



Temporary Compliance Options for Code Modifications, Alternate Care Sites, and Facilities Related to Health Care

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One of the challenges related to the current pandemic in the United States is the temporary loss of the normally formalized, structured, and robust application and enforcement of building, fire, and life safety codes to the health care infrastructure. The situation has made even the strongest supporters of these safety codes understand the need for temporary, alternative compliance options to support the new health care landscape.

Under normal circumstances, how we operate is based on essential codes and standards from the National Fire Protection Association® (NFPA®) including NFPA 99, *Health Care Facilities Code*, and NFPA 101®, *Life Safety Code*®. These critical documents are formally adopted and enforced at the federal level through the Centers for Medicare & Medicaid Services (CMS). As a result, state health care agencies and private accrediting organizations structure their enforcement and accreditation processes to verify compliance with not only these two NFPA codes but also the host of documents from NFPA and other standards developers that are referenced within them.

ADJUSTMENTS TO REGULATION

In the last three weeks of March 2020, CMS suspended some of the normally mandated life safety code and emergency preparedness surveys at acute care hospitals, long-term care facilities, and ambulatory health care occupancies, among others. This survey suspension criteria allows health care providers to focus on dealing with the influx of new patients and devising means and methods to provide an adequate number of beds to treat patients who are specifically diagnosed with the COVID-19 virus. In addition, as a result of the public health emergency that has been declared at the federal level, strict adherence and compliance with the usual code requirements, such as those found in the formally adopted 2012 editions of NFPA 99 and NFPA 101, are being set aside. The reality is, they must be set aside as the need to manage and treat patients and protect health care workers has come to compete with and, at times, conflict with requirements for protection from fire – with some caveats.

In her remarks at the Coronavirus Task Force briefing on March 30, CMS Administrator Seema Verma summed it up best when she stated,

“In a time of crisis, regulations shouldn’t stand in the way of patient care. And there are several components to our announcement today, but the first one is CMS’s “Hospitals Without Walls,” and this is going to allow hospital systems to create new treatment sites outside of their facility to expand capacity and be able to safely separate patients that are infected with the coronavirus and those that are not.”

This initiative to increase capacity not only includes purpose-built hospitals, but it also allows for the use of nonhospital buildings and spaces to be used for a range of services, including patient care and quarantine sites for patient observation.

The CMS announcement also requires nonhospital buildings to be approved by the state while also working to ensure both the safety and comfort of the patients. The current and ongoing models for this include the use of hotels, motels and dormitory spaces, and the conversion of large open facilities, such as convention centers and arenas, to serve as temporary environments for providing health care under these extreme circumstances.

NEW FOCUS ON EQUIVALENCY CLAUSES

These changes and challenges must consider the options to preserve a level of safety, and they must come in the form of modifying the infrastructure in existing hospitals to allow for patient treatment in areas and spaces that might not necessarily have been designated or designed for such use. CMS waivers allow patient rooms to be modified to meet the requirements for negative air pressure environments that are generated using a HEPA-filtered negative air pressure machine. In some circumstances, equipment is installed in the corridor in a purpose-built anteroom or vestibule immediately outside of a patient room. This obviously cuts into the minimum corridor width and space that codes usually require, but it is the type of element that authorities having jurisdiction (AHJs) will need to consider to ensure that the proper level of medical care and virus containment can be provided. It allows for the installation of plastic curtains rather than the usual fabric curtains in multi-bed patient rooms where a single HEPA filtered negative air pressure machine can be used to create a negative pressure environment in the area occupied by each bed.

State health care agencies as well as health care provider organizations are now looking at what they have in front of them with regard to preparing for or responding to these patient surges and increases that are already happening. In Florida, for example, the state’s chief financial officer issued a directive on March 19 that instructed all local AHJs to “... partner with hospitals and healthcare providers to identify all equivalencies, modifications, and creative solutions afforded within the Florida Fire Prevention Code to accommodate the erection of temporary healthcare facilities.” That directive doesn’t just crack open the equivalency clause door, it essentially demands its use.

In other cases, the Federal Emergency Management Agency (FEMA) has received requests from states for assistance to develop alternate care facilities or sites,

which can take many forms. In general, these configurations include back-fitting hospital beds in existing large open spaces, such as exhibit centers, gymnasiums, or auditoriums. Other models include installing freestanding structures in large outdoor open spaces, such as athletic fields, while yet a third model includes converting hotel/motel/dormitory spaces into temporary health care occupancies.

Each one of these configurations presents unbelievable challenges to designers, contractors, and, perhaps most of all, AHJs. In essence, there might be no realistic way to strictly comply with the requirements of codes like NFPA 101 or NFPA 99. However, it is important to continue to maintain the overall goals and objectives that these codes require to the extent practical and within reason.

The risk assessment process laid out in NFPA 99 allows the provisions of the code to be applied almost regardless of the environment into which its requirements will be layered. The goals and objectives contained in Chapter 4 of NFPA 101 provide the boundaries of the levels of life safety concerning protection of the occupants. With these provisions contained in each code, coupled with the equivalency provisions in Section 1.4 of each document, the designers, contractors, and AHJs have a way forward to help them determine how to best make things work and how to be safe within reason.

LOOKING AT STANDARDS OF CARE

In this new landscape, health care industry professionals report that, often, the goal of these temporary arrangements and configurations is to provide a “sufficient level of care” as opposed to the normal “standard level of care” that health care facilities typically strive for. That does not mean that life safety and fire safety can be set aside; however, it does mean that everybody has to determine how to be flexible, where there can be some elasticity in the code requirements, and where applying the equivalency provisions has perhaps never been more important.

The current circumstances fall into a realm that is also referred to as “crisis standards of care.” This situation is one that challenges physical space, staffing, available supplies, and the level of care being provided to patients.

For example, the individual patient spaces in some of these alternate facility configurations are likely to have characteristics similar to a tent structure. That is something that the health care requirements of NFPA 101 do not directly address. These configurations could not possibly meet the construction requirements that are typically applied or required by the code. However, Chapter 11 of NFPA 101 provides requirements with regard to the combustibility

and flammability of tent materials. Thus, AHJs can point to that type of provision with regard to walking the line of accommodating the necessary treatment physical environment and regimen and incorporating some level of fire safety and fire protection.

SPRINKLER SYSTEMS

Automatic sprinkler protection is an essential measure that has been required in NFPA 101 for many years in new and even many existing health care occupancies. While many of the large, open exhibit centers and similar facilities will likely be protected with automatic sprinklers, there is no straightforward or simple way to extend that protection into individual, enclosed isolation pods whether they are small individual tent structures (10 ft x 10 ft) that serve as the patient room or that are purpose-built and lined up in a row. One potential alternative to address fire protection in that scenario might be to provide smoke detection or, at a minimum, single-station smoke alarms inside each of those individual spaces to provide some early warning.

CHANGES IN PHYSICAL SPACES

Subdividing spaces to meet the requirements in NFPA 101 for maximum smoke compartment size is, again, not likely to be achievable in the convention center model. If the facility has a high ceiling, then perhaps there is some benefit to relying on that space to serve as an accumulation point for smoke. There will likely be a limited ability to provide the normally required fire-rated construction around some of the storage spaces or areas within the patient care areas. Once again, an option might be to use smoke detection in the spaces, a provision that is not normally required, to help offset the lack of fire resistance rated construction and sprinkler protection.

The hotel/motel/dormitory conversion might have some advantages given that the normal configuration of these facilities is a center-loaded corridor with individual rooms on each side. Corridor width in these occupancies, however, will be well under the 8-ft minimum that would normally be required for new construction under NFPA 101, but they are likely to satisfy the 4-ft minimum width for existing construction. In addition, many of these facilities will already be protected with an automatic sprinkler system. Some consideration should be given if that system complies with NFPA 13, *Standard for the Installation of Sprinkler Systems*, or NFPA 13R, *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*. If patients going into these kinds of temporary facilities are incapable of self-preservation, then some of the defend-in-place strategies might need to be considered, and using occupancies with full NFPA 13 protection is clearly preferable. Construction of

cross-corridor walls that can meet the fundamental requirements of NFPA 101 for smoke barrier walls might be considered in order to limit the size of the spaces to meet the 22,500 ft² limit that is required for smoke compartments in health care occupancies. It is also highly likely that a complete building fire alarm system, including smoke detection in common areas and single-station smoke alarms in individual sleeping rooms that might serve as the patient rooms, is already present in these kinds of facilities.

OPERATIONAL CONCERNS

Adjustments to normal staffing levels (staff-to-patient ratios) will likely be different in these circumstances, resulting in the same number of staff members having to assist a larger number of patients in an emergency situation, such as a fire. Medical staff will be operating in unfamiliar environments, such as convention centers or hotel environments, and will need to devise a basic set of emergency plans to address these items. Inspection, testing, and maintenance (ITM) provisions for key fire protection and life safety systems have to be rethought to focus on the essentials and basics.

MEDICAL GAS

The extremely high demand for ventilators will mean more people requiring oxygen. In hospitals, the existing piped medical gas system might very well be capable of providing for the demand. In any of the alternative care site arrangements, oxygen will more than likely need to be delivered via compressed gas cylinders. These sites will likely be challenged to meet the requirement in NFPA 99 to have no more than 12 Style E cylinders (300 ft³) outside of storage per 22,500 ft² of floor area. The provision of NFPA 99 on the proper transportation, securement, and handling of these cylinders will be even more important in these situations with much greater quantities outside of storage locations.

While this is just a small sampling of the elements and challenges that state and local AHJs are reportedly facing, it is important to remember that there are myriad other factors that have to be considered, including ventilation, environmental air temperature controls, plumbing, infection control programs, and utilization of specific medical equipment, components, and systems that are not typically used or found in these types of temporary environments. In addition, some type of provision will have to be made with regard to emergency power and the design of essential electrical systems for these temporary spaces — with a particular focus on any alternate care facility that will be managing ventilation-dependent patients. Those requirements based on NFPA 99 and NFPA 110, *Standard for Emergency and Standby Power Systems*, must be integrated into the planning process.

FUTURE COMPLIANCE CONSIDERATIONS

While there is no consolidated list of areas that will require equivalency or alternative approaches, NFPA is preparing a set of compliance options for consideration based on feedback from AHJs, officials at the state and local level, health care industry professionals, and other stakeholders.

NFPA is in contact with our various stakeholders that are currently facing these challenges. We are collecting information on common issues being faced in health care facilities throughout the country and ways in which the modifications to fire and life safety features and systems and the potential negative effects can be mitigated. While each situation will have its own unique variables, NFPA will be looking to provide more information about ways that facility managers, engineers, designers, AHJs, and others can assess the most common scenarios against what is normally required.

As we navigate the evolving situation with COVID-19, NFPA remains committed to delivering resources to help minimize risk and help prevent loss, injuries, and death from fire, electrical, and other hazards.

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