phase of **'happy hypoxia'** in which oxygen levels though are low but patients don't seem to have any complaints like **shortness of breath, chest tightness, and pai**n.

> *"For an elderly patient to survive, with all co-morbidities and to attain the reasonable level of functioning despite being on oxygen support for months, was always exhilarating and satisfying.*

A. On the isolation floor...

We would initially screen all patients for diabetes, irrespective of their past history, take a detailed record of their medications. The COVID-19 ward protocol designed by the team ensured that all details are duly captured.
The relatives were counselled, that elderly persons with complications generally have complicated and longer course, and that they would need close supervision.

01. Monitoring

Close monitoring of individuals with complications viz, vital parameters, blood tests like CRP, Pro-calcitonin, D-dimer and other tests which could detect immune response, inflammation damage to the lungs, thickening of the blood and chances of secondary infections were done. Also, their previous medications which would interfere with current treatment were stopped and neutral medicines were started. Most often we had to optimize the prior illness alongside with the treatment of pneumonia.

2. Blood sugar management

Most patients were diabetic had poor blood glucose control and were vulnerable for torrid course. There were patients who had never known that they had diabetes and refused to believe so on breaking the investigation reports to them. In some, COVID-19 had induced hyperglycemia on its own accord. Typically, people who had central/abdominal obesity were prone to having hyperglycemia. Treating such patients with steroids which is the mainstay in treatment of COVID-19 was a tough task as their sugars often would go off the roof.

We had protocols and policies in place to counter these medical issues, possibly one of the few hospitals in the city to have such protocols in place to manage blood sugars. A good blood sugar control is one of the corner stone of better outcomes in patients with complications and COVID-19.

3. Blood pressure management

Hypertension was the commonest co-morbidity seen in patients getting admitted in the COVID ward. An unique thing in this epidemic we saw was drop in blood pressure so much so that we had to stop the blood pressure medications. COVID-19 causes nervous dysfunction, which tends to drop the blood pressure and rapidly increase the heart rate. These issues were promptly identified and treated.

4. Heart issues management

Heart issues like myocarditis *(heart inflammation)* and heart failure *(accumulation of water in the lungs due to heart problems)* were common during the acute stressful situation of COVID pneumonia. With the help of our cardiologist these were aptly managed. Heart disease like prior ischemic heart disease was a common co-morbidity. The uncommon situation was patient presenting with heart attack, precipitated by COVID-19 infection in young patients, or getting heart attacks after recovering from COVID-19. The management of heart disease in COVID-19 had different approach. Primary angioplasty was deferred and patients were thrombolysed *(clots dissolved with medications)* because of risk of spreading the virus and risk to the patients of increasing complications. Once they recovered they underwent angioplasty which was the definitive treatment.

5. Lung disease

Lung was the most commonly involved organ in COVID-19 infections. Our team gave optimum and appropriate care to stabilize the lung condition. Some patients were also given auto-CPAP machines or BIPAP machines to maintain positive pressure in the airways and help the oxygenation.

6. Chronic kidney disease

Chronic kidney disease and acute on chronic kidney disease were very commonly encountered in the patients in the isolation ward. This posed two great challenges in management:

a. Some drugs which are given for treatment of COVID-19 were contraindicated with high creatinine, and dose adjustment was required for many other medications.

b. Such patients were more prone to severe COVID-19 lung involvement.

B. Use of medications -

Medication use in patients with co-morbidities was done in timely and sensible manner, looking at their complete profile and anticipating the possible complication / adverse effects.

01. Convalescent plasma

Convalescent plasma therapy in our experience was lifesaving in early phase and when the oxygen requirement was just beginning to increase and the steroid effect wouldn't come in 24 hours, we would use plasma treatment to help reduce the oxygen requirement.

One or two cycles of plasma would ensure, in most patients, if used early, quick recovery and reduction in oxygen requirement.

2. Tocilizumab

When Remdesivir wasn't available to us, in the early phase of pandemic, tocilizumab along with steroids was used to save lives, especially in people who had co-morbidities. Later with availability of Remdesivir and Plasma therapy, use of tocilizumab was restricted to severe cases or who did not respond to the cocktail of Remdesivir, plasma and steroids.

C. Physiotherapy and Rehabilitation

In patients who had co-morbidities, and those requiring oxygen, because of COVID induced **lung fibrosis, physiotherapy helped them to get off oxygen**.

Rehabilitation is an important aspect which we stressed upon in all moderate to severe COVID patients to expedite the recovery process.

Survivor story which is worth narrating -

Mr SA, a 74-year old male, diabetic, hypertensive and with thyroid problems, was admitted in the isolation ward, with history of fever and a HRCT scan revealing COVID-19 infection. His sugars were uncontrolled on admission and was given insulin therapy along with standard treatment. He appeared to be doing better and did not show any signs of deterioration. However, his wife who was also admitted with the same infection, had mild infection and required oxygen for few days but recovered within a week's time. It was time to discharge them, but on the day of discharge, his oxygen levels dropped on walking. In his case oxygen level dropped very late in the course of the disease and this is one of the features seen in people who are elderly and with compromised immune system like diabetes, chronic kidney disease, it was his 12th day of illness. He was given steroids and plasma therapy, which reduced the oxygen requirement to a great extent, and we were hoping that he can be discharged soon. Again, his oxygen levels dropped. The feeling of loneliness after his wife left the hospital made him restless. It was very difficult, to convince him to stay back and to get proper treatment. After much deliberation he was willing to stay. We had to start high dose steroids, and we also gave plasma therapy.

His oxygen requirement remained high so he was given tocilizumab. His oxygen requirement remained high, he was weak and was mentally breaking now as his stay had been prolonged for more than 14 days. He was treated with antibiotics and supportive treatment, as his lungs by this time had developed fibrosis *(lung shrinkage)*. He was shifted out to the normal floors after 20 days of stay in the COVID ward and rehabilitated by our team of physiotherapists.

He was discharged home with oxygen requirement of 2-3 liters. His sugar and blood pressure were kept under control. He had urinary tract infection twice which were treated with intravenous antibiotics at home itself. He was ably supported by his family, and in the course of 3 months, he could be weaned off oxygen. Now he is able to walk independently and go for small walks. It was exhilarating and satisfying to see that despite age and other co-morbidities, with timely and proper intervention, support and rehabilitation, Mr SA was able to lead a reasonably normal life, free from crutches of COVID-19 which had played havoc for past 3 months. At his last visit, he came walking into my OPD and was happy that he could defeat COVID-19 and lead an independent life.

Epilogue

COVID-19 and co-morbidities like **diabetes, hypertension, obesity, chronic kidney disease, chronic lung disease, spell out poor prognosis and torrid course, delayed recovery and mortality**. However, **monitoring with anticipation, timely intervention, protocolized management, rehabilitation and support from family and healthcare personnel,** can mitigate the risk and enhance chances of complete recovery for all such patients with this infection, which has created havoc world over specially for this vulnerable group.

The most important aspect is the patient's willingness and mental strength along with resolve of the doctors to help patients pull out from the catastrophic clutches of COVID-19.

Dr Sajit Babu
Consultant Pulmonologist

Lung
was the Target of the Virus

December 2019, the world was cruising in its own fast pace, going to usher in the third decade of the 21st century without any inkling of what catastrophe awaits in months to come. That will dramatically change the way we live now onwards.

The coronavirus of 2019 appeared in Wuhan, a non-descript place in China. We had information regarding coronavirus due to the prior infections by SARS coronavirus *(2002-2004)* and MERS *(2012)* causing adult respiratory distress syndrome *(ARDS)*. No Antivirals were successful and there was no vaccine to manage these infections. But these two viral outbreaks were very limited in duration and their infectivity. Initial thoughts were, that this viral outbreak would be more or less on similar lines. But it surprised all of us by its severity and virulence, and in less than two months' time it became a pandemic and WHO gave it a new name 'COVID-19'.

The virus that causes COVID-19 infection is designated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2); previously, it was referred to as 2019-nCoV. From China, soon it spread across the globe to Europe, America & Middle east and soon best of the healthcare systems of the developed world crumbled under its might. It was imminent that this was not going to spare us in India. Given our fragile healthcare sector, a big catastrophe awaited us. The Government acted swiftly and the whole country got in a total lockdown *(this term was heard for the first time)*. We were getting the status updates from our peers in the Pulmonary and Critical Care Departments in UK, especially from London, and USA. They were actively sharing, via many webinars, about the management of the patients in ward and critical care units, discussing clinical presentations and investigations including radiological imaging. Initially only **Chest X ray images were shared and discussed as CT chest investigation** was done very rarely.

During the initial days in the West, the standard protocol was to use invasive ventilation very early, for patients who were hypoxic, this resulted in the loss of many lives. Later these protocols were modified and the increased the use of supplemented oxygen through the **use of nasal prongs, NRBMs and HFNC.**

> *At Dr L H Hiranandani Hospital, we used the Chest HRCT scan regularly and this turned out to be a game changer as we could identify typical COVID pneumonia features very early, before the Chest X-ray could pick it up. This helped to triage the patients with lung infections.*

We were getting valuable lessons from them and getting ready. Medical task force teams were created. These teams helped make protocols on the basis of the latest guidelines from the WHO, ICMR and the clinical updates that we were getting from the various interactions across the globe.

Majority of the patients of COVID-19 were asymptomatic or were having very mild symptoms. They could be managed at home with close monitoring. The common **symptoms were fever, cough, myalgia, and headache**; other **symptoms such as diarrhoea, sore throat and smell and taste abnormalities** were also present in some.

The lung was the primary target organ of the virus resulting in the loss of many lives. The lung infections causing atypical pneumonia, called as COVID pneumonitis, is the hallmark of the disease. The spectrum of symptomatic infection ranged from mild to critical with most infections being not severe.

- Mild disease *(no or mild pneumonia)* were in majority of the infected in population.
- Severe disease *(e.g., with dyspnoea, hypoxia, or >50 percent lung involvement on imaging within 24 to 48 hours)* in approximately 10-15%.
- Critical disease *(e.g., with respiratory failure, shock, or multiorgan dysfunction)* in around 5%.

Some patients who were initially with non-severe complaints progressed over the course of next 4-5 days with complaints of increasing cough and dyspnoea. The hallmark sign describing **'Silent Hypoxia' or 'Happy Hypoxia'** were coined to describe patients having low SpO2 but by and large are asymptomatic. Around 20% of these patients who progressed needed oxygen, and ventilation. By using the lessons from Europe and USA, we knew that intubating and ventilating the patient would not help much but that the supplementation of oxygen was the key. Thus we relied more on oxygen supplementation by nasal prongs/oxygen mask and NRBM *(non-rebreathing masks)* and keeping patients in prone position.

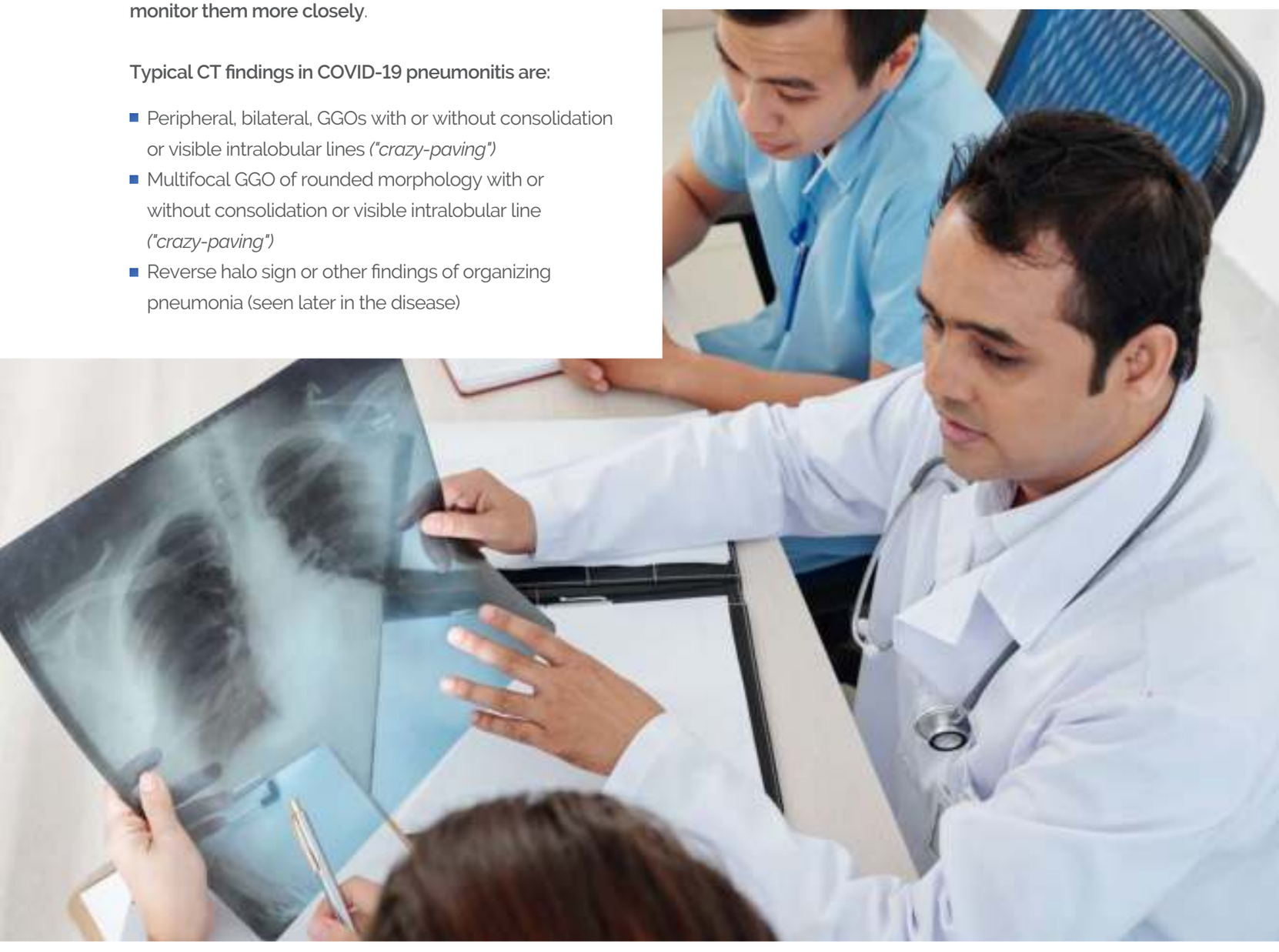
We, at **Dr L H Hiranandani Hospital**, equipped our **COVID wards** with the **HFNC**. And thus, we could manage patients in the ward without shifting them to **ICU** and hence avoided **NIV and invasive ventilation** to a great extent. Amongst the patients who had to be put on invasive ventilation, early tracheotomy helped to wean them off the ventilator.

We used the **Chest HRCT scan** regularly and this turned out to be a game changer as we could identify typical **COVID pneumonia** features very early, before the **X-ray Chest** could pick it up. This helped to triage the patients with **lung infections and administer treatment and to monitor them more closely**.

Typical CT findings in COVID-19 pneumonitis are:

- Peripheral, bilateral, GGOs with or without consolidation or visible intralobular lines *("crazy-paving")*
- Multifocal GGO of rounded morphology with or without consolidation or visible intralobular line *("crazy-paving")*
- Reverse halo sign or other findings of organizing pneumonia (seen later in the disease)

Medical management evolved as we progressed through the pandemic. This was reflected by the frequent changes in the clinical **guidelines released by the ICMR and the local task forces**. Many antivirals were used starting with the **combination of Hydroxychloroquine** *(HCQ)* – **Azithromycin. Later combinations of Lopinavir – Ritonavir to Doxycycline – Ivermectin** were **tried**. Finally we had **Remdesivir**. Unlike other viral infections, systematic manifestations were very prominent like a vasculitis or an autoimmune disease and the **role of steroids** *(which was the mainstay of the treatment)* and later on we were using **Tocilizumab** to help deal with **serious cases.**



- **Steroids** definitely worked especially in the hypoxic patients. Remdesivir worked when used early in the disease.
- **Tocilizumab** helped in late cytokine phase Heparin helped in preventing thrombosis such as deep vein thrombosis and pulmonary embolism.
- Giving **convalescent plasma** from a COVID-19 survivor early in the disease helped, especially in the elderly and immunosuppressed groups.
- **Oxygenation helped** – supplementation of oxygen, preferably using nasal prongs, mask and NRBM.
- **Proning position** helped in improving patients with hypoxia.
- **HFNC** helped where normal supplementation of oxygen did not maintain the oxygen levels and if it failed then such patients were started on ventilation.
- In patients who were **intubated and ventilated**, an early tracheostomy helped.
- **Positive frame of mind helped to heal faster** - this was a very lonely disease and these patients were isolated and thus cut off from their families for atleast 14 days.

Even though the pandemic brought a lot of negativity and despair, there were few positives amidst eternal hope of humanity. We were faced with a new and very unpredictable virus and within a year the whole world unitedly fought against it and we, In India, seem to have brought the pandemic under near-control.

Dr Maheema A Bhaskar
Consultant Pulmonologist

The COVID Aftermath...

> The woods are lovely dark and deep,
> But I have promises to keep,
> And miles to go before I sleep,
> And miles to go before I sleep.
>
> *- Robert Frost*

A call from my colleague to write this article shook me out of my reverie to reminisce the **onset of havoc unleashed by a sub-microscopic organism** in the world. Little did we now then that the tryst with this bug will become a defining moment in medical science. Life as we know it now, for the human race will always be defined in **COVID era terms - pre-COVID and post-COVID**. Whilst some are still in the eye of the storm, few are slowly staggering back to the altered normalcy.

As a pulmonologist, 2020 started with the fear of the unknown known to known unknown at the front line. As time progressed, and knowledge advanced, we were able to beat the enemy at its game. At, the outset, the whole focus was on saving lives due to acute illness, time has however shown us that COVID is a **multi-faceted disease with long-term consequences, and the road to recovery is not without challenges**.

> *As time progressed, and knowledge advanced, we were able to beat the enemy at its game. At the outset, the whole focus was on saving lives due to acute illness, time has however shown us that COVID is a multi-faceted disease with long-term consequences, and the road to recovery is not without challenges.*

My first interaction with Mr SR was in the COVID ward. He had been transferred from the COVID-ICU after a stormy course battling severe lung injury. He required 3 litres of oxygen to maintain saturation levels above 90% with more than 50% of his lung showing damage. A good 10 kgs lighter and a shade of the man he was, he also developed spontaneous pneumothorax *(leak in the lung)* that was managed successfully with conservative treatment. The lack of strength, palpitations, and inability to conduct daily activities with breathlessness also took a mental toll on him. Quite eager to go home as he considered his worst was over, we shifted him to a regular ward so that his spouse could also fathom the level of care be would subsequently require. The understanding of him and his spouse was that he would be on his feet within a couple of weeks. It eventually dawned on them that **"Picture abhi baaki hai dost"**.

Involving the family in the post-COVID care and understanding the limited abilities of Mr SR went a long way in recovery. Starting supervised pulmonary and muscle rehabilitation at the hospital and setting up the same at home was one of the many challenges to ensue. First issue was setting up a 24-hours oxygen supplementation at home. This was the easy part. The main challenge was taking him home as he stayed in the 2nd floor of a building, that lacked an elevator, as is the norm with many old buildings in Mumbai. This also meant that the hospital follow-up visit would be difficult and hence all the post-COVID monitoring had to be set up at home with regular online consultation. Physical rehabilitation was also monitored online and gradually the intensity of exercises was increased with attention to muscle mass strengthening and nutrition and medications. Three months later Mr SR sprinted down two flights of stairs and met me, eight kgs heavier and showed off his previously non-existing and now very enviable biceps. *(Alas, 10 month of lack of exercise had taken its toll on mine!)* With some residual fibrosis in his lung, a changed man, a 'post-COVID survivor' - a definition of the new normal, he has put his past to rest.

Mr AC, though he had a mild respiratory illness persisted to have repeated bouts of chest pain after discharge that made him consult many a physicians in his neighbourhood. This was followed by plethora of investigations. Lack of awareness in the community about post-COVID syndrome and its myriad manifestations led to undue expenses and unnecessary testing. Unlike other acute illness, recovery after COVID-19 is slow and mired for some with multiple issues, ranging from cardio-pulmonary to insomnias, fatigue, brain fog, joint and muscle pain, etc termed as 'long-COVID' when lasting more than 12 weeks. We also saw the **'survivor guilt'** in those who lost their beloved ones having entered the hospital together.

When it comes to COVID-19, while all patients may have weathered the same storm, they are all sailing in different boats. To address these issues an integrated post-COVID clinic was initiated at our hospital consisting of **pulmonologist, physician, physiotherapist and dietitian**. This multidisciplinary approach enabled the patient to address all their medical and mental issues in a single setting. A liaison doctor to co-ordinate the clinic, accessible to the patients at all times was highly appreciated by the patients. Having seen more than 150 patients at the post-COVID clinic and the various manifestations has been an enriching experience for all of us. The post-COVID clinic has also presented to us the opportunity to highlight the risk factors of sarcopenic, centrally obese patients - an underlying common feature of patients admitted with lung injury. Early reference to the specialized metabolic clinic, preventive vaccination, lung function assessment are some of the measures done in the post-COVID clinic besides tracking through the recovery of the patients.

While it is rewarding to see the improvement made by our patients, it is also wonderful to put a face at the other end of the phone call made to a relative in COVID ward. A septuagenarian remarked on his follow-up **"I recognized you from your eyes, doctor!"** made me reflect on the fact that it is the only feature of our **masked** and **PPE-clothed bodies** that our patients could actually see in all their days of stay. *(It also reinforces my choice in bright shades of eyeliners!)*

They say adversity brings out the best an individual has to offer. I consider myself fortunate enough to work with **amazing colleagues, nursing and paramedical staff and other non-medical co-workers and front-line staff** who put their **best foot forward when it mattered the most..**

To all my **co-warriors** in this **COVID-19 battle** it has been a great experience standing shoulder-to-shoulder with all of them. While the **world vacillates to vaccinate, the war rages on**.

To quote an epidemiologist, Marc Lipsitch, "With COVID-19 we've made it to the life raft. Dry land is far away."

Dr Swapnil Mehta
Consultant Pulmonologist

COVID Vaccine:

An End to the Pandemic

COVID pandemic has changed the world and the way we live. The confidence of a human being is shattered due to the uncertainty and the threat of COVID19 infection's unpredictable severity and mortality. Despite preventive strategies, COVID is indeed not receding and there is waxing and waning in different parts of the world. The only hope of COVID control is a safe and effective vaccine to attain herd immunity. The scientist community was quick to respond and several groups started working. Currently, more than 100 candidate vaccines are in various stages of development.

Various type of vaccines:

- DNA vaccine *(Inovio)*
- RNA vaccine *(Moderna, Pfizer)*
- Viral vector *(Covishield, Sputnik-V)*
- Viral subunit *(Novavax)*
- Live attenuated *(Codagenix)*
- Inactivated vaccine *(Covaxin, Sinovac, Sinopharm)*
- Virus-like particles
- Split virus vaccines
- RNP vaccine

> *With vaccination, we are expecting personal protection and `herd immunity', wherein 60 to 70% of the population becomes immune to infection. As of today, it is estimated that only 10% of the world's population is immune to COVID infection.*

The vaccines for COVID-19 have proven that in human trials they induce good immune response to the tune of 60 to 90% *(Covaxin 60%, Oxford/Covishield 70% and Pfizer 90%)*. Majority of the well-controlled studies have documented antibody production by vaccine which may last for at least 6 months, leading to prevention of infection both in young as well as elderly and those with co-morbidities. Trial results have been very encouraging. One of the important outcomes in one of the Moderna vaccine trial was that all the severe cases were in placebo group denoting that vaccine significantly reduces severity of disease if at all it occurs. Although there is evidence that the protection starts as early as 10 days after the first injection, we should consider protection to have only occured 42 days after the first injection.

All these vaccines have specific requirement of storage and transport.

With vaccination we are expecting personal protection and **`herd immunity'** *(where 60-70% population become immune to infection)*. As of today it is estimated that only 10% world population is immune to COVID infection. World experts and planners agree that it will take years to achieve immunization of the whole world population. Also there are some unanswered questions which include duration of immunity *(such as flu vaccine is given annually)* and actual protection *(technically called `effectiveness')* which will only be known by longitudinal studies over the period of years.

In India, we have approval for **Covaxin and Covishield vaccine**. There is an organized plan to vaccinate population with set priorities starting healthcare workers, frontline workers, elderly *(age over 50 years)*, those with co-morbidities etc. It is going to be a huge task spread over a period of several months.

Following tables present comparative fact sheet for currently available Indian vaccines:

Sr No	Indicator	Covishield	Covaxin
1	Type of vaccine	Recombinant COVID-19 vaccine based on viral vector technology	Whole-virion inactivated coronavirus vaccine
2	No. of doses in each vial	10	20
3	Shelf-life	6 months	6 months
4	Expiry date available on the vial	Yes	Yes
5	Route	Intra-Muscular *(IM)* Injectable	Intra-Muscular *(IM)* Injectable
6	Dose	0.5 ml each dose	0.5 ml each dose
7	Course	2 doses	2 doses
8	Schedule	4 weeks apart	4 weeks apart
9	Physical Appearance of Vaccine	Clear to slightly opaque, colourless to slightly brown	Whitish Translucent

When not to have the vaccine:

Sr No	Indicator	Covishield	Covaxin
1	During pregnancy	Not recommended	Not recommended
2	Less than 18 years of age	Not recommended	Not recommended
3	Lactating mothers	Not recommended	Not recommended

Storage & Transportation requirements:

Sr No	Indicator	Covishield	Covaxin
1	Storage & Transportation	+2.0˚C to +8.0˚C at all levels	+2.0˚C to +8.0˚C at all levels
2	Cold-chain storage space in secondary packing	2.109 cm cube	1.7187 cm cube
3	Shake Test	Not applicable	Not applicable
4	Open Vial Policy	Not applicable	Not applicable
5	Freeze Sensitive	Yes	Yes
6	Discard the vial if	Solution is discoloured or visible particles are observed	Particle matters are seen or discolouration observed

What about likely reactions after the administration of the vaccine?

Sr No	Indicator	Covishield	Covaxin
1	AEFIs	Injection site tenderness, injection site pain, headache, fatigue, myalgia, malaise, pyrexia, chills, arthralgia, nausea	Some mild AEFIs may occur like injection site pain, headache, fatigue, fever, body ache, abdominal pain, nausea and vomiting, dizziness-giddiness, tremors, sweating, cold-cough, injection site swelling.
2	AEFIs *(other)*	Very rare events of demyelinating disorders have been reported following vaccination with this vaccine without the casual relationship establishment.	
3	Any other Instruction	Paracetamol may be used to provide symptomatic relief from post-vaccination adverse reactions.	Shake well before use. The usage of chloroquine and corticosteroids may impair antibody response.

*AEFI – Adverse events following immunization

As vaccine-preventable infectious diseases continue to decline, people have become increasingly concerned about the risks associated with vaccines. Furthermore, technological advances and continuously increased knowledge about vaccines have led to investigations focused on the safety of existing vaccines, which have sometimes created a climate of concern.

Adverse event following immunization is an untoward medical occurrence which follows immunization and does not necessarily have a causal relationship with the usage of the vaccine. If not rapidly and effectively dealt with, can undermine confidence in a vaccine and ultimately have dramatic consequences for immunization coverage and disease incidence.

Alternatively, vaccine-associated adverse events may affect healthy individuals and should be promptly identified to allow additional research and appropriate action to take place. In order to respond promptly, efficiently, and with scientific rigour to vaccine safety issues, **WHO has established a 'Global Advisory Committee on Vaccine Safety'**.

Key points:

1. There is no such thing as a **"perfect" vaccine** which protects everyone who receives it AND is entirely safe for everyone.
2. **Effective vaccines** *(i.e. vaccines inducing protective immunity)* may produce some undesirable side effects which are mostly mild and clear up quickly.
3. The majority of events thought to be related to the **administration of a vaccine are actually not due to the vaccine itself** – many are simply coincidental events, others *(particularly in developing countries)* are due to human, or programme error.
4. It is **not possible to predict every individual** who might have a **mild or serious reaction to a vaccine**, although there are a few contraindications to some vaccines. By following contraindications the risk of serious adverse effects can be minimized.

We all would like to go back to the `**pre-pandemic lifestyle'**, where all had freedom to move, meet and make merry and have a progressive economy. I am afraid, we will have to lead a `restricted' lifestyle *(use of face-mask, social distancing and hand hygiene measures)* for some more time before becoming **physically and mentally free** from the **impact of COVID-19**.

Celebrations

Ganapati Pooja

Celebrations

Deepawali - Lakshmi Poojan

Celebrations

Christmas Party

Celebrations

Republic Day

Testimonials

Staff

Dr Shivkumar G. Lalwani

Consultant, Neonatal Medicine

I am a full time Neonatal consultant at **Dr L H Hiranandani Hospital**. While I was taking care of deliveries of COVID positive mothers and positive neonates, I got infected in May 2020. The illness started with loose motions and fever and went on to cough, severe malaise and rash. I got admitted here for the next 10 days. Luckily I did not have a fall in my oxygen levels but had to take injectable steroids due to persistent fever.

Fortunately, at home my wife and son didn't have severe symptoms but had to remain isolated for 14 days.

I must say that the scare that the **media** had created by **highlighting** only **the deaths** and **not the recoveries** had made my **COVID experience a dreaded one**.

I am thankful to the whole medical team and management of our hospital for taking good care during these trying times.

Mrs Elizebeth Thomas

Nurse Manager

When I decided to become a nurse in the year 1985, my father told me that nursing is both social service and a source of living. Ever since, I have tried to fulfill my duties as a nurse with the same realization and determination. During a period of at least three decades of my **life serving and caring for people, various challenges that arose were defeated and overcome by the grace of God**. But then came the year **2020, and the devastating coronavirus pandemic** with it. On **March 2020, Dr L H Hiranandani Hospital** was declared a **COVID hospital**. Several changes followed. We nurses who had been disciplined and trained to **wear wrinkle-free uniforms** now had to **wear scrub suits and PPE kits** upon it. We who earlier took extra care to be presentable, neat and tidy, now were all sweaty and unable to use the toilets when needed. Several fears and worries were in our mind when it all began. The major challenges before me were to first overcome my concerns about caring for those infected with the disease and then motivate and cast out the fears of my children, my nurses, **who have to be near the patients and are at risk of exposure to the highly contagious virus**. Together, we overcame our fears and stepped into the **COVID battlefield**. We became COVID warriors. Day-by-day the number of patients kept increasing and we kept the warfare going without losing hope and strength.
After experiencing severe body pain, headache, throat pain and fever, I was diagnosed with COVID-19 on **2nd September 2020** and was admitted to the hospital immediately upon **diagnosis**. The care and treatment I received from my dear ones at the hospital is unforgettable. Although there was stress and pain associated with the disease, their hospitality made it bearable. The nurses were always ready and present a call away, the doctors earnestly cared for me and helped in my speedy recovery, and my seniors and colleagues frequently called, comforted and supported me in a period of isolation. I gratefully remember the service of the pantry and housekeeping staff. Finally, by **God's grace, COVID lost the battle and I survived**. My superiors took extra care to ensure my total recovery and I was granted leave generously so that I could rest and regain my energy completely. I did so and now am back in the battlefield with my fellow **COVID warriors**. As the hymn goes, deep in my heart, I do believe, we shall overcome someday soon. This is how I, **Mrs Elizebeth Thomas**, went from being a **COVID warrior, to a COVID patient and finally became a COVID survivor**.

Testimonials
Staff

Mr Ramesh Jayram Mane
Housekeeping Staff

नमस्कार

मी रमेश जयराम माने, डॉ.एल.एच.हिरानंदानी हॉस्पिटल मध्ये ऑक्सिडेन्ट आणि एमरजन्सी मध्ये कामास आहे. कोरोना झाल्यापासून मी तिथे काम करत आहे व तिथे काम करताना मला प्रचंड त्रास झालेला आहे. ह्या सगळ्याच कामामध्ये मलाही कोरोनाची लागन झाली व मी हॉस्पिटलमध्ये ॲडमिट झालो. माझी ऑक्सिजनची पातळी खाली गेली होती, पण ह्या सगळ्यावर मात करत मी बरा झालो व दहा दिवसानंतर पुन्हा कामावर हजर झालो.

मी ॲडमिट असताना माझ्या आईला पण कोरोनाची लागन झाली व तिला डॉक्टरांनी आय.सी.यु. मध्ये दाखल केले. मी आणि माझी आई ॲडमिट असताना हॉस्पिटलच

डॉक्टर, नर्स आणि सर्व स्टॅफ ने त्यांची खुप मनापासून सेवा केली आणि आम्ही कोरोना मुक्त झालो. हा आमच्यासाठी माणुसकीचा एक सुःखद अनुभव होता.

Mr Anil Thomas
Front Office Staff

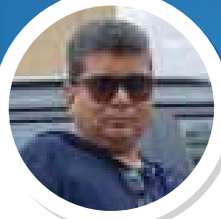
I, Anil Thomas working in Front office department as a supervisor Customer Care was admitted on 18/06/2020 and discharge on 26/06/2020.

I was completely shattered, when I came to know that I was COVID positive. But then when my colleague and seniors said don't worry will arrange bed for you.. All supportive words means a lot to me at that crucial period of time. I know I was in safe hands because I have seen my colleagues who were also contacted with COVID had recovered with the treatment of our doctors. I was having full faith that my hospital would save me. I would like to thank the treating doctors *(Dr Maheema, Dr Shalini)* and the nursing staff for taking care of me and giving supportive words.

I will always try my best and work hard towards the growth of my hospital. My hospital not only take care of their staff but also their family members. Proud to be a part of Dr L H Hiranandani Hospital. May God always showers his blessings upon my hospital and we achieve every new height in the coming years.

Testimonials

Patients



Manish Vora

It was a disastrous phase for me and my family when my son and I were detected with COVID. It was 14th of August when I had tested positive without any major symptoms and was asked to home quarantine.

After 3 days of isolation, I started getting heavy fever and my condition was worsening. That is when I decided to get myself admitted into a hospital. Initially I decided to go to a local nursing home as I was very apprehensive about getting admitted to a hospital like Dr L H Hiranandani Hospital considering it would be an expensive affair. But since I did not want to take any chance, I came to Dr L H Hiranandani Hospital.

It was late in the evening and all thanks to **Dr Samrat Chavan** who was the first point of contact at the fever clinic and guided me through the admission process, and started the initial treatment immediately. My vitals were poor and the CT scan reports showed the virus in my lungs was increasing with a very high CRP rating. Thankfully **Dr Swapnil Mehta** started a course of Remdesivir injections and slowly everything started getting back to normal.

During the course of my 8 day stay at Dr L H Hiranandani Hospital, I was attended by **Dr Swapil Mehta** and **Dr Neeraj Tulara**, who took the right decisions at the right time. Apart from the excellent treatment from the doctor team, what stood out were the exceptional services by the nursing staff ***(All credit to Ms Elizabeth for the intensive nursing care)***, the dietician and the house keeping team. Each team was high welcoming and very cooperative. The entire staff was extremely cooperative and the overall service, treatment, hygiene, food, and medical services were simply **'best in the Class'.** Also the hospital in itself is so well equipped with all state of the art amenities which are highly appreciated.

A big Thank you to each and everyone at Dr L H Hiranandani Hospital for making it what it is. Every one working in the hospital is a true for my entire family; **Dr L H Hiranandani Hospital has become the first choice in case of any further medical help**.

Prashant Mohite

The year 2020 will be an unforgettable year of my life, as almost for 3 months of the year it was lockdown. After unlocking phase 1, my office resumed as I have physical work. One Sunday, suddenly, I had a fever, and the disaster started. After taking 5 days course, my wife's friend **Dr Hema** advised doing COVID-19 test. After taking the test I was shifted to COVID Centre at Andheri for isolation. Unfortunately, the test came positive the next day. Our house was sealed, sanitized and my family got 14 days quarantine stamp.

As days passed, my condition became complicated. Immediately my wife contacted the **HR head of Dr L H Hiranandani Hospital and within 5 minutes,** she arranged everything. It was like God in her form helping me in such a difficult situation, when beds were unavailable in other hospitals. As our house was sealed no one was there to help yet she came with all help, including the deposit.

After admission, my treatment started and within 4 days I recovered with the help of **good Doctors, Nurses, Cleaning staff**, Admin and also nutritious food with hygiene maintenance. Even though my O2 level started dropping immediately, Oxygen was provided and I was suggested to take Remdesivir injection for quick recovery. The hospital provided the injection immediately on MRP which helped me recover and within 2 days, I was discharged. I am obliged to HR Head of the Hospital and the entire hospital staff from the bottom of my heart for the good treatment and helping me in such a tough situation. It is an example of great humanity.

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Kusum Dedhia

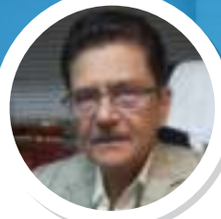
I, Kusum K Dedhia, 59 years old, would first of all like to thank the Head of Accounts & Finance as well as **Dr L H Hiranandani hospital** from the bottom of my heart.

The year 2020 will be an unforgettable year of my life. One Sunday, suddenly, I had a fever with cough and cold, and the disaster started. My son, **Dr Vicky Dedhia**, suggested doing a COVID test. Unfortunately, the next day test came positive. Our house was sealed, sanitized and my family got 14 days quarantine stamp. As I am diabetic and hypertensive (a high-risk patient), admission was required.

Immediately, my cousin, Chetan Dedhia, contacted the Head of Accounts & Finance at Hiranandani Hospital and arranged everything. It was as if God in his form, helping in such a horrible situation where hospitals beds were unavailable in other hospitals.

After admission, my treatment started, and soon I recovered within four days with **good Doctors, Nurse, Cleaning staff, Admin** and also for the **healthy, delicious food with hygiene maintenance, and discharged with good health**. Next day at home, my condition worsened again at home. My oxygen level started dropping, so we immediately contacted the Head of Accounts & Finance of the hospital through my cousin and was advised to reach to the emergency **department of Hiranandani Hospital**. We reached there and, was provided with oxygen without any delay. The CT scan was done, and the doctor started the admission process and suggested us to take tocilizumab injection for quick recovery.

Within a week I recovered and got discharged. I am obliged to the Head of Accounts & Finance of Hiranandani Hospital and the entire hospital staff from the bottom of my heart for the treatment and timely help in such a difficult situation. It is an example of **great humanity.**



Adv. Jaysing G. Bhanushali

I was diagnosed for COVID positive in first week of June, 2020. Initially **Dr Samrat Chavan** at **Dr L H Hiranandani Hospital** was of major help in the admission process who judged my condition rightly and got me admitted. Thereafter I was taken in caring hands of **Dr Pahuja** who treated me successfully during crucial first 4 days of my admission taking right calls when required after due consultation with my daughter who is also a doctor. Considering my advance age and health condition expert doctors took right decision and shifted me to ICU ward under able guidance of **Dr Arpita Dwivedi** her positive approach helped me and my family through the difficult phase. After been treated in ICU I was under care of **Dr Neeraj Tulara** for short while. After 3 days I was shifted to regular ward and treated by **Dr Swapnil Mehta** successfully and discharged.

In course of my 15 days stay at Dr L H Hiranandani Hospital. I had received good treatment and mental support from **all doctors and staff**, which was much needed. I must appreciate the exemplary efforts taken by all doctors and their teammates. The medical services were efficient as the Hospital is equipped with all modern requisite amenities. Housekeeping and nursing staff was extremely co-operative and readily available at all times. I also found all companion patients to be satisfied and praising the arrangement all the time.

I sincerely believe with my experience that Dr L H Hiranandani Hospital is best choice for all in case of any medical emergency or treatment.

Gratitude

Alone, we can do so little;
Together, we can do so much.

– Helen Keller

Our heartfelt gratitude towards

The **300+ donors** who came forward to **donate plasma** to our patients at a time of great need, **helping more than 600 patients** receive the much-required **convalescent plasma**.

&

The many **philanthropists** in our community and from overseas, who contributed immensely towards ensuring a steady **supply of equipment and medicines** for **our patients and personnel**.

We are deeply touched and humbled by your compassion. Your kindness and support will always be cherished and remembered.

Unity is strength .....
when there is teamwork and collaboration,
wonderful things can be achieved.

– Mattie Stepanek

Editorial Board

Hiranandani Hospital

Your Family Superspeciality Hospital™

Dr L H Hiranandani Hospital

Western India's first NABH accredited superspeciality hospital.

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