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Deploying a COVID-19 Surge Unit

Executive Summary

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Deploying a COVID-19 Surge Unit

Situation

As the COVID-19 pandemic continues to spread in the United States (US), healthcare is struggling to keep up with the increased COVID-19 diseased patients. The rate of transmission and detection is only beginning to tell the story of the weeks and months to come.

It was estimated that many states in the US began to reach capacity for Intensive Care Beds (ICU) beds in response to the COVID-19 outbreak at the end of March. This also results in a shortage of Medical Surgical (Med Surg) beds in all states expected to reach capacity by the end of May (O'Brien, 2020). *This shortage is expected to begin in early April.*

The New York Times (2020) reports that if only 20% of adults in the US *(stated to be a mild scenario)* are infected by the disease over the next six months, hospital facilities will need to add or free up between 100 – 200% of their now occupied beds. The New York Times commented the following about ICU beds:

> In places already short of beds, a situation that's challenging during a slow-moving epidemic could be catastrophic during a fast-moving one. Take, for example, the New York City suburb Hackensack, N.J. If the disease reached only 20 percent of the population over the course of 18 months, Hackensack would still need to increase its numbers of available intensive care beds 140 percent. In a much more dire scenario, in which the disease spread to 60 percent of the population over a year, I.C.U. capacity would need to surge 11-fold.

New York City is the epicenter for the outbreak in the US now because of the density of its population estimating another 140,000 residents to be stricken with the virus in the next week. It is predicted to happen in other high-density cities and states around the country, such as California, Washington State and Illinois quoting, "It's just a matter of time" (Feuer & Rosenthal, 2020).

The Center for Medicare and Medicaid Services has issued new rules and waivers that allow hospitals to operate services in locations outside for their building. This enables hospitals to quickly make accommodations to add additional beds to give care to the growing number of patients ("Additional Background", 2020). Many state governments, such as North Carolina, are doing or considering the same by suspending laws such as the necessity to obtain a Certificate of Need (CON) prior to expanding bed count (Reveille, 2020).

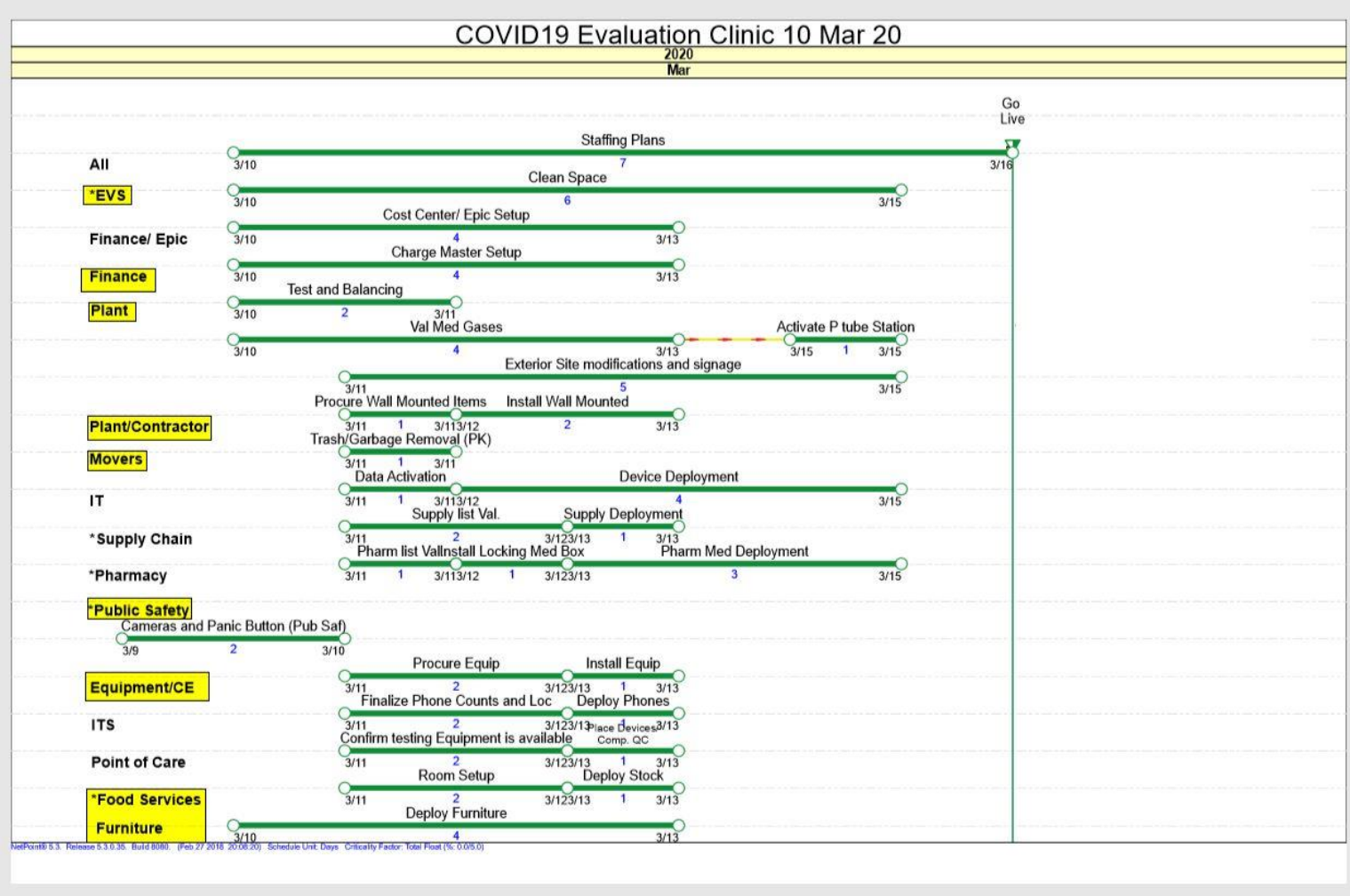
The increased need for hospital beds does not stop at finding extra space, it also reveals an increased demand for medical equipment and supplies. This results in necessary questions for a healthcare facility:

- **What capital equipment is needed? How do we get it? How do we manage backorders?**

- **What disposable and consumable supplies are needed?**
- **How do you plan, procure and deploy a COVID-19 surge unit?**
- **How do you convert a JIT inventory to bulk stock? And staff for it?**
- **What existing equipment/supplies onsite (or living at another location) is/are available for re-purposing?**

The usual project management process used to plan, procure and deploy new hospital space has to be greatly modified to accommodate the current challenges such as condensed timeline, limited space, supply shortages, staffing shortages, intensified infection control protocols and separation of different patient populations **(Appendix A)**

Appendix A



Design

The first determination will be the number of surge beds needed. Take advantage of industry research and trends of regions and cities similar in demographics. For many regions, it is as simple as knowing what space can be modified and adding as many beds as can be accommodated.

The available space for the surge unit must be determined. Where are areas that can be used to house new beds? Do these areas have the basic architectural requirements needed to operate the equipment? Included is a report with the requirements for the basic equipment and supplies needed **(Appendix B and C).** This listing can be used to evaluate the space. Most of the needed equipment will only require an electrical plug. For some pieces to be at full functionality, data drops are recommended, but not necessary.

It is best to choose an area that already has headwalls or wall outlets for medical air, oxygen and suction. If this is not possible, develop a plan to provide portable air, oxygen and suction. This is also true of exam lights. If the space does not have overhead exam lights, mobile units can be brought in as needed.

Once a space has been determined, it is time for the condensed planning process.

Procure

An inventory of available equipment must be obtained from your facility. It is imperative to know what is at your facility and other facilities in your network in order to plan where equipment can best be deployed and re-used. Procuring certain pieces of new equipment is difficult at this point, so having a re-use plan is the best way to use your existing assets before new equipment is procured**.**

Once it is known what is on hand, fill in the gaps. Using the equipment list, determine what is still needing to be procured and the quantities to prepare for full occupancy of the surge space(s). It is important to begin with the manufactures and models that are typically purchased or are a part of the standards for the facilities. Keeping equipment as consistent as possible will help with patient safety as the staff is already trained and familiar **(Appendix B).**

As certain kinds of equipment are becoming increasingly scarce, facilities may require some pieces to be purchased outside of the standards. Facilities may also require procurement alternatives such as leasing, renting or using refurbished units.

It may also be necessary for equipment alternatives to be purchased, such as cots in the place of beds. More and more alternatives are being offered as available equipment quantities are reduced. It is important to be aware of the alternatives available should there continue to be a shortage on some equipment.

Once purchase orders have been issued, it will be imperative to keep in contact with vendors as items will ship when available and these lists change daily. Be sure to know where the order falls on the wait list, current lead times and expected delivery as it may change daily.

When items arrive on-site for deployment, there should be an infection control protocol developed for moving the equipment into the spaces. The number of vendors entering the space needs to be minimized.

If new equipment is purchased that is new to the facility or any of the staff members, training may be needed. Many manufactures and vendors are offering virtual training where possible to accommodate the changing needs due to the virus.

Conclusion

Th COVID-19 pandemic is becoming more prevalent in Middle America. It is expected to hit the peak in many cities with larger populations within the next week (Noach et al., 2020). It is imperative to begin preparing the cities and towns where there is time before the peak comes. These are areas that will have more difficulty procuring equipment and supplies as they do not have the same amount of resources as facilities in larger cities. Although it is estimated that the peak for needed Med Surg and ICU beds is in the middle of April, a bed shortage may persist through June 2020 (“Covid-19 Projections”, 2020). The opportunity to be proactive has passed in many communities. But for many in the middle of the country, there is still time.

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