



May 2020

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Healthcare and HVAC in the Era of COVID-19: Best Practices and Lessons from the Field

Authors: Mary Beth Kingsley & Paul Ring

In the space of a few weeks, the world as we know it has undergone immeasurable changes. Our daily lives are altered, and for the HVAC trades in particular, key adaptations are taking place at a rapid pace to meet rising demand. At Shapiro & Duncan, our expertise in the field of mechanical construction includes a dedicated history in the healthcare field. Our team is adept at rising to new challenges and leveraging our experience to achieve new outcomes. This expertise has been put to the test recently, as hospital facilities are increasingly focused on converting available space to COVID-compliant rooms as demand rises with spikes in cases and hospitalizations.

Adaptations are Essential During a Global Pandemic

For project safety and to promote efficient execution, changes are necessary. What was once considered the 'norm' now requires a closer look to ensure the health of tradespeople, as well as the most effective use of tools, time, and materials. Specific modifications to HVAC setups, such as changes to negative pressure rooms and additional filtration measures are common adaptations being seen currently. These are part of the larger changes being made at the HVAC trade and industry levels to respond to the COVID-19 pandemic.

Key Changes to HVAC Project Executions

The HVAC trade sector, as a whole, is experiencing massive changes – as well as a wealth of opportunities for growth – in the healthcare sphere overall as the pandemic continues. Some particular areas where we are making concerted changes to prioritize health and safety while also maximizing effectiveness of project executions include the following:

/ About the Author /



Mary Beth Kingsley is a Senior Project Manager at Shapiro & Duncan, Inc. With 24 years of industry experience, Mary Beth now specializes in the development of multi-million-dollar complex healthcare facilities, institutions and university projects. In 2017, her team earned national recognition from Associated Builders and Contractors for excellence in construction on the United States Holocaust Memorial Conversations and Collections Center project. Mary

- *Personal safety measures*, including requirements to wear face masks/bandana coverings at all times on the job site and following PPE rules to align with healthcare facility policies. On sites without running water, temporary water and hand washing stations, with soap and sanitizer, are made available for use.
- *Proactive monitoring of employee health and symptoms*, including regular temperature readings and 4-5 health questions asked as required by healthcare facilities for daily job site access.
- *'Morning huddle' meetings with site foremen* to review project progress and status updates.
- *Changes to work hours and schedules*. Our job sites have recently shifted to four 10-hour days, in order to reduce overall exposure risk by 20% weekly.
- *Establishment of a communication and project management infrastructure* to effectively manage remote workforces and keep projects on track.
- *Accepting nuances in access rules at healthcare facilities, as well as navigating material lay-down requirements* to maximize time, space, and efficiency.
- *Utilizing containment bubbles for safety in ceiling work*. At Shapiro & Duncan, we use a portable bubble that creates negative air pressure. This captures and filters dust and contaminants to ensure they are not released into outside spaces and the rest of the building.

The Rise of Modular Construction to Fill Social Distancing Gaps

The HVAC field is also leveraging modular construction in greater amounts amid the COVID-19 pandemic as a way to fill a critical gap created by social distancing requirements recommended to 'flatten the curve' and curb the spread of illness. Modular construction brings with it a host of benefits, including:

- *The ability to decrease on-site trade presence significantly, increasing project efficiency* by reducing overall exposure risk and spread of illness.
- *Prioritization of trade health*, through the clean, safe, and controlled work environment it delivers, along with the required tools, equipment, and materials at each work station to accomplish key tasks.
- *Significant reduction in project schedules* due to the ability to accomplish production through multiple shifts.
- *Reduced costs to complete HVAC projects overall*, preserving the property owner's revenue stream.

Best Practices to Effectively Manage Commercial HVAC Projects

Delivering successful HVAC projects within the commercial healthcare space in the current climate also requires navigating resources, schedules, and activities to include job sites that may be shut down, partially occupied, or powered off.

For example, in a recent healthcare project, our team was tasked with replacing HVAC units on a hospital rooftop, including placing a new steel support structure there for the unit to sit on. The installation location was above the Neonatal Intensive Care Unit (NICU) unit of the facility, which required several additional considerations and planning measures to mitigate typical risks. These ranged from fire watch from within containment bubbles in the NICU ceilings during welding of the steel posts, to specific concerns associated with managing noise and vibration for the health of the babies below, and limiting shutdown and cutover times to bring the new unit into operation and maintain space temperatures.

Some other best practices to consider to maximize your success rate in commercial HVAC projects – both in a time of pandemic and otherwise, include:

- *Adjust outside air dampers* to allow more air into your system and modify your fan speed to increase your ventilation rate to provide more fresh air changes for the space.
- *Upgrade air filters to the highest MERV rating approved for your equipment* to increase the capture of small particles for healthier indoor air quality.

Growth in HVAC Opportunities Holds Strong

While the future of COVID-19 and its effects are unknown, growth opportunities are present and plentiful within the HVAC trades, particularly in the healthcare space. This time of pandemic has brought new considerations and required us to make adaptations in order to execute HVAC task orders effectively and safely, however, these changes, while difficult, have helped to usher in a new phase of evolution in the HVAC trade overall.

About Shapiro & Duncan

Shapiro & Duncan provides cutting-edge mechanical engineering and construction solutions – including design-build, fabrication, installation and maintenance services that promote sustainability at every stage of a building's life cycle. We are a third-generation family-owned business. For more information, visit www.shapiroandduncan.com.

Beth is a member of Women Building Washington and participates in the yearly "She Builds" event with Rebuilding Together Montgomery County, a non-profit that provides free critical home repairs to the county's most vulnerable residents.



Paul Ring is a Senior Project Manager at Shapiro & Duncan, Inc. With 20 years of experience managing large-scale commercial projects, he specializes in providing mechanical solutions for institutions, hospitals and school construction projects. Paul's work was recently recognized by Associated Builders Contractors Metro Washington and Virginia Chapters for Excellence in Construction on the Fannie Mae Headquarters project. In 2018, he partnered with Gospel Haiti and Shapiro & Duncan, Inc. and developed a technical training program. With a heavy concentration on welding, Paul was able to transfer his skills to the residents of Oriani Haiti to help them build up their communities.

Save 2020 Profitability

[Originally Published by HVACR Business](#)

Author: Ruth King

The old saying was “Cash is King.” Now, in this era of quarantines and stay-at-home orders, cash is even more important. Cash is now emperor!

Here are five ways you can generate and watch your cash now.

Revisit Tickler Files

Thankfully, HVACR is deemed an essential business and will become more essential as it gets hotter. You can work. Just do it safely!

There should be a list of work that customers said at the end of last year, “I think I will wait until next summer before I make those repairs.”

That is your tickler file. Contact those people by phone, text or email (many are responding more to texts than in the past) and find out whether they want the work done now.

Many people are home and want to get their systems prepared for summer now. There are others who are requesting that you move your maintenance to later this summer. Until you contact them, you don't know into which category they fall.

In addition, customers have declined repairs. A quick phone call to let them know you care is important.

You can gently remind your customer that the last time your technician was at their home, he mentioned additional work on the HVACR system. Your technician is available to perform that work safely and without contact if they want to go ahead with it.

Proposal Files and Quotes

Unfortunately, many salespeople give a customer a proposal/quote and either never follow up or only follow up once. Many times, the customer has not bought from anyone. They're waiting to hear back from a salesperson.

One of my clients laid off his salesperson and started going through his files. He made many telephone calls and within a day uncovered \$80,000 of work the customer said yes to ... Many people told him “we never heard back from anyone.” Follow up — even if the proposal/quote is old.

From a commercial perspective, many customers wanted the work done now when no people were in the building. It caused the least amount of disruption of their otherwise normal business.

Watch Your Cash

Log on to your bank account every day. Make sure there is nothing you don't recognize. Look at deposits, checks and ACH withdrawals. Do they make sense? If not, start digging.

The bookkeeper for one of my clients noticed two deposits, each less than \$1. He assumed the owner was setting up a new account and didn't think to ask him about it. The next day the bank called and asked whether they had authorized a \$50,000 withdrawal from their account! Obviously, they shut down the account immediately. If something doesn't look right, question it immediately.

New Ratio

/ About the Author /



Ruth King has over 25 years of experience in the hvac industry and has worked with contractors, distributors, and manufacturers to help grow their companies and become more profitable. She is president of HVAC Channel TV and holds a Class II (unrestricted) contractors license in Georgia. Ruth has written two books: The Ugly Truth About Small Business and The Ugly Truth About Managing People. Contact Ruth at ruthking@hvacchannel.tv or 770.729.0258.

Use this new ratio to watch your cash on a weekly basis:

Accounts receivable + cash
Accounts payable + credit cards

My old ratio, accounts receivable divided by accounts payable, is not as valid in these times. Now the amount of cash that you have and the amount of credit card payments owed, are just as important.

This ratio should be steady or increasing. If it is under one, you are in trouble because you will not be able to pay your bills. You need to generate profitable work and collect the payments for that work, to steadily increase this ratio. without profitable work.

Inventory is a Bet

This is especially true, especially in these times. You are using your precious cash to purchase items that you may not sell quickly.

Watch your inventory purchases. If at all possible, use the parts in your shop and on your trucks to complete service calls and jobs. Purchase additional materials only when you need them for a job or a service call. These purchases are not inventory. They go directly into cost of goods sold.

Your inventory days should be less than 30 days (Inventory days are 365 divided by inventory turns. Inventory turns are Annualized cost of goods sold divided by inventory).

Your shelves should be bare at the end of this pandemic!

Cash is no longer king — it is emperor. Watch it closely.

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HVAC Contractors Use Technology to Create Social Distancing During COVID-19 Crisis

[Originally posted by ACHR News](#)

Author: Ted Craig

Online tools help companies keep in touch with clients, staff

“Social distancing” went from a rarely used phrase in the United States to the basis for just about everything people do right now. But how do service providers like HVAC contractors practice social distancing when their work often requires entering people’s homes? How do they protect the safety of their employees and the homeowners? Contractors across the nation have been coming up with creative solutions, often by working with manufacturers and other vendors.

By now, many contractors have most of their back-office employees working from home. Some are keeping technicians from entering the buildings. Those that have staff in the office are keeping them as far apart as possible, in separate rooms with doors closed if possible. Many meetings are conducted using online teleconferences.

Sam Troyer, president of Comfort Zone Inc. in Cape Coral, Florida, found that the technology he invested in over the years is working as advertised. His salespeople and other office staff took their VoIP phones from their desks, plugged them in at home, and never missed a call. Bookkeeping and other critical software have all been easily accessed via the cloud.

Challenges remain, however. Troyer said he quickly learned the limits of online interaction. After a few emails or texts back and forth, he often finds it easier to just call someone.

/ About the Author /



Ted Craig is the new business management editor at The NEWS. Prior to joining The NEWS, he worked at a national trade publication for used-car dealers. The products are different, but many issues are the same, and he looks forward to learning about this new industry.

"You just don't realize that when you're in an office, sharing space, how many times somebody will walk by and off-handedly say, 'Oh yeah. Nobody has called Mrs. Smith,'" Troyer said. "Those conversations just don't happen unless you go out of your way to do it."

In some ways, making the transition in the office was the easy part. Fieldwork provides a basic challenge of maintaining the safety of both the technicians and the clients. Building trust with customers now becomes more important than ever. Ryno Strategic Solutions developed a "no-contact call" badge for HVAC contractors to use on their sites as a way to promote their commitment to social distancing.

"People are prioritizing who they do business with," said Paul Redman, Ryno's vice president of sales.

Contractors are trying out various digital tools to help them in this area. They are using videos to communicate with customers before arriving at the location and during the actual call. The customer stays in another part of the house while the work gets completed.

Technology continues playing a role once the work is done. Troyer said his technicians now send forms for customers to sign from one device to another. This creates no need for anyone to touch the same surface as another person. An email invoice is sent, and there is a link to enter payment information.

Some contractors worry their customers lack the tech savvy to conduct business in this way, but Troyer said even in his market, with plenty of older residents, this rarely presents a problem.

Of course, customers create as much a virus threat to technicians as technicians do to customers. There have been a number of reports of workers entering a home and then becoming infected. HVAC contractors attempt to screen customers as much as possible.

Staying out of the home entirely creates the safest environment for both technicians and customers. HVAC contractors are trying different ways to do that. Woodfin, an HVAC contractor in Richmond, Virginia, recently set up a video service to help customers make their own simple repairs.

Others are taking advantage of the technologies manufacturers have introduced in recent years to increase connectivity. This is an area both HVAC contractors and their clients have grown even more interested in during the past few weeks, said Brandon Chase, senior product marketing manager at Lennox.

"It wasn't something we anticipated would come to fruition in the way that it has," Chase said. "It has become a very important selling feature."

Troyer was a beta tester for the Sensi Predict product from Emerson. This proved fortunate, as Predict has been able to avoid any interaction for half the calls where one was installed. In the other half, it cuts down on the amount of interaction.

Still, most calls require some form of interaction. This makes safety gear extremely important. While many contractors have invested in personal protection equipment, including masks and gloves, their rush to implement its usage runs the risk of creating more problems than it solves.

That was the case for Radiant Plumbing and Air Conditioning in Austin, Texas. Sarah Casebier, Radiant's co-owner, said they deployed PPE to all their technicians but quickly found a serious problem.

"These guys don't know how to properly put on a pair of gloves and take them off," said.

This was actually creating a great risk of contamination. Casebier said it seems simple — everyone knows how to put on gloves. But if you haven't been trained in the use of PPE, you don't know the proper way to do it. Fortunately, one of Radiant's employees also works as an EMT. He worked with the company to put together a video on how to don and doff the safety gear properly.

Casebier said managers then had technicians demonstrate by Zoom that they could handle the equipment properly. Radiant went even further and created a virtual safety channel. The company also conducted an online Q&A for technicians and their families covering concerns about on-the-job safety.

"That Q&A session really reassured everyone," Casebier said.

Radiant has started giving people an option for customers to have sales calls by Zoom or Facetime. Customers have responded well, Casebier said. Some people still want face-to-face, and so they will

meet with them 12 feet apart outside.

Casebier expects some of these practices to continue even after the outbreak ends.

“There’s absolutely no doubt that some of the processes we’ve implemented are going to outlast the COVID crisis,” she said. “It’s painful to make some of these changes as rapidly as we are. We’re looking at things that would have taken us weeks or months to accomplish and getting them done in a couple of days.

“There are going to be significant enhancements and improvements for the business as a result and for our customer experience.”

Troyer hopes things don’t change too much. Like many in the HVAC industry, he values the human interaction aspect of his job.

“One of the things I love about this business is being able to get out and meet my clients and feel like I’m providing something of value to them and their families,” Troyer said. “A lot of that interaction has gone away. I’m hoping when this comes to an end, we can shake hands again and talk about each other’s families and not worry about passing germs.”

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