COVID relief work done by MAHAN trust from March 2020 till now:

• Hospital open 24 by 7 during last 12 months (except one week of compulsory quarantine by government). Treated more than 6052 patients in OPD, 691 patients in indoor hospital out of which **439 were serious** and treated in **ICU. More than 150 suspected (as there was no facilities for diagnosis for first few months) and >100 confirmed COVID** patients treated. **More than 36 severe acute respiratory distress syndrome** patients and two respiratory failure patients were managed on **ventilator.**
• More than 739 pregnant women and 498 +under five children poor tribal were given therapeutic food daily for 3 to 7 months.
• Family Food kits distributed to 500 families.
• Distribution of ~40000 fruits and Drumstick plants to poor tribal to prevent malnutrition and hunger.
• Free distribution of >13000 Masks to villagers and frontline health care workers.
• PPE distributed to frontline health care workers.
• Provided primary treatment to more than 19843 patients.

Intensive BCC were given to 2500 households from 33 villages.

• Health education of COVID in 83 tribal villages. It has reduced respiratory viral infections and COVID significantly as per testing of 305 nasopharyngeal swabs (NPS) samples tested in National Institute of Virology (NIV), Pune to know the causes of Pneumonia and deaths.
• Seven of our staff developed COVID while serving critical COVID patients. Our all hospital staff were quarantine for 7 days. Not a single staff has been demotivated due to fear of COVID and are serving poor tribal patients continuously.
• Government now officially accepted >300 COVID 19 positive patients in Melghat and approved COVID testing (Rapid antigen test) in MAHAN hospital and in govt. hospital of Melghat and daily collecting NPS for RTPCR in Melghat. We did advocacy for 8 months continuously.
Real time death tracking with verbal autopsy is going on.
Community engagement : meeting with important stakeholders of villages regarding COVID prevention have been arranged in 33 villages.
Two success stories:
1) One 68 years old poor tribal female patient was admitted in our intensive care unit. She was in comatose condition and was diagnosed as case of **Diabetes mellitus with severe hypertension with diabetic ketoacidosis with urosepsis with salt loosing nephropathy (? Acute tubular necrosis) with Hypokalaemia with Hyponatremia with severe Anaemia with hypoxia with encephalopathy with quadriparesis.** She was very serious and was treated with oxygen, Insulin, antihypertensive drugs, IV Fluids, antibiotics, Potassium and sodium, Iron and other supportive management. She was admitted in our hospital for one month. Due to poverty, her relatives did not take her to city for higher investigations and requested us to manage clinically in our hospital only. We accepted the great challenge and due to very meticulous treatment, she recovered and was discharged. During last 6 months, number of tribal patients suffering from diabetic ketoacidosis, sepsis and electrolyte imbalance with quadriparesis increased significantly in Melghat. It created doubt of Covid 19 in our mind and we investigated the women for COVID 19 though there was no fever or pneumonia. Result from one of the best govt. laboratories of India proved

that she had COVID 19. As relatives of patient were not ready to go to higher centres for COVID 19 test, we could not confirm it early.

2) **When there is will, there is way. :**

One 54 years old poor tribal male was admitted in serious condition in our infectious Intensive care unit. His diagnosis was Severe COVID 19, ARDS, Sepsis, Hepatitis, Hypoxia, Encephalopathy. He was put on oxygen and ventilator (non invasive) for 3 to 5 days and was given anti viral drug Remdesivir, Enoxaparin and steroid. Our staff treated with care, compassion and love for more than one week . There was danger of transmission of infection from the patient to staff. But no body refused to treat the patient. Due to dedicated efforts of our staff, the patient became normal. It would have cost more than 100000 Rs. In city. But we treated him in Rs. 500 because of donor like Mastek foundation etc.

Figure 1: Severe COVID 19, ARDS, Sepsis, Hepatitis, Hypoxia, Encephalopathy on ventilator.

3)When there is will, there is way:

One 72 years old female from a village of nearby district. was referred by one super speciality doctor to our hospital in very critical condition. On examination it was noted that she was suffering from cancer of abdomen with Covid 19 with cytokine storm with acute respiratory distress syndrome, Anemia and Hypoxia. She was provided all the necessary intensive treatment including high flow oxygen. After continuous monitoring and treatment, she got better and was discharged after 15 days. Now she is doing fine and can do all routine activities including long travels. It is very challenging to save such critical patient in the tribal hospital.

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Corona phobia leads to death of youth

Anil is a daily wage labourer from Melghat who worked outside for more than 6 months; he came back to Melghat 1 year back (February 2020). He all of the sudden developed high-grade fever, cough, cold and chest pain. Anil's brother took him to a private doctor in Dharni. The doctor at Dharni gave pain killers and IV fluids. Anil got some relief and he got discharged and came back home. Next day Anil again developed severe cough with haemoptysis, cold, fever and difficulty in breathing. Due to media

and other awareness efforts , people of Melghat were aware of Corona virus and Janata curfew was also ongoing on the same day. After noticing all the sign, Anil's brother was suspicious and took him again to Sub District Hospital, Dharni. The MO at Dharni checked and suspected that Anil might have signs and symptoms suggestive of Corona. Anil was badly struggling to take breath, SPO2 was only 50%. As the next referral center was Amravati which is 4 hours away and as Anil's condition was worsening doctors at SDH referred the patient to our MAHAN Mahatma Gandhi Tribal hospital. We at our hospital have already made arrangements for treating corona patient's with respiratory distress as we have ventilator facility. As Anil reached here and after quick history we immediately suspected corona and we wore our PPE and examined the patient. Thank god we had PPE or we could not have even imagined to go close to the patient. We immediately shifted the patient to Oxygen support and after few minutes, the patients' SPO2 was not improving. The respiratory distress was unbearable. Then based on travel history and signs and symptoms and severity of respiratory distress, we decided to do the emergency management and refer the patient. As per government orders, the suspected corona cases with respiratory distress should be referred to District hospital, Amravati. By then as Anil was on ventilator his SPO2 was 70% and he was feeling better. Dr. Ashish Satav and our whole team, was continuously monitoring patient and he had taken all precautions not to **spread** infection to any health staff as well. When Anil felt little better we did ECG and observed left atrial enlargement and left ventricular enlargement. He might be having Rh. Heart disease with MS, MR. Due to history of IV fluids, we came to conclusion that he had pulmonary edema due to fluid overload and ARDS. Due to ventilator support Anil was becoming stable, signs of pulmonary edema/ARDS subsided significantly and SPo2 became 96%. As there was not corona testing facility at Melghat we had to refer the patient to Amravati. Thanks to government for immediately arranging 108 ambulance. Dr. Ashish sir himself shifted the patient on the ambulance ventilator as the accompanying doctor in 108 ambulance was not aware of ventilator management and there was no PPE. The moment Anil left from our hospital we were left with so many questions and then we realized that Melghat had very less time to fight against corona or non- corona respiratory distress cases. Anil reached safely to Amravati district hospital and was put in isolation ward. But next day, Anil died. His Corona test was negative. **If his Corona negative status could have been diagnosed in Melghat only, then the patient would have received ICCU care in Amaravati and he could have been saved. A great loss to family, community and nation.**

Major question arrived in our mind that, the people of Melghat who work as laborers in metro cities and who are already affected due to lockdown and ongoing crisis, is it fair to send them so far just for the sake of Corona testing. Patients who are already in serious condition can lose their life due to travel through mountains of Melghat and lot of travel time. We are not sure, how many of these kinds of deaths of non-Corona patients would happen due to corona panic and lack of testing facilities for Corona in Melghat?

Even though we as doctors are ready to treat patients, we don't have enough man power, advanced health care facilities and transportation to handle it. If we will have a

large-scale outbreak like the current corona virus, is it possible to send all the suspected cases in ambulance to Amravati? Without proper diagnostic facilities physicians are also panic to treat cases, as ultimately the doctors are also at risk of infection. On top of this, even if the patient is sent to Amravati and unfortunately if the patient dies it is such a struggle to bring the dead body back to Melghat as the ambulance service will cost huge sum to bring the body back. A person who has only 10 rupees in his pocket can only understand how hard it to bring the dead body back to home. This is also one of the reasons why people from Melghat refuse to go that far however serious the health condition is. If there will be a corona testing facility in Melghat, we will refer only confirmed COVID cases to Amravati and other patients can be saved. It is time for all of us to think about fair distribution of resources with first priority to be given to tribal and hilly regions as people here are already highly vulnerable due the other factors.

As Melghat is difficult to access, hilly, forest, tribal area and no preexisting advanced healthcare infrastructure, poverty, lack of awareness, very high migration of laborers and scarcity of hygienic living condition, it might turn to a real disaster if there is an outbreak of COVID in this region.

So it is my sincere request to government to immediately start Corona testing facilities to prevent non Corona deaths due to panic of Corona and unnecessary referral. It will also help to quarantine confirmed Corona cases in their home itself and prevent explosion of bomb of Corona spread.

At the end, I am thankful to our whole team for treating the patient wholeheartedly with taking risk of self infection.

Dr. Vipin Khadse.

Future plan:
a) Randomised control trial to reduce COVID deaths and prevent COVID in few villages of Melghat.
b) Prevention of COVID and its deaths in 320 tribal villages of Melghat.
c) Continuation of above interventions as done before.

Dr. Ashish Satav
President, MAHAN trust.