Medicaid Reimbursed Clinics vs. Private Practices
Infrastructure Differences
(Third in a Three-Part Series)


John W. Baumgarten Architect, P.C.

We have gotten a lot of positive feedback on the first two installments of our series comparing construction standards of Medicaid reimbursed Diagnostic & Treatment Centers (D&TCs) to those of private medical practices.

Our first issue focused on ADA compliance. The second installment discussed the programmatic space differences between D&TCs and Private Practices. In this third and final installment, we will examine what happens behind the walls and above the ceilings of a D&TC by taking a look at Mechanical, Electrical, Plumbing and Fire Protection requirements (MEPs).

In our second installment, we identified the Facility Guidelines Institute (FGI) "Guidelines for Design and Construction of Health Facilities" as one of the primary codes governing the design and construction of D&TCs. When addressing fire safety and environmental issues, FGI adopts certain national model codes by reference. The most important of these are the National Fire Protection Association family of codes (NFPA).

The lynchpin code is NFPA 101, "The Life Safety Code" which addresses exits and fire resistance. NFPA 101 then cross references other NFPA model codes which govern the design and installation of MEPs.

HVAC Systems

Let's start our MEP discussion with the largest component; Heating, Ventilation and Air Conditioning Systems (HVAC).

The most important distinction between HVAC systems in D&TCs vs. Private Practices is that you need to "change the air" more times per hour in a D&TC. This is obviously all about infection control as is the requirement for higher grade air filters to remove more undesirable elements from the air stream. The net effect of more air changes and better filters is in most cases larger equipment and duct work.

Another HVAC infection control measure is the requirement for return air ductwork vs. a return air plenum. In all ducted HVAC systems air flows from the unit to the spaces served via sheet metal ductwork then back to the unit. The air then passes through the unit's filters, then makes another trip to the spaces served and continuously repeats this cycle for as long as the unit is turned on. Approximately 1/3 of the air is replaced with new outside air each time it is recycled. There are two ways to "return the air" to the unit. The first is with sheet metal return ductwork.


John W. Baumgarten Architect, P.C.

John W. Baumgarten Architect, P.C.

The second and least expensive way is to use the space above the ceiling as a giant return duct referred to as a ceiling plenum. Most private practices utilize ceiling plenums. The FGI Guidelines do not permit the use of ceiling plenums in treatment areas. The philosophy behind this is that germ laiden air will be more rapidly and directly filtered/exhausted if it flows inside sheet metal ductwork. Additionally, plenums present a greater fire hazard since air moving through a large concealed space above a ceiling would "fan the flames" of a developing fire before occupants are aware of any danger.

In non-sprinklered D&TCs certain spaces need to be enclosed with fire rated partitions. Wherever supply and return ductwork pierces these walls a "fire door" known as a damper must be installed to prevent fire from spreading throughout the ductwork. These dampers have a spring loaded activator which snaps shut when a device called a fusible link opens at approximately 165 degrees fahrenheit.

Plumbing Systems

Most of a D&TCs plumbing systems are regulated by local building codes and energy codes. FGI/NFPA again focuses on infection control and public safety. Sinks in clinical areas must be fitted with a gooseneck type faucet where the water outlet is 5" above the sink rim. This is to prevent possibly contaminated water from being "back siphoned" into the public water supply. These same sinks must be fitted out with 6" long wrist blades to facilitate hands-free handwashing. In the alternative, foot pedal type controls may be used.

At the clinic's incoming water service, most jurisdictions will require a back flow prevention valve to prevent any potentially contaminated water from being back siphoned into the municipal water system.

Lighting

Although mostly controlled by local building codes, FGI/NFPA does dictate that emergency and exit lighting have an emergency power source. Fixtures with internal battery packs are permitted.

Power

D&TCs are required to utilize hospital grade power receptacles which have an additional ground wire for a higher degree of safety.

Fire Alarm

In most jurisdictions, D&TCs are required to have a master coded, addressable fire alarm system with a central station connection. This can add as much as $8 to $10 for square foot to a build-out as well as placing a significant regulatory burden on the approval process.

Sprinkler

Sprinkler requirements are dictated by local building code and depend on the height and size of a given building and what materials the building is constructed of. Sprinklered buildings have less stringent fire protection and exit requirements than un-sprinklered buildings.

High Rise Buildings

NFPA 101 defines a high rise as any building whose highest floor level is 75 feet or more above the level of firefighting apparatus (essentially street level). Unless you own the building and have deep pockets, try to avoid choosing a high rise as a site for your potential D&TC. NFPA 101 requires specialized fire alarm and emergency power systems for D&TCs in high rise buildings. Such retrofits are very expensive and most landlords will not entertain them.

It is important to note that some jurisdictions will allow a D&TC to be located on the ground floor of a high rise building without requiring these fire alarms and emergency power retrofits.

John W. Baumgarten Architect, P.C.
with HMD Interior Design

Well we have enjoyed bringing you this three-part series and hope it has helped to bring some clarity to what can be a daunting and intimidating process.

If any of our readers have any questions on this or any topic relating to health care design and construction, please reach out. It's what we do!