

SHREENATH
PHARMA
MAGAZINE

Volume 1, Issue12, May 2020



Table of Content

# About us.....	3
# From the Editor's Desk.....	4
# Pharma News.....	5
# Molecule of the month.....	7
# Dr. Harsh Vardhan elected to take leadership of the WHO.....	9
# UpsideOfLockdown.....	12
# Review of Current Vaccine and Therapeutic Development.....	18
# Healthcare Expenditure and COVID-19.....	20
# Talk the talk.....	22
# 'Will coronavirus change our attitudes to death? Quite the opposite!.....	24
# Life Under Lockdown.....	26
# 'We can't go back to normal':How will coronavirus change the world?.....	27
# Upcoming Events.....	29

About Us

Shreenath Pharmamagazine started in 2019 with a vision of bridging the gap between academic institutes and industries. The magazine is a monthly publication. This publication is devoted to science and practice of pharmacy in all its branches. The main guiding force behind this publication is Mr. Janak Jalundhwala (Shreenath Chemicals) who envisioned a platform for budding pharmacists to showcase their innovative research and strategic minds to small, medium and big size industries.



Shreenath Pharmamagazine offers a unique blend of pharma news, interviews, case studies, comments on critical issues faced by pharmaceutical industries. The magazine would also list out important upcoming events which will be beneficial for delegates from industries as well as academics. Our broad editorial lens along with the philosophy of advisory board involving Mr. Bharat Shah (Shreenath Chemicals) is to deliver sharp, informed and entertaining coverage from pharmaceutical institutes and industries allows pharmamagazine to communicate on matters most relevant to the readers.

Small and medium sized pharmaceutical manufacturing industries not having a full scale R and D facility of their own also face many hurdles which can be resolved by academic research. This magazine serves as a medium to communicate the requirements of the industries to the academicians. It also would communicate research works conducted in various institutes to the industries. The magazine would include not just research but also some interviews and articles by the various pharmacists. The highlights would also include upcoming pharma events and some latest news. It will also have some fun activities like brain teasers and jokes. It also features campus news from various pharmaceutical institutes.

This magazine is distributed complimentary online by emails and social medias like LinkedIn and Facebook. It will also be available on the website (www.shreenathpharmamagazine.com) It is distributed to all the subscribers, members of Associations like Tarapur Industrial Manufacturers Association (TIMA), Indian Pharmaceutical Association – Students' Forum, Pharmocracy. It is also circulated to offices of Indian Pharmaceutical Association, Indian Drug manufacturers Association and Pharmaceutical institutes based in and around Mumbai.



From the Editor's Desk

Dear Readers,

Its been over three months of lockdown and lot of news popping up regarding coronavirus and lockdown statistics in various regions. The previous issue focused on various updates regarding coronavirus. We also tried to cover activity reports from Drug Inspector - Mr. Shyam Pratapwar and Indian Phramaceutical Association - Maharashtra State Branch (IPA-MSB). I am very glad to share with all my readers that Mr. Shyam Pratapwar is promoted as an Assistant Commissioner and we welcome Mr. Manjeet Rajpal & Mr. Pramod Katkade in the Boisar region. IPA-MSB has also been very active in this month too with various activities.

In this issue we bring across to our readers a cover story which highlights how lockdown has helped many different professionals to upgrade their skills. We have invited authors to share some updates on vaccine research and participation of India at WHO. The molecule of the month is Remdesivir which is broad-spectrum small-molecule antiviral drug that has demonstrated activity against RNA viruses. In this issue we have tried to bring in some human resources aspect by covering an upside story. We have added technical informations regarding Coronavirus it's drug and vaccine. Apart from this, we have also tried to cover economical aspect for our readers by interviewing a Chartered Accountant .

Wishing that this issue brings in brief information about pandemic in pharmaceutical industry to all students and pharmacists. I will be happy to hear your feedback. Feel free to contribute for our upcoming issues.

In this pandemic, don't forget there is special GMP edition awaiting next time!

Happy Reading!

Forum Gandhi (Jalundhwala)

Editorial Team: Atharva Magdum
Sahil Bhatia
Ravi Kukreja
Mayur Khiyani
Along with Pharmacad & Pharmocracy

Coverpage & Design: Vaishnavi Pawar

Ratan Tata picks up stake in 18-year old's pharma startup

Ratan Tata, chairman emeritus at Tata Sons, on Thursday invested an undisclosed amount in a pharmaceutical start-up Generic Aadhaar, in his personal capacity. The startup is run by 18-year-old Arjun Deshpande, who is the founder and CEO. The startup sources generic drugs directly from the manufacturer and sells it to retail pharmacies, eliminating 16-20% wholesaler margin. These pharmacies are single medical stores which otherwise face competition from big brands and online pharmacies.

Reference:<https://www.livemint.com/companies/start-ups/ratan-tata-picks-up-stake-in-18-year-old-s-pharma-startup-11588848216542.html>

GlaxoSmithKline signs manufacture deal with Samsung Biologics

GlaxoSmithKline has signed an agreement with South Korea-based Samsung Biologics for additional capacity to manufacture and supply its biopharmaceutical therapies. This capacity may change based on GlaxoSmithKline signs manufacture deal with Samsung Biologics's future needs and will support the company's manufacturing network. The eight-year agreement is valued at more than \$231m and will initially see commercial production of Benlysta (belimumab). Technology transfer will begin this year with the first commercial supply expected in 2022. In the future, the partnership will be expanded to add other speciality-care products.



Reference:<https://www.pharmaceutical-technology.com/news/glaxosmithkline-samsung-biologics-deal/>

Glenmark initiates Phase 3 clinical trials on antiviral Favipiravir for COVID-19 patients in India

Glenmark Pharmaceuticals announced that it has initiated Phase Three clinical trials in India on Antiviral tablet Favipiravir, for which it received approval from India's drug regulator DCGI in late April. Glenmark is the first company in India to initiate Phase 3 clinical trials on Favipiravir for COVID-19 patients in India. Favipiravir is a generic version of Avigan of Fujifilm Toyama Chemical, Japan, a subsidiary of Fujifilm Corporation. Clinical trials have commenced and over 10 leading government & private hospitals in India are being enrolled for the study. Glenmark estimates study completion by July/August 2020.

Reference: <https://www.expresspharma.in/latest-updates/glenmark-initiates-phase-3-clinical-trials-on-antiviral-favipiravir-for-covid-19-patients-in-india/>

Scientists develop the most heat-resistant material ever created

A group of scientists from NUST MISIS developed a ceramic material with the highest melting point among currently known compounds. Due to the unique combination of physical, mechanical and thermal properties, the material is promising for use in the most heat-loaded components of aircraft, such as nose fairings, jet engines and sharp front edges of wings operating at temperatures above 2000 degrees C. In the future, the team plans to conduct experiments on measuring the melting temperature by high-temperature pyrometry using a laser or electric resistance.

Reference: <https://phys.org/news/2020-05-scientists-heat-resistant-material.html>

Coronavirus deaths jump by over 2,000 in biggest single-day rise in India

India's coronavirus death toll has increased to 11,903, after making the biggest one-day jump of 2,003 deaths. The total number of cases has increased to 3,54,065, the government said. Meanwhile, the number of patients who have been cured/discharged has increased to 1,86,934 and 1,55,227 of total cases are active.

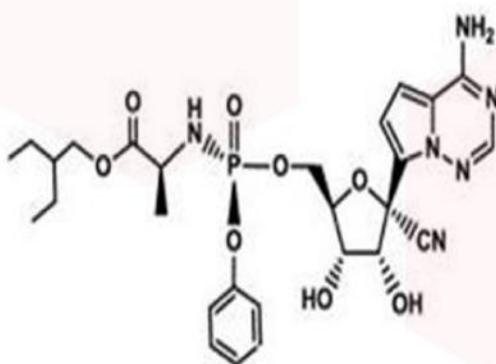
Reference: <https://inshorts.com/en/news/coronavirus-deaths-jump-by-over-2000-in-biggest-single-day-rise-in-india-1592367632871>

-As reported by S.Bhatia

MOLECULE OF THE MONTH

REMDESIVIR

Recent international epidemics of coronavirus-associated illnesses underscore the urgent medical and public health need for vaccine development and regulatory body approved therapies. In particular, the current coronavirus disease 2019 (COVID-19) pandemic has quickly intensified interest in developing treatment options to mitigate impact on human life. Remdesivir (GS-5734TM) is a broad-spectrum antiviral drug that is now being tested as a potential treatment for COVID-19 in international, multi-site clinical trials. Currently available evidence about the antiviral effects of remdesivir against coronaviruses is primarily based on in vitro and in vivo studies (including some on a chemically related compound, GS-441524TM), which have demonstrated largely favorable findings. As the pandemic progresses, information from human compassionate use cases will continue to accumulate before the clinical trials are concluded.



Remdesivir (GS-5734) is an investigational broad-spectrum small-molecule antiviral drug that has demonstrated activity against RNA viruses in several families, including Coronaviridae (such as SARS-CoV, MERS-CoV, and strains of bat coronaviruses capable of infecting human respiratory epithelial cells), Paramyxoviridae (such as Nipah virus, respiratory syncytial virus, and Hendra virus),

and Filoviridae (such as Ebola virus). Originally developed to treat Ebola virus infection, remdesivir is a prodrug of the parent adenosine analog, GS-441524, both of which are metabolized into an active nucleoside triphosphate (NTP) by the host. The parent nucleoside, GS-441524, has displayed antiviral activity against SARS-CoV, Marburg virus, and feline infectious peritonitis virus, among others. A number of studies have examined the effects of these two drugs on coronaviruses (CoVs) both in vitro and in vivo using mouse and non-human primate animal models.

MECHANISM OF ACTION :

As a nucleoside analog, remdesivir acts as an RdRp inhibitor, targeting the viral genome replication process. The RdRp is the protein complex CoVs use to replicate their RNA-based genomes. After the host metabolizes remdesivir into active NTP, the metabolite competes with adenosine triphosphate (ATP; the

natural nucleotide normally used in this process) for incorporation into the nascent RNA strand. The incorporation of this substitute into the new strand results in premature termination of RNA synthesis, halting the growth of the RNA strand after a few more nucleotides are added. Although CoVs have a proofreading process that is able to detect and remove other nucleoside analogs, rendering them resistant to many of these drugs, remdesivir seems to outpace this viral proofreading activity, thus maintaining antiviral activity.

SAFETY & SPECULATION :

Some safety data were formally collected during a clinical trial conducted in the Democratic Republic of Congo that randomized 175 patients to be treated with remdesivir for Ebola [39]. Incidentally, randomization to remdesivir treatment was discontinued in this trial after an interim analysis showed superior survival for two other trial drugs, despite preclinical and compassionate use data having been favorable for remdesivir against the Ebola virus prior to the trial [9]. Interestingly, patients who received remdesivir had slower rates of viral clearance compared to patients who received single-dose antivirals (specifically, MAb114 and REGN-EB3), which the authors hypothesized may be related to the fact that the treatment plan for remdesivir involved multiple intravenous infusions. However, for now, information on the potential efficacy of remdesivir specifically against CoVs is largely limited to in vitro and animal studies, though COVID-19 related knowledge is evolving quickly. Overall, past studies on other CoVs may have limited generalizability to the virus underlying the current pandemic because of the high genetic diversity of the Coronaviridae family, although broad-spectrum drugs tend to be directed at well-conserved targets. In addition to this issue, there are a number of factors that can impact how predictive findings from in vitro or in vivo models may be of clinical efficacy against SARS-CoV-2. Multiple clinical trials are underway on the use of remdesivir for treatment of COVID-19. The NIH-sponsored clinical trial, ongoing in the U.S. and the Republic of Korea, is a double-blinded, placebo- controlled trial in which patients are randomized to receive either placebo or an initial dose of 200 mg of intravenous remdesivir on the first day, followed by a maintenance dose of 100 mg per day, through discharge up to a maximum of 10 total treatment days. The primary outcome of the trial, as described in the U.S. National Library of Medicine clinical trials registry, will be expressed as the proportion of patients in each category of a seven-category clinical severity scale on the fifteenth day post treatment initiation. Additionally, Gilead Sciences is sponsoring a remdesivir study among patients with severe COVID-19 with a composite primary outcome measure of fever normalization and oxygen normalization.

Reference:<https://www.sciencedirect.com/science/article/pii/S2352771420300380efwcwffer>

Dr. Harsh Vardhan elected to take leadership of the World Health Organization – Executive Board : A perspective on some unprecedented internal and external challenges to be addressed by WHO in 2020-2021

BY INVITATION

*Dr. Yash J. Jalundhwala,
Director, Health Economics Outcomes Research
AbbVie Inc. USA*

At the recently concluded 73rd World Health Assembly (WHA), Dr. Harsh Vardhan was elected as the Chair for the World Health Organization (WHO) – Executive Board (EB). Dr. Vardhan is also the Union Minister of Health and Family Welfare, India. Dr. Vardhan took over from Dr. Hiroki Nakatani of Japan. Dr. Vardhan will remain as the chair of the board until May 2021 before handing over the responsibility to another region, but will continue to remain a member of the WHO-EB until 2023. His tenure comes at a time when the WHO also faces one of the toughest challenges yet, both internally and externally.

Established in 1948, the WHO is a specialized agency of the United Nations, leading global efforts for attainment of the highest levels of public health for the entire general population. Headquartered in Geneva, Switzerland, WHO has 6 regional offices: (i) Africa, (ii) Europe, (iii) South-East Asia, (iv) Eastern Mediterranean, (v) Western Pacific, and (vi) The Americas. India, a member state of WHO since foundation, is part of the South-East Asia Regional Office (WHO-SEARO) which includes a 10 other countries including Bangladesh, Nepal, Sri Lanka, Indonesia and Thailand. WHO-SEARO is headquartered in New Delhi, India and is currently lead by Dr. Poonam Khetrpal Singh. Dr. Singh (in her second consecutive 5-year term for leading the WHO-SEARO), also happens to be the first woman to hold this post.

The WHO is governed by two key bodies: (i) the World Health Assembly, and (ii) WHO-Executive Board. The WHA, comprised of members from 194 countries, is the supreme decision making body and meets once annually in May. Amongst other responsibilities, the WHA also appoints the leader of WHO (i.e. Director-General for a 5-year term) and the leader of the WHO-EB (i.e. Chairman for a 1-year term). Dr. Tedros Adhanom Ghebreyesus, a public health researcher and a former minister for Health (2005 –2012) and Foreign Affairs (2012 – 2016) in the Ethiopian Government, is the current (2017-present) Director-General of the WHO. The WHA also elects 34 technical individuals (highly qualified in the field of healthcare and representing select member states from all the regions) to the WHO-EB for 3-year terms. One of the key responsibilities of the WHO-EB is to

to implement the decisions and policies of the WHA and advise and facilitate its work. The WHO-EB typically meets twice in a year, once in May (after the WHA) and one in January. Certainly, it does require the proverbial “village” to address the challenge of improving health for over 7 billion people on the planet, and so also in attendance in the meetings are invited members from partner organizations and non-government groups which are engaged in the same mission. As Chairperson of Public Health, I had a unique opportunity to attend the 124th Session of the WHO-EB in January 2009, representing the International Pharmaceutical Students’ Federation (IPSF), a leading international advocacy organization for pharmacy students. Together, the WHA and WHO-EB provide a key forum for various countries to debate, strategize and implement initiatives which help in eradicating disease, promote good health and well-being of the people across the world. It has an ability to make a profound impact on all of humanity.

Dr. Vardhan takes leadership at a crucial time in the history of the organization as the world deals with an unprecedented humanitarian and health crisis due to ongoing COVID-19 pandemic. The economic consequences of the COVID-19 pandemic also risk a spike in the other areas of ongoing health concerns for WHO including malnutrition and non-communicable life-style based diseases (e.g. obesity, cardiovascular diseases, mental health). The worry of a looming economic recession pushing millions of people towards poverty threatens to undo decades of progress made by the countries together with WHO. However, in addition to the insurmountable external health challenges, WHO also needs to address increasing political tensions between member countries, threatening the future and the very existence of the organization as it currently exists. While critics have raised questions on the scientific rigor, speed to action and impartiality of the WHO based on the responses to COVID-19, there may be broader underlying structural challenges which may now be coming to the fore. However, as countries across the world are fighting their own unique battles to combat the COVID-19 pandemic, WHO’s role is even more critical, by bringing the best scientific and medical minds together for coordinating global responses, enhancing education and creating evidence-based protocols to treat and eliminate COVID-19 threat. Some key efforts from WHO in the recent months also include the launch of their app for general public (WHO Info) and healthcare workers (WHO Academy) which is aimed to promote safety, education and training for handling the COVID-19 related care, as well as the conduct of the SOLIDARITY clinical trial for COVID-19 treatments. As we move

into the unknown times of the pandemic, accelerating the hopes for a cure/vaccine, evaluating protocols for lockdown and social distancing, the need for humanity to stay united, stay inclusive and support each other has probably never been higher. Future challenges will also include the partnership with public and private groups to ensure smooth access and supply to potential treatments and safety measures. Our best wishes to Dr. Vardhan and the entire WHO-EB to continue addressing the dual challenges on internal and external front, setting up the organization for decades of continued future success and coordinating the efforts to bring the best approaches for addressing this global pandemic and human crisis.

Related Links for Further Reads:

- 1) International Pharmaceutical Students' Federation - <https://www.ipsf.org/>
- 2) WHO-Executive Board: <https://www.who.int/about/governance/executive-board>
- 3) WHO Academy for Learning Apps - <https://www.who.int/about/who-academy>
- 4) SOLIDARITY Clinical Trial - <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov/solidarity-clinical-trial-for-covid-19-treatments#:~:text=Section%20navigation&text=%22Solidarity%E2%80%9D%20is%20an%20international%20clinical,relative%20effectiveness%20against%20COVID%2D19.>
- 5) WHO COVID-19 Support - <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>
- 6) Relevant Select News Articles:
a. <https://indianexpress.com/article/explained/dr-harsh-varadhan-who-executive-board-chairman-6420280/>
b. <https://www.timesnownews.com/india/article/harsh-varadhan-to-take-charge-as-who-executive-board-chairman-today/595396>
c. <https://www.who.int/news-room/detail/13-05-2020-launch-of-the-who-academy-and-the-who-info-mobile-applications>
d. <https://www.republicworld.com/world-news/rest-of-the-world-news/india-who-executive-board-harsh-varadhan-chairman-us-china-tedros-covid.html>
e. <https://www.sundayguardianlive.com/news/india-set-chair-whos-executive-board>

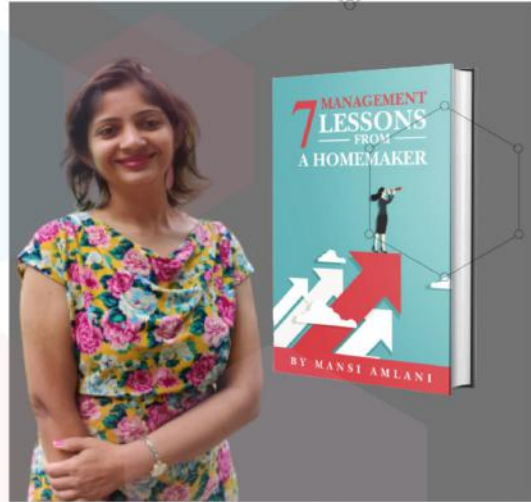
#UpsideOfLockdown

'Change is only constant in the world' Most of us faced change in our lives during this pandemic. Change involved working from home and working for home, being social virtually and locking down yourself with your family. We adapted the changes merrily with its own set of challenges but everyone yet has their upside story. This lockdown has helped them grow professionally, be it homemakers, students, professors, researchers or businessmen. Special thanks to Mr. Akash Shah(Shreenath Chemicals) to guide and help Co-ordinate with the story. Feel free to share yours too and we will be glad to continue the story in future issues.

"Identity Crisis to Identity Creation in 21 Days"

Mansi Amlani, Book Author

After completing my masters in Pharmacy, I had dreams to pursue my career in the R&D sector. I shifted to Hyderabad after marriage and worked as a business development associate. My life took full circle after embracing motherhood. Suddenly my priority changed and now was complete in-charge of my home. Homemaking was a choice which I happily took over. During the lockdown, I decided to pen down my thoughts about Homemaking, a highly glorified job yet equally neglected by the society, and write a book. This book was conceptualized, planned, executed and launched within the 21 days of lockdown managing the home chores reiterating the power of a homemaker. In this book I have written how a homemaker manages various functions like operations, finance, risk, time, and is a leader with the highest empathy. Challenges faced by a homemaker are no less than a manager in an organization. My book makes you realize that you can learn profound yet simple life and management lessons from your mother's or wife's experiences and implement them to become a better leader at your workplace. Receiving appreciation from various industry experts including CEO of Apollo Home-health care made my joy knew no bounds.



Enhancing skills – Self-discipline, culinary arts

Anand Kyatanwar, Asst. Manager, R&D, Formulation Development Bharat Serums and Vaccines Ltd.

Many migrant workers still struggling hard to reach their native place risking their life by continuously walking miles on their bare foot, with no proper food and water. What makes them takes this risk is the only hope of being with their loved

ones. Sitting on my couch one night when I was discussing with my dad it really clicked in my mind that had this not have happened would I be able to spend such long time with my family would I be able to talk peacefully with my dad, my mom, my wife and my friends (of course on call). Being employed in a private sector in a metropolitan majority of my time was spent in office and while commuting. Yes, situation today is bad but yes this has given me lot of time to spend with my family which me and my parent always wished. With lot of time in my hand I spent this time working on me and helping my mom and wife in their work made me learn many culinary art. This lockdown has made me Atamanirbhar as rightly addressed by our honourable prime minister of our country, if anyone in this world can make me stand on my feet is me myself.

Caged yet Engaged

*Rahul Lad ,Product Manager,Glenmark
Pharmaceuticals Ltd*



So what is COVID for me? COVID means Create Opportunities & set Vision In right Direction. Pharmaceutical business has always been face to face selling and seldom through digital medium, this lockdown has helped us explore the digital medium big time. Initially we were worried on case doctors)? How do we market our products? How do we launch a brand?

“Marketing is all about creating opportunities”, and taking this thought forward, we developed solutions to all our problems and created opportunities through digital platform. We started engaging both our internal & external customers through digital medium.

Engaging customers: Getting all expert doctors on one platform on a single day was very difficult earlier, however technology made it possible. We could conduct E CMEs engaging more than 1500 doctors across India scientifically and also used this platform to launch a product at one go. This solution was not only effective but also economical.....Saving time, money, energy for all.

Engaging our team: We worked upon developing skill set of our field force through various training modules via webinar, spread across the weeks. There were few fun & talent sessions which involved participation of family members too..... It is truly exciting to learn about talent within our corporate & personal family, which gets slightly difficult in our daily routine.

Apart from these, it has also helped me to carve out additional time for my family and hobbies. I could connect to all my old friends over a group video call cherishing the happy days spent together. In simple words, I am able to walk the extra mile staying at home. This COVID era has taught us the power of Internet and use of digital medium for business.

Virtual team building with limited resources

Yoshita Kankubkar, Q.A. Officer, Shreenath Chemicals

Lockdown which was thought to be for few weeks continuously extended which made me anxious to complete additional projects running in the company. Being a small scale company with no infrastructure of technicians to work from home was a challenge and I decided to not get demoralised but motivate my team. Using friendly technologies like whatsapp, emails, etc. I started working on documentation reviews with various departments. Delegating task with the available resources, training, following up, reviewing along with my personal work at home helped me evolve as a multitasker. My efforts reflected with completion of documentation review and the support of my team showcased the 'Strength of unity'.



Opportunity to enhance digital skills and obtain guidance from webinars

Ojaskumar Agrawal, Assistant Professor in Vivekanand Education Society's College of Pharmacy, Professionally, working as an examination coordinator, I got an opportunity to conduct an online exam for the students as per the directives of

University of Mumbai. While executing and preparing the guidelines for the same, I have learnt a brilliant thing of preparing, sharing and accepting the responses from the students for their online exam via Google sheets and Google classroom. This was the thing that I have learnt and executed for the first time. To narrate this incidence in detail, the first thing is to inform the students regarding online exam, paper pattern and how to upload the data online. Secondly, starting from how to prepare the question paper for the sessional exam, how many options needs to be given, marks allotment etc. I have learnt, while actually working at the ground level. Over and above, I have explored each and every alternative and worked on the minute details from every nooks and corners of the Google sheet to get acquainted with it. I feel this is one of the biggest upside of the lockdown for me.

Considering this lockdown, various colleges and institutes have organized prodigious online webinar series on current topics. This is also an opportunity; I got to upgrade myself to listen and comprehend to the expert's opinion and

take their valuable guidance.

Skill development with family

Madhura Rajadhyaksha, Section Head- Quality Assurance, Sitec Labs Ltd.

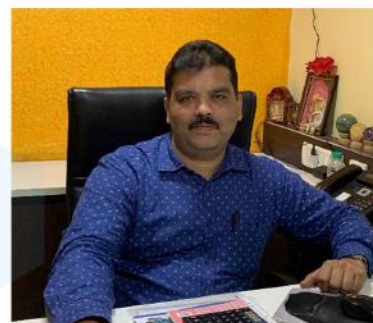
Being in Clinical Research Organisation(CRO), whatever is happening in the world we have to meet the timeline commitment made to sponsors. Initially, due to confidentiality and limited data access we were told to wait till further notice. But to meet some urgent requirements, I worked a few hours remotely. It was an unfamiliar experience. I learnt things that I hadn't ever considered before. The routine of the entire family had changed drastically. My husband had started working from home and was still getting acquainted with the work environment. Both my children were stuck at home, so it was my additional duty to keep them engaged. It enhanced my skills regarding people and the management of their emotions. Online schooling for my son allowed growth in my training skills, which is an inseparable part of my profession. I had to plan the menu for meals in advance, which helped me with planning and time management. It was a great joy to meet my friends and relatives online. It taught me many new etiquettes and security policies. My interests in multiple activities were urging me to make the best use of every single moment. I could take on multiple tasks at once. I can safely say that while this pandemic has taken a lot of things from us, it has also given us something new. We now know that there is a solution to almost everything, and that we can learn and grow in the process.



Growth with a paradigm shift.

Sanjay Surana, Managing Director, Maxwell Lifesciences

As a pharma entrepreneur seeing increased demand for a completely new type of product portfolio, I have started incentivizing employees especially in the production sector who are supporting plant operations during this COVID-19 period. With this new product portfolio that includes products such as Sanitizers, Disinfectant solutions, Antiseptic solutions and Immunity boosters in various forms which were earlier considered as personal healthcare products, having very minimal market share. As a pharma entrepreneur I Realised it, Tracked it , Reframed it in a fruitful way & enjoyed the processing of these ideas with my team and launched some products which boosted the brand MAXWELL in domestic as well international market and many



more products are coming very soon. As a pharma professional and entrepreneur for more than 25 years I find this pandemic as a complete game changer in 'Medicine and Healthcare Sector' with unlimited scope of growth resulting in 'upside of lockdown' for wellbeing of mankind in the most effective way.

Increase in productivity with lesser overhead costs

Kalpesh Shah, Partner at National Drug House

In city like Mumbai, any office goer must be travelling on an average 3hrs (to and fro) using crowded trains, buses and autos. The stress of commuting is much more than work issues. Working from home eliminates all such hassles. Saving in time and hassle automatically increases the productivity. Working from home gives lot of flexibility. A person is motivated to work beyond normal working hours as per his convenience which I believe somehow boosts productivity. There's always spending some quality time with the loved ones that adds up to it. The use of advanced technology can be leveraged for efficient working environment and thereby improving work culture which is a Win -Win as the company can save lot in terms of major overheads of office rents, maintenance and energy bills. One could find lot's more new business Opportunities within and outside the current structure of business model. Started looking at a bigger picture. Due to fewer interruptions, managed to find new growth areas and allowing more focused work.



Blooming of the entrepreneurial skills

Dhrupa Shah, Homemaker, Entrepreneur

Lockdown gave me chance to explore the business woman in me. While purchasing the essential goods during lockdown period, I realised the demand of sanitizers in every store opened for essential items. Having good customer relations with few stores in my locality, I built my potential client list and started contacting sanitizer manufacturers. Approaching various manufacturers, arranging the supply chain system, negotiating prices and satisfying customers was a newer challenge to manage with my household chores. All together it helped enhance my task management and time management skills. Few deals cracked and made me feel accomplished of expanding my horizon from multitasker as a homemaker to multitasker with business development.

Recharged to attain a balance in things

Mahi Mhatre, Student, KMKCP

Lockdown has certainly brought inconvenience and disruption to normal life but for me as a student it has also brought many new opportunities. In this period there is no fixed timetable or routine to be followed, which has paved its way for self-paced learning, this has



allowed me to plan the completeness of a tough chapter according to my own learning abilities. Moreover, the lack of the busy schedule mostly due to travelling has finally allowed me to catch up with my health, keeping my lethargy at bay to try out new tricks for studying. I have been also able to concentrate on my extra-curricular activities and explore myself like joining online courses, painting and reading non curriculum books. The online lectures have helped me to concentrate easily on the given topic as there is no distraction which usually happens in a live class. This period has taught me the importance of money. The best thing is, it has given me an opportunity to bond with my parents, to play games and help them in doing small household chores, which has given me a sense of happiness.

In conclusion, What we should all remember is that when the sun sets on an ocean, it rises on another, for the hands on the clock remind us that times come and go and that we need to keep moving forward. It is human nature to learn, to adapt and to survive and it is ambition that keeps us at it. So we should not loose our ambition, the sight of our goal, and modify ourselves as we prepare to enter into a modified world.

Review of Current Vaccine and Therapeutic Development Landscape to Fight COVID19

BY INVITATION

Dr. Dimple Modi,

Senior scientist, Oncology Precision Medicine

AbbVie Inc. USA

The first case of the global pandemic of novel coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was reported back in December 2019 and has since spread worldwide. It has already infected over 7 million people globally and claimed over 400,000 lives. Such unprecedented public health crisis calls for the global scientific and medical community to seamlessly work together to develop novel vaccines and therapies as well as evaluate the potential to repurpose existing therapies. The data is evolving rapidly with more than 200 clinical trials underway across the world. Below is a high-level summary of the two treatment options:

Vaccines:

The key to win this battle is the development of a vaccine but most experts agree that a successful vaccine therapy is more than a year away. As per Thanh Le et al, the global COVID-19 vaccine R&D landscape includes 115 vaccine candidates (April 2020) (Fig. 1). The status for each of the ongoing clinical trials can be found on Milken Institute's webpage. Some popular vaccine categories are described below:

- a) DNA Based: DNA-based vaccines work by inserting a genetically engineered blueprint of viral gene(s) into small DNA molecules (called plasmids) for injection into vaccinated people.
- b) Replicating Viral Vector: This involves putting a gene for a viral protein into a different virus (one that will not cause illness but can replicate).
- c) Protein Subunit: Rather than introducing whole viruses to an immune system, a fragment of the virus is used to trigger an immune response and stimulate immunity.

Therapeutic Strategies:

Repurposing existing therapies may most likely deliver short term efficacy results against COVID19. Potential treatments are currently being investigated in the clinic and can be broadly categorized into a) Antivirals and b) Immune-based therapies

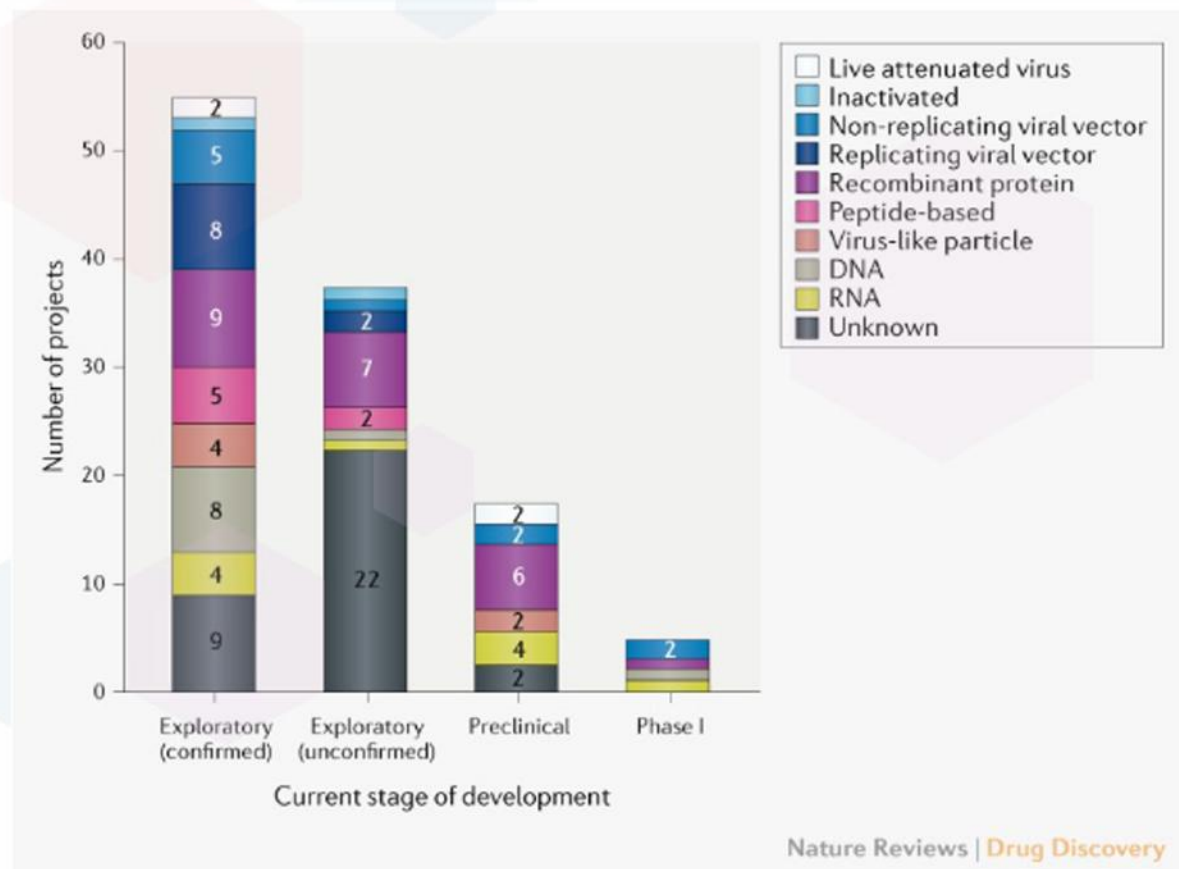
- a) Antivirals: Four existing medications with mechanism of action related to blocking of viral replication are under investigation:

chloroquine/hydroxychloroquine, Remdesivir, litonavir/lopinavir and interferon beta. Two key therapies discussed below:

a. Chloroquine/hydroxychloroquine: This anti-malarial medication was in the spotlight in the early days based on anecdotal evidence. As of today, the effectiveness of this medication is inconclusive. Data continues to evolve, and the conclusion might change based on additional subgroup analyses.

b. Remdesivir: This is an intravenous drug from Gilead that was previously developed for Ebola (and failed). End of April 2020, investigators announced data from a placebo-controlled trial showing that Remdesivir shortened the time to clinical recovery from 15 to 11 days. Although the impact on mortality rate was not statistically significant, improvement in recovery rate allows for healthcare systems to better manage capacity.

The FDA immediately authorized emergency use of Remdesivir.



b) Immune-based approaches: The immune system has the ability to combat COVID19 and therapies that enhance body's natural defense system may likely add benefit. Two approaches described below:

a. **Neutralizing Antibodies:** These are produced by patients who recover from COVID19 infection. Convalescent plasma and hyperimmune globulin are two such therapies that are being investigated in the clinic. The former involves purifying blood serum from recovered patients and administering to high-risk individuals. The latter is a concentrated form of convalescent plasma that requires additional purification steps. Trials evaluating the efficacy of this therapy are ongoing with results expected as early as September 2020.

b. **Immune modulators:** Severely ill COVID19 patients often experience hyperactive immune system. Tocilizumab (Roche) and Sarilumab (Sanofi) are two antibody-based therapies that inhibit interleukin-6 (IL-6), the levels of which are documented to be substantially higher in COVID19 patients. Late stage trials are underway with interim results suggesting preliminary evidence of clinical benefit .

In conclusion, the COVID-19 pandemic represents the most challenging global public health crisis that the current generation has witnessed. The speed and volume of clinical trials launched globally to investigate potential vaccines and therapeutics for COVID-19 highlight the unprecedented need to produce reliable, top quality evidence/data while we live through the pandemic.

Healthcare Expenditure and COVID-19

Yash Ganatra
Student, KMKCP

In last 20 years, the world has seen four major outbreaks of diseases out of which three were caused by corona viruses. The one was SARS CoV-1 which was in 2003. The second was MERS corona virus (Middle East Respiratory Syndrome), reported in December 2013. The third outbreak which has affected far more countries is caused by SARS CoV -2 which has 86% of its genome identical to SARS CoV-1.

As the number of corona cases are increasing all over the world, it is now important to see how much countries spend on their healthcare systems. Below is the list of few countries with % of their GDP spent on health care system. This figures are for year 2017.(Source: World Bank)

Sr.no	Country	% of GDP spent on Health Care System
1.	United States of America	17.06%
2.	Italy	8.84%
3.	Spain	8.87%
4.	Denmark	10.11%
5.	Germany	11.25%
6.	India	3.53%

Now, let us review the performance of these countries in recent COVID-19 outbreak.

America spends 17.06% of its GDP on healthcare system, but it has been the worst performing country till date. But, the healthcare system of America cannot be blamed as experts cite the negligence of administration and government to perform at the right time as the reason of this outbreak.

Italy and Spain, the two European countries to be affected the most by corona virus spent 8.84% and 8.87% of their GDP on health care system respectively. Their performance cannot be considered good enough but they have managed to reach their peaks of active cases and are recovering fast through this outbreak. Italy reached its peak of active cases on April 20 while Spain reached its peak of active cases on April 23.

Denmark is considered one of the best countries to have tackled the whole COVID-19 situation. It has spent 10.11% of its GDP on healthcare sector. This has helped it in controlling the outbreak. Denmark has only 11,182 total number of cases. Germany is another example of worse hit countries by COVID-19 but its healthcare system has been able to keep the death rates down as compared to other countries. It has also passed its peak of active cases on April 6.

Now, finally coming to India. India spent only 3.53% of its GDP on healthcare sector. This has led to less testing as compared to other countries which is the major requirement of time. Now, the situation is turning horrifying as number of new cases has climbed to 5,000 per day with the peak nowhere in sight. We have just crossed 1 lakh total number of cases. The deaths are still under control yet it still feels uneasy to know that we have not reached our peak of active cases. The active cases still increases by 2,000 per day (atleast) still there is hope that we can control the further outbreak of COVID-19.

TALK THE TALK

Mr. Rajiv K. Gandhi
**Practicing Chartered
Accountant**



Are we headed towards recession? Are the coming years gloomy for the Indian economy?

No, the Indian economy isn't heading towards recession and I do not foresee very gloomy future. An economy is considered to be in recession if it has two quarters of decline, that is, growth contracting below zero per cent. India, so far, has only been in a "slowdown" mode, its high growth rate for many years that averaged around 7-8 per cent "slowing" down to 4 percent. Such growth indicates slow down but no recession. In current scenario, policymakers are easing monetary and fiscal policies in response to the slowdown and the impact of these measures remains to be seen ahead. Changes in the policy and their positive impact will not let the Indian economy to gloom. Factor like, developments on the US - China trade dispute will also have a meaningful bearing on the global economy and trade. On the other hand, India is a relatively small part of the global supply chain. Our economy is driven more by internal factors — consumption, supported by demographics and investments, supported by the need for infrastructure — rather than trade. A global recession will have an adverse impact on growth due to slowing international demand and increased competition from imports. Our equity markets are also relatively open and will be impacted by the volatility in global financial markets that a recession would suggest. Thus, Indian economy will reach slowdown but not recession.

Recently, Govt has announced stimulus package. What are the major aspects to that a regular man should take away from this?

The stimulus package announced of Rs. 20 lakhs crore focuses on land, labour, liquidity and laws. It covers various sectors but to answer this question, I would consider only MSME sector. I would like to share some notable measures announced for MSME particularly. Firstly, there is Rs. 3 lakh crore collateral – free automatic loans, Rs 20,000 crore subordinate debt and revised definitions of MSMEs. This will allow small businesses to bounce back from the pandemic impact.

The economic stimulus will help many MSMEs resume operations by providing access to credit to help overcome near term loss of income. The long term focus on enabling MSMEs with technology also provides a great opportunity for businesses. Apart from these, another highlighting point is addressing the two key issues faced by many MSMEs. First key issue is that in the government procurement process MSMEs often face unfair competition from large foreign companies. The stimulus now disallows global tenders in government procurement up to Rs. 200 crore. Second key issue is that there is delayed payment for the sector and to address this, the government announced that the Centre and Central Public Sector Enterprises will honour every MSME receivable. Rs. 20 lakh crore economic package announced by the Prime Minister is a morale booster in itself. Living with the new normal and the reforms are going to be game-changing for all the business sectors.

Does the current scenario give impetus to pharma industries in India?

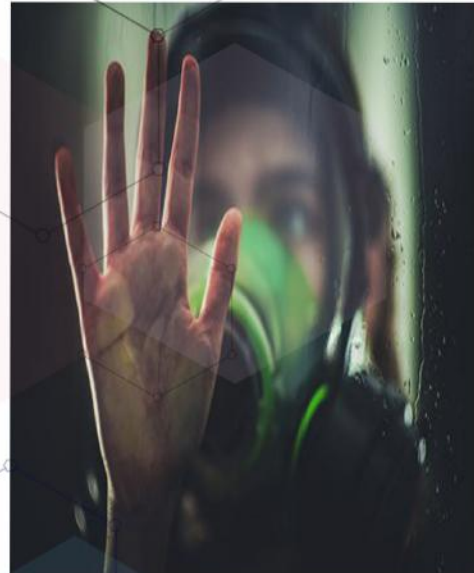
Yes, the current scenario gives lot of opportunities for the pharma sector to grow. The pharma sector had a very tough last four to five years and has now made a good comeback. The pharma sector is up 25-30% versus the general sector being down 20%; so it is about 50% outperformance that we see so far. There are two main factors which can lead to impetus. Firstly, it is the earnings up cycle; we are going to see multi-year earnings recovery which is going to come on the back of recovery in the base business. Secondly, we'll have some very nice substantive product launches in future. The fact is FDA's scrutiny will be getting quicker and more supportive compared to last three to four years. FDA will be guiding more and more companies towards higher compliance and will be leading to larger number of approvals. So these factors guides us to understand that pharma industries in India have impetus to move ahead.

'Will coronavirus change our attitudes to death? Quite the opposite'

Will the coronavirus pandemic return us to more traditional and accepting, attitudes towards dying – or reinforce our attempts to prolong life?

The modern world has been shaped by the belief that humans can outsmart and defeat death. That was a revolutionary new attitude. For most of history, humans meekly submitted to death. Up to the late modern age, most religions and ideologies saw death not only as our inevitable fate, but as the main source of meaning in life. The most important events of human existence happened after you exhaled your last breath. Only then did you come to learn the true secrets of life. Only then did you gain eternal salvation, or suffer everlasting damnation. In a world without death – and therefore without heaven, hell or reincarnation – religions such as Christianity, Islam and Hinduism would have made no sense. For most of history the best human minds were busy giving meaning to death, not trying to defeat it.

Then came the scientific revolution. For scientists, death isn't a divine decree – it is merely a technical problem. Humans die not because God said so, but because of some technical glitch. And science believes that every technical problem has a technical solution. We don't need to wait for Christ's second coming in order to overcome death. A couple of scientists in a lab can do it. Whereas traditionally death was the speciality of priests and theologians in black cassocks, now it's the folks in white lab coats.



True, at present we cannot solve all technical problems. But we are working on them. The best human minds no longer spend their time trying to give meaning to death. Instead, they are busy extending life. They are investigating the microbiological, physiological and genetic systems responsible for disease and old age, and developing new medicines and revolutionary treatments. Humans have been so successful in our attempt to safeguard and prolong life that our worldview has changed in a profound way. While traditional religions considered the afterlife as the main source of meaning, from the 18th century ideologies have lost all interest in the afterlife. What, exactly, happens to a communist after he or she dies? What happens to a capitalist? What happens to a feminist?

Will the current pandemic change human attitudes to death? Probably not. Just the opposite. Covid-19 will probably cause us to only double our efforts to protect human lives. For the dominant cultural reaction to Covid-19 isn't resignation – it is a mixture of outrage and hope. When an epidemic erupted in a pre-modern society such as medieval Europe, people of course feared for their lives and were devastated by the death of loved ones, but the main cultural reaction was one of resignation. Psychologists might call it “learned helplessness”. People told themselves it was God's will – or perhaps divine retribution for the sins of humankind. “God knows best. We wicked humans deserve it. Who are we to thwart God's plans?” Attitudes today are the polar opposite. Whenever some disaster kills many people – a train accident, A high-rise fire, even a hurricane – we tend to view it as a preventable human failure rather than as divine punishment or an inevitable natural calamity. If the train company didn't stint on its safety budget, if the municipality had adopted better fire regulations, and if the government had sent help quicker – these people could have been saved.

In the 21st century, mass death has become an automatic reason for lawsuits and investigations. Alongside outrage, there is also a tremendous amount of hope. Our heroes aren't the priests who bury the dead and excuse the calamity – our heroes are the medics who save lives. And our super-heroes are those scientists in the laboratories. Just as moviegoers know that Spiderman and Wonder Woman will eventually defeat the bad guys and save the world, so we are quite sure that within a few months, perhaps a year, the folks in the labs will come up with effective treatments for Covid-19 and even a vaccination. Then we'll show this nasty coronavirus who is the alpha organism on this planet! The question on the lips of everybody from the White House, through Wall Street all the way to the balconies of Italy is: “When will the vaccine be ready?”

When. Not if.

Reference: <https://www.theguardian.com/books/2020/apr/20/yuval-noah-harari-will-coronavirus-change-our-attitudes-to-death-quite-the-opposite>

LIFE UNDER LOCKDOWN

—•"LIFE UNDER LOCKDOWN"—•—

When corona got on , Quarantine took a dawn;
Breaking news got spread in each town,
That the whole country is now under lockdown;
A no. of games took place in the beginning,
But now no more of such to us is triggering;
Shocking is to see PUBG craze among people to end,
That too the defeat is by Ludo which is nowadays in high trend;
When introverts are like "ye bhi kya suhana waqt ka paimana hai"
Other hand extroverts yelling "mujhe ghar se bahar jana hai"
Ambiverts still on the threshold,
From some times excited to being pathetically bored;
Some painted ,sketched and also did zantangle art,
Others made singing ,dancing ,tiktok and binge watching their eachday's part;
Books are a bit far at stay,
Students have a conviction of exams getting cancelled away;
Worst is the plight of mothers here,
Coz khane me kya hai is the constant question they hear;
While being all time together has raised the bar of siblings fights,
They live ,learn ,tease but at the end care for eachother right?
To the brighter side is what u just read,
But worsen is the side of those homeless who cant even feed their children with butter
and bread;
Does it seems to be a huge task for us to stay home,
Many for us can't even enter their dome;
So Keep calm as we'll pass this with ace,
So that later we can hustle to get the world back on the precorona's pace.
-Farheen Salmaniya

‘We can’t go back to normal’: How will coronavirus change the world?



Everything feels new, unbelievable, overwhelming. At the same time, it feels as if we've walked into an old recurring dream. In a way, we have. We've seen it before, on TV and in blockbusters. We knew roughly what it would be like, and somehow this makes the encounter not less strange, but more so. Every day brings news of developments that, as recently as February, would have felt impossible – the work of years, not mere days. We refresh the news not because of a civic sense that following the news is important, but because so much may have happened since the last refresh. These developments are coming so fast that it's hard to remember just how radical they are. It's not just the size and speed of what is happening that's dizzying. It's the fact that we have grown accustomed to hearing that democracies are incapable of making big moves like this quickly, or at all.

But here we are. Any glance at history reveals that crises and disasters have continually set the stage for change, often for the better. The global flu epidemic of 1918 helped create national health services in many European countries. The twinned crises of the Great Depression and the second world war set the stage for the modern welfare state. But crises can also send societies down darker paths. Another recent crisis, the 2008 financial crash, was resolved in a way that meant banks and financial institutions were restored to pre-crash normality, at great public cost, while government spending on public services across the world was slashed. But disasters and emergencies do not just throw light on the world as it is. They also rip open the fabric of normality. Through the hole that opens up, we glimpse possibilities of other worlds. Some thinkers who study disasters focus more on all that might go wrong. Others are more optimistic, framing crises not just in terms of what is lost but also what might be gained.

Every disaster is different, of course, and it's never just one or the other: loss and gain always coexist. Only in hindsight will the contours of the new world we're entering become clear. The pessimistic view is that a crisis makes bad things worse. People who study disasters – and especially pandemics – know all too well their tendency to inflame xenophobia and racial scapegoating. When the Black Death came to Europe in the 14th century, cities and towns shut themselves to outsiders – and assaulted, banished and killed “undesirable” community members, most often Jews. In 1858, a mob in New York City broke into a quarantine hospital for immigrants on Staten Island, demanded that everyone leave and then burned the hospital down, fearful that it was putting people outside at risk of yellow fever. Wikipedia now has a page collating examples from more than 35 countries of “xenophobia and racism related to the 2019-20 coronavirus pandemic”: they range from taunts to outright assault. In Europe, the Hungarian prime minister, Viktor Orbán, recently announced: “We are fighting a two-front war: one front is called migration, and the other one belongs to the coronavirus. There is a logical connection between the two, as both spread with movement.” When you're fighting a war, you want to know as much about the enemy as possible.

But it's easy, in the rush of crisis, to put in place surveillance tools without thinking about the long-term harm they might do. For governments looking to monitor their citizens even more closely, and companies looking to get rich by doing the same, it would be hard to imagine a more perfect crisis than a global pandemic. In China today, drones search for people without facemasks; when they are found, the drones' built-in speakers broadcast scoldings from police.

Germany, Austria, Italy and Belgium are all using data – anonymised, for now – from major telecommunications companies to track people's movement. In Israel, the national security agency is now allowed to access infected individual's phone records. South Korea sends texts to the public identifying potentially infected individuals and sharing information about where they've been.

Not all surveillance is inherently malign, and new tech tools very well might end up playing a role in fighting the virus, but Zuboff worries that these emergency measures will become permanent, so enmeshed in daily life that we forget their original purpose. Lockdowns have made many of us, sitting at home glued to our computers and phones, more dependent than ever on big tech companies. Many of these same companies are actively pitching themselves to government as a vital part of the solution. It is worth asking what they stand to gain.

An excerpt from:

<https://www.theguardian.com/world/2020/mar/31/how-will-the-world-emerge-from-the-coronavirus-crisis>

Upcoming Events

PHARMACAD – M. PHARMA / MBA ENTRANCE



Admissions Open For:

- GPAT, NIPER, BITS HD, ICT, Manipal Entrance, NMIMS. (2021 / 2022)
- CAT, CMAT, MBA CET, NMAT, SNAP, XAT etc. (2021 / 2022)

*Experienced Team of Industry Linked Professors *Extensive Classroom Lectures
*Career Counselling *Online/Offline Test Series *Certificate Courses
*Industrial Training/Internship Assistance

*SCHOLARSHIPS for MERITORIOUS Students

For FREE DEMO Lectures or Career Counselling Sessions
Branches : Dadar & Thane. Contact: 9833472166/9619573372
Pharmacad.mumbai@gmail.com www.pharmacad.in
BE A PART OF THE CHANGE. BE, TEAM PHARMACAD.

PHARMACAD GOES DIGITAL!

Prepare for **GPAT 2021 / 2022** from **ANY PART OF THE COUNTRY** With the **BEST INDUSTRY AFFILIATED TEAM OF TEACHERS.**

After **4 YEARS** of Successful **PHYSICAL TEACHING**,
We are pleased to announce our **ENTRY INTO THE DIGITAL DOMAIN.**

We announce **FREE VIDEO LECTURES** (Live and Recorded) till the end of
Lockdown for all the **STUDENTS ACROSS THE COUNTRY.**
Lectures to be conducted in **HINGLISH** to Break the Communication Barriers.

We are **PHARMACAD**, where **Each Child Matters.**

Recorded Lectures: YouTube Channel - Pharmacad Mumbai
For Live Lectures: Register On – 9833472166/9619573372
Website: www.pharmacad.in
Instagram: @Pharmacad_Mumbai



To contribute and for article specification connect with us on:
Email: pharmamagazine.shreenath@gmail.com
Facebook: Shreenath Pharma Magazine
Website: www.shreenathpharmamagazine.com