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How is medical machinery preparing to tackle increasing numbers?

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With the pandemic raging through the world, healthcare services have been stretched beyond limits. Some countries did get a chance to plan a bit, but many were not lucky and just had to deal with the Tsunami of cases.

In reality, the preparedness for medical machinery is based on three important aspects - infrastructure which included space, equipment, availability of diagnostics, medicines, etc. The second aspect is healthcare professionals, nurses, doctors and paramedical staff. The third aspect is to have a plan for surge capacity. This is often not considered when infrastructure and manpower planning is done. The usual surge is considered to be 10% - 20% of normal patient flow; however, a pandemic throws a spanner into this plan within a matter of few days.

So how is the medical machinery dealing with COVID currently, and what action plans are being put in to deal with surge in patients? In situations like this, both public and private healthcare providers need to team up. Infrastructure building needs to be identified like using open areas in hospitals, stopping non-essential work e.g. routine health check-up areas, cosmetology, stopping non-urgent surgeries. Also, infrastructure needs to be identified outside hospital premises, taking over community centers, large halls etc.

The next step based on the maximum need to make the machinery available. In the COVID 19 pandemic, majority of patients will need three type of beds; most will be having a mild illness hence they would need a bed to be cared for, and to maintain social distancing norms. They are low acuity beds, which need minimal staffing as most patients are self- caring. The second is those who have mild to moderate symptoms, co-morbidities, elderly, they will need hospital beds but are not sick enough to be in ICU. Around 10% of these hospitalized patients will need intensive care beds, which are sparse and highly labor intensive, and need expert staffing.

With the current scenario need for low acuity beds has increased exponentially, hence hospital areas which can be converted to these simple wards are been used, along with that several places in community like halls, apartments buildings, sports centers, etc. have been converted to look after hundreds of such low acuity patients. Unfortunately, this is easier said than done. The reason being, for most patients the very thought of not been in a hospital, but instead being in community-based care is overwhelming, secondly the patient selection needs to be precise so that no patient who needs higher level of care shall be admitted here. Most cities and countries have been successfully able to create this infrastructure, including staffing them. But its utility has been suboptimal due to patient’s reluctance. This may result in hospital beds being occupied by relatively stable patients who could have been managed in community-based care. However, with repeated counseling, awareness, and strict hospital admission criteria, this problem can be mitigated.

The hospital beds poise a challenge, as it needs equipment plus manpower; if it’s an Intensive care bed then the challenge is huge as it is expensive, and most importantly trained professionals are few. Sourcing machines, looking at factories to ramp up production and getting them delivered on time is a very tough task, and here the surge capacity needs to be such that if at all levels surge happens, hospitals have some bandwidth to increase capacity within themselves.

The industry has roped in retired medical professionals, young interns and even final year students. Those who are above 60yrs of age are not on front line, but their experience is been used in planning, tele-medicine and help in research-based activity. Tele-medicine and remote monitoring devices are used extensively now. The remote monitoring devices allows patient monitoring without physical contact, which is a huge advantage as healthcare worker does not get exposed often to a patient. Tele-medicine allows expert care been available to a large number of patients, thus helping in care. This has helped hospitals in managing their patients better.

The last and most important part, where the infrastructure collapsed, but seems to be just improving is on safety of frontline staff. Personal Protective Equipment (PPE) have been in extreme shortage, indiscriminate use by people who did not need it, low stocks compounded by low production, exposed several on the frontline. The most important piece of PPE being the N95 mask and eye shield are now being reused, unlike ever before. Protocols have been made for safe use of mask and shields for same individual so that not only does the stock last, but also more healthcare professionals who will be working on frontline will have access to it.

Overall, the industry seems to be stretched to core currently and it will change the very face of healthcare from here on, even when this pandemic blows away.

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