



EM CASES SUMMARY

Episode 138 COVID-19 Surge Capacity Strategies

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COVID surge capacity

Definition of surge capacity

Surge capacity is the ratio of patients to medical beds, staff and consumable resources.

In a healthcare context, a disaster is defined as the need that is being put on the system outstripping the ability to deliver. Surge capacity is the ability to house and treat patients above the standard volume.

The COVID surge capacity problem explained by Hugh Montgomery in this video

4 methods to increase capacity

1. Decreasing demand
2. Establishing alternate care facilities

3. Minimizing resource consumption by admitted patients
4. Expanding bed capacity

1. Decrease demand in the COVID pandemic to increase capacity

Divert patients to alternate facilities

Diverting patients away from the ED can be done in many ways. For example, **public messaging** to advise patients not to present unless completely necessary. Patients who do present unnecessarily to EDs need to be diverted to alternate facilities. These facilities need to be established in the community.

Discharge ALC patients to any facilities that can house patients and have beds available

Decreasing demand can be done by decreasing the number of patients who are currently in the system. Patients awaiting discharge for other types of care need to be transferred to another facility that can house the patients. Families often want their loved ones to be in a nursing home near them which is sometimes not an option during this time.

Defer all nonessential care

This can include elective operating rooms and clinics for things that are deferrable. The last segment is delivery of care in a non-

traditional way such as video consultations. Using technology to reach the patient; keeping them away from the facility. Patients should not come to the ED for COVID screening, particularly if the patient is asymptomatic. It is important to only come to the ED when the patient thinks they need immediate help regarding their sickness. Coming to the ED can expose patients to other illnesses and puts them at risk. Contact public health, go to a walk-in clinic or see a family doctor, especially if it has been something that has been going on for quite a while.

Deliver care in non-traditional ways that keeps patient away from hospital (video consultation)

2. Establishing alternate care facilities to increase capacity

In medical and paramedical institutions (old age homes, mothballed hospitals, field hospitals)

In non medical facilities (hotels, dormitories, public spaces)

There are two types of facilities. One is out of the hospital, and one in the hospital. Facilities out of hospital must be places where care can be delivered. Other places such as acute hospitals and public places can also be used.

3. Minimize resource consumption by admitted patients to increase capacity

Controlled degradation of standard of care and rationing of care delivered in hospital to preserve resources

The key concept is delivering the care that the patient needs where they need it, but not more or less. A patient should not be in an isolation room if they don't need to be. An extreme example of minimizing resource consumption of admitted patients is caring for those who are more likely to survive over those that are less likely to survive. In Italy, there are not enough ventilators and hospitals are having to create extra rooms to use CPAP instead of ventilators even though CPAP increases aerosolized virus.

Prepare a care path ahead of time that will divert patients into alternate treatment plans. Do the ethical thinking ahead and make sure your process is clear and known

Document degradation care plans

Documentation on every patient of the the predetermined alternate care plans during the COVID crisis will serve as a layer of comfort and protection for any potential legal action or patient complaints.

4. Expand bed capacity

Establishing treatment areas in unconventional locations (includes staffing and equipment considerations)

Moving lower risk patients into areas that are not regularly used for care serves more room for the higher risk patients that need intensive care. Any place that has the room and enough privacy can be converted.

Expanding staff by enlisting support from allied health care and trainees, rapidly licensing and cross licensing

Look for trainees who are already at some level of training where they can start functioning independently or under some supervision. Trainees can be members of allied healthcare, physiotherapists, dentists, retired physicians etc.

Protocolized treatment plans

It is essential to protocolize as much as possible. Use preset orders for any test or treatment that does not require a physician at the bedside. For example, if a patient at triage requires an x-ray as per a protocolized treatment plan/preset criteria, a nurse has the ability to order it. This will increase efficiency and allow each health care provider to be spread across a larger patient load.

Physical layout of the ED – clean and dirty areas

The ED can be split into two distinct physical spaces which includes the respiratory illness space and then everything else. These can be referred to as the “clean” and “dirty” areas which are completely separate and the staff in each one are dedicated to only that specific area. There can also be specific areas for COVID screening, if necessary.

Pitfalls of alternate care spaces

EDs may have to be expanded which means that there are less resources in the non-traditional treatment areas. Alternate care spaces are usually not designed for this purpose. It is harder to work in these spaces and supplies/equipment are not easily accessible. We have safety measures in our usual design such as central monitors and alarms, but not in these alternate care spaces. We will need to employ a cognitive forcing strategy to augment safety checks in these areas. Staffing may not be the same people we are used to working with and staff may be doing tasks they are not used to. Keep the standard areas for your most acute patients and consider “the ward to hallway” method.