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HOW FOOD MANUFACTURERS HAVE RESPONDED TO THE COVID-19 PANDEMIC—PART 2

Six of the seven facilities assessed reported a "noticeable" or "significant" improvement in food safety culture behaviors of workers

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Small food manufacturers, defined as those with less than 500 full-time employees, have experienced significant challenges to operate and supply food during the COVID-19 pandemic. Federal guidance to protect food employees from COVID-19 was provided to U.S. meat and poultry processors before it was developed and relayed to seafood processors. To better support small manufacturers in Georgia, the University of Georgia Marine Extension and Georgia Sea Grant conducted free, onsite COVID-19 assessments at seven seafood processing and distributing facilities through the first five months of 2021. By compiling and adapting checklists developed from the U.S. Food and Drug Administration (FDA), the U.S. Occupational Safety and Health Administration (OSHA), and the U.S. Centers for Disease Control and Prevention (CDC), a comprehensive tool was developed to facilitate assessments. Completed assessment reports and recommendations, along with answers to a brief follow-up questionnaire conducted three to seven months later, are summarized in this article.

Manufacturers demonstrated remarkable adaptability to protect workers and avoid closing, despite the emergence of supply shortages and continually changing public health guidance. Except for three companies that temporarily suspended onsite inspections of (foreign) suppliers, the pandemic did not negatively affect the safety of seafood processed in or distributed by these facilities. Although only seafood facilities were assessed, information gleaned from this effort is relevant to any food manufacturer.

Partnering with Good Shepherd Consulting LLC, the University of Georgia Marine Extension and Georgia Sea Grant developed a tool to facilitate onsite assessments of seafood facilities. Part 1 of this article, published in the December 2022/January 2023 issue, gave an overview of the COVID-19 assessment tool design and the assessments performed at seven different seafood processing and distribution facilities in Georgia between January 8 and May 12, 2021. Part 1 also provided a deep dive on facility demographics, food safety checklists and programs employed at each facility, and efforts to prevent the introduction of COVID-19 into the worksite. Part 2 will discuss the assessments of the facilities themselves,

including engineering and administrative controls, as well as personal protective equipment. It will also discuss the post-assessment survey responses received from facilities and the recommendations made based on the assessments and responses.

Section E—Engineering Controls

Table E contains data for this section. Facilities were assessed on their engineering controls using six subparts:

1. Social distancing and physical barriers
2. Signs and markings to reinforce social distancing
3. Handwashing/sanitizing stations
4. Time clocks/shift changes
5. Breakrooms
6. Air circulation, heating, ventilation, and air conditioning (HVAC) systems.

"All facilities required workers to wear either cloth or disposable masks covering the nose and mouth while onsite (unless eating or drinking), and these could be brought from home."

All facilities established social distancing polices/practices and educated employees about the importance of staying at least six feet away from coworkers, and posted signs to reinforce that behavior. Four facilities already had sufficient spacing between workstations or were able to separate them by at least six feet. Three facilities could not appropriately distance workstations on packing lines, so facilities C and E installed plastic barriers between workers, and facility D was in the process of reconfiguring the entire packing area to allow more room between workers. Facilities B and D complained that signs and adhesive used to keep them on walls were not durable enough to withstand frequent cleaning and sanitizing, so they were difficult to maintain in processing areas.

When facility E expanded its operations to increase production, it added handwashing stations by reopening restrooms in previously unused space. None of the other facilities added handwashing stations, but six added multiple hand sanitizer stations, both wall-mounted and freestanding (some located near time clocks) to minimize crowding and maximize hand hygiene. Facilities C and F periodically supplied individual containers of hand sanitizer for employees to keep at their workstations.

Facility E replaced its existing four time clocks with touchless versions and added two more to minimize check in/out times (5 seconds or less) and crowding. Facility D already had touch-free time clocks. Several facilities added hand sanitizer stations near touch-required time clocks and instructed workers to use sanitizer before and/or after clocking in. Four facilities (A, B, F, and G) did not need to stagger work shifts because of small numbers (20 to 63) of employees. Facilities C and D implemented staggered shifts/arrival times to avoid

overcrowding, while facility E's routine pre-pandemic operations included staggering arrival times over 4.5 hours.

All facilities strategically positioned tables and chairs, wall signs, and table markings to enforce social distancing in breakrooms. However, facilities B and C reported that employees frequently rearranged or added chairs back (rectangular tables with fixed bench seats can solve this problem, although employees can still disregard markings). Facility E added three new breakrooms (one indoor and two covered outdoor areas) to accommodate social distancing. This same facility added clear plastic barriers on small round tables in an existing small breakroom that could not accommodate large tables. Facility D temporarily added an outdoor break area, but the canopy cover kept blowing over, so it was removed. Facility B repurposed unused office space into a breakroom.

No facilities used hard-mounted or personal cooling fans at workstations. Facilities A and B (both with ≤ 25 workers) had not consulted with HVAC engineers or checked their HVAC systems to ensure adequate air exchange and filtering to prevent the spread of COVID-19. Of the remaining five facilities, two (F and G) contracted with outside companies to service their systems on a regular basis, but did not know air turnover/fresh air exchange rates or minimum efficiency reporting value (MERV) of mechanical air filters. A MERV of 13 or higher is recommended to minimize transmission of airborne viruses.[8,9,10] Facilities C, D, and E had their HVAC systems evaluated and made changes to improve ventilation in certain areas. Two (D and E) knew the MERV of their mechanical air filters; E used filters with MERV 13 or higher, while facility D could not use filters above MERV 8 in its processing area because airborne particulate matter from dry ingredients clogged filters. Two facilities (C and F) added portable air purifiers in non-processing areas.

TABLE E. Engineering Controls

Facility	A	B	C	D	E	F	G
Establish social distancing policies and practices	Yes (√)	√	√	√	√	√	√
Configure work environment and position workstations so employees are spaced ≥ 6 feet apart	Workers properly distanced, but assessors suggested diagonal placement across from each other	Distance between fish processing workstations increased	Repositioned workstation in repacking area	Possible everywhere but packing room; reconfiguring facility to add new processing line and will add ≥ 6 feet between workers in packing room	Except for packing line room, all workstations already ≥ 6 feet apart	Repositioned desks in office; spread out five fish processing worksites	Some office staff relocated to test kitchen area and conference rooms
Add physical barriers between workers if cannot maintain at least 6-foot spacing	Not needed	Not needed	Added barriers in repacking area, even though spacing was adequate	Not possible at time of assessment, but remodeling will solve distancing issue in packing room	Added partitions between workers in packing line room	Not needed	Added barriers in office area even though spacing adequate
Use markings/signs to reinforce social distancing practices	More signs needed and in workers' native language	No signs observed in fish processing or ready-to-eat product processing room	Signs observed in entryway and by time clock; floor decals added April 15, 2020	Observed everywhere, but difficult to keep signs/markings in frequently cleaned/sanitized food processing areas	Signs in common areas and breakrooms	Added tape on floor in office area and on breakroom tables; posted wall signs	Observed except corridor from office area to warehouse needs "single-file only" sign
Evaluate need for/add handwashing/sanitizing stations	No need to add stations because of small number of seasonal workers	No additional handwashing stations, but sanitizing stations added	Added sanitizer station by time clock; employees given weekly supply of hand sanitizer to use at their workstation	Added two sanitizing stations; one just inside and one outside entrance	Due to adding new processing line, unused restrooms reopened with handwashing stations; added 15 hand sanitizer stations	Added seven new sanitizer stations (five wall-mounted and two pump jugs in breakroom and entrance); provided small containers for workers at desks	Wall-mounted and standalone sanitizing stations added; switched to touchless soap and paper towel dispensers in all restrooms
Add time clock station(s) or stagger shifts to reduce crowding	Not needed; small number of workers whose shifts were already staggered	Not needed; small number of workers, but should consider sanitizing touch-required time clock	Staggered shifts to reduce crowding at clock	Shifts staggered and clock is touch-free by scanning ID badge so it avoids crowding	Replaced four existing clocks with touchless versions and added two new ones; normal operations include staggered arrival times	Not needed; only 39 workers and many office employees work from home	Not needed; small number of hourly workers; sign above clock specifies hand sanitizer use before and after touching

TABLE E Continued. Engineering Controls

Facility	A	B	C	D	E	F	G
Remove or reposition chairs/tables and add visual cues in break areas to support social distancing	Not needed; workers eat in their cars and don't congregate in break area	Chairs removed to promote social distancing, but employees added them back; grouped employees into cohorts with staggered break times to minimize crowding	After chairs were appropriately distanced, employees moved them closer than 6 feet apart	One person per table and visual cues/signs posted; staggered break/lunch times avoid crowding; workers individually clean/sanitize table after they use it	Markings for 1–3 people depending on table size; physical barriers installed on small tables	Tape on office floor and breakroom tables; signs posted	Not observed
Expand/add break areas	Not needed because of small number of employees	Repurposed unused office space to expand break/lunch area	No	Tried outdoor break area with temporary canopies, but did not withstand wind; pre-existing outside concrete picnic tables available	Added three new break areas; one indoors, two outdoors	Not needed because break times were staggered to avoid crowding	Not needed, as only warehouse workers use
Modify HVAC system and/or consult engineer to ensure adequate ventilation/filtration in work areas	Unsure of air exchange in two rooms where employees work; had not consulted HVAC engineer	Had not considered HVAC issues/adjustments in rooms with multiple workstations	Rerouted some ventilation; purchased standalone air purifiers for some higher-density areas	Because of dry ingredient usage, air filters > MERV 8 cannot be used in processing areas; will evaluate other areas to see if higher-MERV filters can be used; planning to install new air handling systems with remodeling	Added ventilation in one small office; use MERV 13 mechanical air filters	Contract with outside company to quarterly service HVAC system; not aware of air filter MERVs; added three mobile UV light air purifiers	Relied on HVAC system contractor for service; unknown what MERV filter is used; HVAC system is only two years old

Section F—Administrative Controls

Table F contains data for this section. Section F consisted of eight categories with which to assess facilities:

1. Social distancing
2. Review leave and sick leave policies
3. Hand hygiene
4. Face coverings
5. Communication and training
6. COVID-19 vaccinations
7. Cleaning, disinfecting, and sanitation changes
8. Other controls and changes.
9. To facilitate social distancing, five facilities (A, B, C, D, and E) already had or initiated staggered work shifts, arrival, and break times, while the other two (F and G) had small workforces or a large enough facility to not need those interventions. Sharing rides or carpooling was either discouraged or information was provided to workers on practices to minimize COVID-19 transmission when sharing transportation. Four facilities used posters and floor markings to remind workers to socially distance.

Five (A, B, C, D, and E) facilities altered leave practices or policies during the pandemic, while two (F and G) did not. Facility B paid workers if they contracted COVID-19 or had to care for infected family. Facility C changed its policy to provide two weeks of sick leave at regular pay if a worker tested positive, was hospitalized for COVID-19, or was required to quarantine. Facility D added COVID-19 sick leave for hourly workers, while facility E followed the Families First Coronavirus Response Act for paid leave and voluntarily extended it for three months. Although facility F had no formal leave policies, the owner encouraged workers to stay home if they had COVID-19 symptoms and assured them pay.

Five facilities increased the frequency of handwashing, Good Manufacturing Practices (GMPs), and/or personal hygiene training. All but one facility (A) added multiple hand sanitizer stations, either wall-mounted or freestanding, especially by touchable time clocks and facility entrances, and even gave containers to employees to keep at individual workstations. Facility G

installed touchless soap and paper towel dispensers in all restrooms, and Facility C installed new handles (that use the forearm instead of hand) on the inside of all restroom doors.

All facilities required workers to wear either cloth or disposable masks covering the nose and mouth while onsite (unless eating or drinking), and these could be brought from home. To minimize the use of disposable masks, facility D daily cleaned self-marked employees' used cloth masks, via laundry and autoclave. They instituted a unique system to separate used cloth masks by shift time and work area so they could be easily identified and returned to individual workers' cubbyholes located just inside the facility entrance. All facilities also provided disposable masks to workers while onsite.

Six facilities (A, B, C, D, E, and F) conducted training on COVID-19 and used diverse means to reinforce it, such as posters, signs, newsletters, emails, and town hall meetings. Five of these facilities did their own training, while facility D hired a third party to conduct trainings and provide newsletters. Facility G, which did not conduct training, relied on updates to corporate's COVID-19 action plan, which employees were required to read and sign that they understood.

Regarding COVID-19 vaccinations, six assessments took place before vaccines were widely available to Georgians younger than 55, so information gleaned from checklists was not uniform. However, assessments done just before and after vaccine availability indicated that facilities were already educating workers about and encouraging them to be vaccinated as soon as they were eligible. Approximately two months after Georgians 16 years and older were eligible, 80 percent of employees at Facility G had been vaccinated (refer to Table 3 for additional vaccination rates from post-assessment survey).

Georgia allowed COVID-19 vaccination by defined priority groups. Healthcare personnel and residents of long-term care facilities were first eligible to receive vaccinations beginning December 14, 2020.[11] On December 30, 2020, Georgians aged 65 and older could be vaccinated, along with law enforcement officers, firefighters, and first responders.[12] Adults 55 and older and people with disabilities and certain medical conditions became eligible March 15,[13] and ten days later, all Georgians aged 16 and older could be vaccinated.[14]

Due to the pandemic, six facilities (A, B, C, D, E, and F) began cleaning or disinfecting frequently-touched non-food-contact surfaces ranging from once per week to every two hours or immediately after use (such as in breakroom areas). However, only two facilities (D and E) compiled and used a facility-specific written list of these surfaces to ensure that they were regularly cleaned. Facilities C, D, and G hired third parties to either monitor the effectiveness of cleaning or conduct additional cleaning/disinfecting efforts. Facility G relied on workers to clean surfaces within their workstations, but no one was assigned to clean commonly used surfaces such as door handles, copier/vending machine buttons, refrigerator and microwave handles in breakrooms, etc.

Other controls and changes included facility E following its corporate travel restrictions dictating that employee domestic and international travel needed to be approved by the facility's crisis management team. Facility E also set up outdoor portable toilets for truckers so that they would not need to come inside the facility. Facility F received guidance from food industry councils that allowed them to relax food labeling requirements for home-delivered products and enabled them to stay in business after losing foodservice sales.

TABLE F. Administrative Controls

Facility	A	B	C	D	E	F	G
Promote social distancing	Verbally encouraged to stay six feet away from other workers; shifts were staggered pre-pandemic	Workers grouped into cohorts and shifts; breaks were staggered; posters in entries and hallways; carpooling discouraged unless in same family; workers educated about protocols for safe carpooling	Workers trained about social distancing, and floor decals added to reinforce; staggered shifts and breaks; poster at entry	Workers trained and production line supervisors monitor; work and break times staggered; floor markings/signs in breakroom, on stairs, at handwashing sinks, entry time clock; carpooling discouraged	Arrival times previously staggered by departments across 4.5 hours; color-coded helmet cohorts denote break times; six touchless time clocks to avoid worker clustering; floor signage everywhere in plant; educated workers on carpool safety during two meetings	Small workforce, so do not need cohorts; shift/breaks were staggered; workers educated and COO monitors compliance; workers do not carpool	Small workforce, so no cohorts or shift/break staggering needed; workers eat at work stations, in personal cars, or breakrooms; added two tables to test kitchen area to allow more space for breaks
Review leave and sick leave policies	No changes; if workers are absent, they are not paid	Does not penalize employees when on sick leave or caring for sick family; offers COVID-19 pay and bonuses; workers informed about these policies	Changed policy to provide two weeks (80 hours) of sick leave at regular pay if worker has positive COVID-19 test, is hospitalized for COVID-19, or is required to isolate/quarantine	Policy changed to allow hourly workers COVID-19 sick leave; existing HR hotline can be used for questions	Followed Families First Coronavirus Response Act (FFCRA) for paid leave and voluntarily extended it for three months through March 31, 2021; communicated this to workers via several meetings	Company began operating in July 2019 and had no formal leave policies, but owner encouraged workers to stay home if sick and assured them pay	No changes (workers receive 80 hours of sick leave annually and can accrue up to 180; if they run out of sick leave, they can use vacation leave); workers given bonus pay to stay well in 2020
Promote hand hygiene	New and returning workers always trained in GMP practices; disposable gloves used	Conducted additional handwashing training; hand sanitizing stations added at all entrances to and throughout facility	Conducted handwashing training with all workers plus regular reminders and signage; all workers receive weekly supply of sanitizer for use onsite; sanitizer station added by time clock; installed new handles (use forearm instead of hand to open) on inside of all bathroom doors	Hired third party to conduct trainings and provide newsletters; added two hand sanitizer stations outside and inside entry foyer; some trash containers were touchless; provided free gloves, masks at production area supply room, and from vending machines	Added two new handwashing stations (because of processing expansion) and 15 new hand sanitizer stations; lots of GMP and other personal hygiene training, as well as posting signs to reinforce training	Increased frequency of handwashing training; added seven sanitizer stations (entrances where workers sign in, breakroom, office, and processing areas)	Installed touchless soap and paper towel dispensers in all restrooms; installed hand sanitizer dispenser at time clock and other areas, and placed containers in breakroom and on office desks
Face coverings	Workers required to wear disposable face masks provided onsite	Workers required to wear face coverings, either their own or disposable masks provided onsite	Issued washable cloth masks and required workers to wear them beginning March 16, 2020; disposable masks also available onsite and employees can use other masks from home	Required; cloth and disposable masks are provided or can be brought from home; all cloth masks are laundered and autoclaved daily onsite, after shift end, and before they are reused	Issued cloth face masks on March 31, 2020 for voluntary use, mandatory two days later; disposable mask provided onsite, and workers can bring their own cloth masks; education given on daily laundering	Face coverings required; disposable masks provided onsite, or workers can bring/use their own	Required; workers can bring/wear their own cloth masks from home or use disposable masks provided onsite
Communication and training on COVID-19	Verbally educated employees about symptoms and how to avoid infection	Training on handwashing and COVID-19 (symptoms and reporting of them, sick leave policy, etc.) provided in English, but translated into Spanish and Vietnamese if needed; posters in entries and hallways	Frequent trainings and communications done in English, Spanish, and Korean; weekly emails sent with CDC and other COVID-19 updates; workers know to alert supervisors if they have symptoms	Hired third party to conduct trainings and provide newsletters (in Spanish and English) to relay policy/procedure updates; workers know to report symptoms and go/stay home (whistleblower system and HR hotline can be used to report sick coworkers); signage in entry and break areas	March–September 2020 weekly "town hall" meetings/trainings held for all workers on how to prevent COVID-19 at work and home, then as needed from October 2020 to March 2, 2021 assessment; workers fully informed about what to do if ill and sick leave policies; posters reinforce prevention efforts	Conducted COVID-19 worker compliance agreement training May 2020; informal "helicopter" personal hygiene training done through QWC's continual monitoring and correcting behaviors	Relies on corporate office, which issues updates to COVID-19 action plan; when plan is updated, workers must read and sign
COVID-19 vaccinations	Not available at time of January 8, 2021 assessment	Not available at time of January 27, 2021 assessment	Not available at time of February 10, 2021 assessment	Pursuing option of contracting nurse practitioner to provide onsite vaccinations when more workers are eligible to receive	Used CDC's essential workers vaccine toolkit to educate; provided info on where workers could be vaccinated when eligible; used testimonials from vaccinated workers to promote vaccine; investigated providing vaccines onsite when more workers eligible	Encouraged workers to be vaccinated as soon as they are eligible; as of March 17, 2021 assessment, a few workers had received vaccine	Encouraged all workers to receive vaccine when eligible; as of May 12, 2021 assessment, 80 percent were vaccinated
Cleaning, disinfection and sanitation changes	Initiated weekly cleaning of high-touch non-food-contact surfaces	Initiated four times daily cleaning of high-touch non-food-contact surfaces and break areas; disinfectant fogger used throughout facility after worker illness	Hired third-party sanitation crew to clean facility after business hours; added broad-spectrum virucide to disinfect high-touch (non-food-contact) surfaces once daily	Clean high-touch surfaces twice daily with written checklist; conducted daily ATP testing of these surfaces and hired third party to conduct monthly surface surveillance testing; hired third party to clean restrooms and office areas with virucide every two weeks; altered use of disinfectants for high-touch surfaces and ensured all were on EPA's List N; tables in break rooms are cleaned by workers after use	Developed written checklist of high-touch non-food-contact surfaces for each area and hired two new workers just to daily clean those surfaces and common areas (disinfect door handles/railings hourly, restrooms every two hours, breakrooms after every break); area used for town hall meetings cleaned after every meeting	Used disinfectant fogger in common areas any time worker reported illness; used sanitizer wipes on high-touch non-food-contact surfaces twice daily, but contact time for chemical in wipes unknown and no written checklist	Contracted with third party to use chemical fogger to disinfect restrooms every 2–3 weeks; workers sanitize their own stations twice weekly and breakroom areas after use

TABLE F Continued. Administrative Controls

Other controls or changes					Followed corporate travel restrictions (all domestic and international business travel must be approved by crisis management team); in April 2020, installed portable toilets to exclude truck drivers from coming inside facility	Company received guidance from food industry councils that allowed them to relax food labeling requirements for home delivery sales and stay in business when they lost foodservice sales	

Section G—Personal Protective Equipment (PPE)

Table G contains data for this section. Workers at all companies were required to wear face masks to prevent COVID-19 transmission, and some also wore disposable gloves when they handled food ingredients or products. Workers at facilities A, D, and E who cleaned or sanitized food processing areas were required to use additional PPE. It was recommended that facilities with workers who did not use PPE during cleaning and sanitizing operations and those who do, but had not recently conducted a hazard analysis for PPE, request that the company supplying their cleaners/sanitizers provide PPE training for relevant employees.

TABLE G. Personal Protective Equipment (PPE)

Facility	A	B	C	D	E	F	G
Personal protective equipment	Other than masks and disposable gloves worn when handling food products or ingredients, PPE required for sanitation crew only; recommended facility ask their chemical supplier to provide PPE training for sanitation crew	Other than disposable gloves worn when processing ready-to-eat and value-added products and masks, no PPE used; recommended that facility consult their chemical supplier to determine if additional PPE should be used during cleaning and sanitizing operations	Other than face masks, no PPE needed because facility is a distributor and does not process food	Facility requires that cleaning and sanitizing crew use PPE; workers wear disposable gloves when handling food; all wear masks to prevent COVID-19	Conducted a hazard assessment for PPE, but no new hazards identified; one worker composed and posted rap song video on social media demonstrating how to prevent COVID-19 (mask wearing, handwashing, etc.)	No changes needed; workers wear gloves when handling food or food-processing equipment; masks worn to prevent COVID-19	Facility should check with chemical supplier of new disinfectant for high-touch surfaces to see if worker using it needs PPE; other than face masks, no PPE needed because facility is a distributor and does not process food

Section H—Shared Living Spaces

Facility D was aware of a shared living arrangement, but it was not employer-sponsored. Facility C did not have workers sharing living arrangements who worked at the corporate headquarters/distribution facility (which was assessed), but was in the process of identifying workers at its eight retail stores who shared living arrangements with coworkers. Facility C was not aware that CDC had guidance for preventing COVID-19 transmission in these arrangements and was grateful to learn about it.

POST-ASSESSMENT SURVEY RESPONSES

A nine-question survey was developed to evaluate the effectiveness of the completed assessment tool and recommendations. Questions were answered via phone call or email within approximately three to seven months after the assessments were completed.

Responses to questions were collected via phone call or email 14–30 weeks after assessments (Table 3). Each facility received a completed assessment checklist and tailored recommendations, based on responses recorded using the Georgia assessment tool.

TABLE 3. Post-Assessment Survey Responses

Facility	A	B	C	D	E	F	G
Follow-up survey date/number of weeks between assessment and survey	Aug 9, 2021/30	Aug 3, 2021/27	Sep 2, 2021/29	Aug 3, 2021/23	Aug 11, 2021/23	Aug 2, 2021/20	Aug 20, 2021/14
Did you implement any of our recommendations?	Yes, most of them: daily worker screening, visual cues to encourage preventive behaviors, increased frequency of disinfecting frequently touched surfaces, diagonally staggered workstations, training on donning/doffing masks and proper use of chemicals, established connection with local county health department	Yes; added posters and completed additional training on donning/doffing masks	Yes; QWC designated in action plan, changed HVAC filters to MERV 13, compiled written lists of frequently touched surfaces in each area of facility	Yes; evaluated HVAC system and is making adjustments, but parts are in short supply due to pandemic; encouraging vaccinations	May not have prompted changes, but affirmed internal audit that they were doing everything within their power to protect workers and safety of food produced	No, pandemic waning when assessment conducted March 17	Yes, all food safety, hygiene, or COVID-19 training is documented; CDC guidelines for quarantined workers returning is included in action plan; will check with chemical supplier about different disinfectant for frequently touched surfaces
Did the checklist from our visit prompt additional changes in your operation?	Yes, frequent handwashing, social distancing and masks	Yes, but cannot remember which ones	Yes, but cannot remember specific changes	Only evaluating HVAC system	No, but checklist was helpful because it combined FDA, CDC, and OSHA recommendations into one assessment tool	No	No
How many workers are fully vaccinated?	3/6 (50 percent) of off-season workers	80 percent (rough estimate)	95–98 percent	Around 38 percent	42.6 percent (vaccination rate in county is only 29 percent)	Would not disclose	Greater than 90 percent
Did you provide onsite vaccinations or facilitate them offsite?	No	Yes, management helped non-English speakers make appointments to obtain offsite vaccinations	Yes, onsite vaccinations scheduled at corporate headquarters/distribution center and all retail stores	Yes, multiple onsite vaccination events	Yes, three onsite vaccination events and continually assist workers with finding offsite places for themselves and family members	No, but workers encouraged to be vaccinated	No, but if workers asked for help securing vaccinations, they were assisted
Do you still require workers to socially distance and/or wear face masks?	Yes, as not all are vaccinated	As of August 3 survey date, no; however, since cases increasing, plan to reinstate mask wearing and social distancing	Yes, face masks are still required	Yes; reinstituted face masks given most recent CDC recommendations	Yes; never stopped requiring masks or social distancing	No, but meeting scheduled to determine if mask wearing and social distancing should be reinstated	Yes, because Delta variant more contagious and even vaccinated workers can be infected
How many workers have tested positive for COVID-19 or displayed symptoms since our visit?	1 of 6 off-season workers (16.7 percent)	Would not disclose	Could not determine	5 of around 300 (1.7 percent)	14 of around 275 tested positive (5.2 percent)	None	1 (1.6 percent)
Are you aware if your area is having more or fewer COVID-19 cases, and how has this affected your COVID-19 control plan?	Yes; cases are increasing and we are much more cautious about limiting spread	Yes; increasing cases	Yes; increasing rates of COVID-19 and variant strains in county	Yes, surge of new cases; area is categorized with high transmission rate	Yes, facility is in area of second-highest infection rates in Georgia and caused them to be more vigilant in training about avoiding infections	Yes, increasing incidence of COVID-19 in areas in which facility is located and where workers live	Yes, increasing cases, so all workers still required to wear masks and social distance
Has the availability of workers improved or gotten worse since our site visit?	Worse; some could not come to work because of lack of child care	Slightly improved	Much worse; difficult to keep employees at work instead of home	Worse; in dire need of good employees and recently increased wages for all hourly workers	Worse; overall worker turnover and staff on sick leave have increased	Improved; able to increase number of workers	Worse, especially with drivers and warehouse staff
As a result of the pandemic, have food safety culture behaviors improved?	Yes	Yes, significant improvement	Food safety culture has noticeably improved; workers more conscientious about wearing masks, coughing, washing and sanitizing hands	No improvement	Yes, improved knowledge of why and how to wash hands, proper mask wearing, and more vigilant in doing so	Significantly improved	Yes, fewer workers sick with non-COVID-19 illnesses (flu, colds, strep throat)

Five facilities (A, B, C, D, and G) implemented some or all of the assessors' recommendations, and four also made additional changes based on their facility's completed assessment checklist. Facility A made the most changes, which included daily screening of workers, adding visual cues to reinforce COVID-19 preventive behaviors, increasing frequency of disinfecting high-touch surfaces, diagonally staggering workstations, training on proper use of chemicals and donning/doffing masks, and establishing a connection with the local health department. Facility C changed to higher-MERV filters, and facility D was in the process of making HVAC adjustments. Facility C compiled a written list of high-touch surfaces, while

facility G planned to check with its chemical supplier for disinfectants effective at killing SARS-CoV-2 with shorter contact times to use on high-touch non-food-contact surfaces.

As of September 2, 2021, the range of fully vaccinated employees in facilities was 38–98 percent, with a mean of 66 percent and median of 65 percent. ("Fully vaccinated" does not include booster shots, as they were not recommended or available during the project timeline.) Facilities C, D, and E provided onsite vaccinations, and Facilities B, E, and G helped employees find offsite locations and/or book vaccine appointments.

At the time of the survey, 57 percent of facilities continued to require face masks and social distancing; facilities B, D, and F had relaxed that policy, but were either in the process of reinstating it or were considering doing so as cases of the Delta variant began rising.

Five facilities (71 percent) knew or disclosed how many workers tested positive or had COVID-19 symptoms (ranged from 1.6–16.7 percent) since the assessment visit, and all were aware of the infection rate in their geographic area. Only facilities B and F reported that availability of workers had improved, while 71 percent said it had become harder to find employees. On a more positive note, six of the seven facilities reported a "noticeable" or "significant" improvement in food safety culture behaviors of workers. Facility G credited those behaviors to fewer non-COVID-19 illnesses and sick leave days.

COMMONALITIES AMONG FACILITIES

The assessments found a number of commonalities among the facilities assessed:

- No facility was closed due to the pandemic, although one took a two-week production pause in March 2020 to make adjustments to enhance social distancing
- Except for three companies suspending onsite inspections of their (foreign) suppliers, the pandemic did not significantly impact food safety activities
- Some facilities anticipated cleaning/sanitizing/employee hygiene supply shortages and tried to stockpile these supplies
- Due to vaccine hesitancy and difficulty in staffing, none of the facilities required that employees be vaccinated
- All required that face masks be worn at the worksite by staff, contractors, and visitors
- All relied on in-house contact tracing, but cooperated with local public health agencies if requested (state and local public health workers were overwhelmed and unable to assist with contact tracing)
- No shared living arrangements, except for one married couple
- Prior to the pandemic, no facilities kept track of carpooling workers; some facilities became of aware of them when one or more carpooling employees contracted COVID-19
- Since carpooling usually entails close contact (≤ 6 feet for ≥ 15 minutes), this is important for companies to know so they can educate workers about safe carpooling protocols and to better implement contact tracing
- Labor shortages posed difficulty for staffing
- All facilities either contracted for regular/continuous cleaning of frequently touched non-food-contact surfaces, added new staff solely dedicated to do that cleaning, or assigned this extra cleaning duty to existing employees

- None were high-density critical infrastructure workplaces
- All companies with a formal sick leave policy (five of six) modified it to ensure that both salaried and hourly employees were paid when they exhibited COVID-19 symptoms and isolated at home
- All but one company added wall-mounted or freestanding hand sanitizer stations
- Several companies switched to touchless soap and paper towel dispensers in restrooms and touchless time clocks.

UNIQUE PRACTICES/SCENARIOS

The assessments also uncovered a number of unique practices and scenarios among the facilities assessed:

- To reduce the use and cost of disposable face masks, facility D set up a system to organize cloth face masks just inside in the foyer of the only entryway/exit. Employees select their clean cloth face mask from assigned individual bins and doff them before entering the security area, where they are screened for COVID-19 symptoms. Before exiting the facility at end of their shift, masks are placed into communal shift "dirty mask" containers. Masks from each shift are laundered and sterilized in an autoclave onsite, and then placed back into individual employee bins. Employees are also provided with free disposable masks onsite if their cloth masks become soiled before their shift ends.
- Facility E repurposed unused space to add a new processing line and added one new processing day (from four to five 10-hour days) to meet increased retail demand for product. This was the only company to add handwashing stations, as they were in previously unused restrooms.
- Facility C operated eight ethnic-oriented retail stores (which employed an additional 650 employees), so assessment recommendations were applied to those facilities, as well as the assessed distribution facility.
- Facility C switched to hands-free door openers on the inside of all restroom doors at its distribution center and its eight retail stores.
- Only one facility, D, conducted COVID-19 (twice monthly) surveillance testing, but it was voluntary.
- A Facility E employee recruited coworkers to perform a rap song she composed, recorded, and posted, which became popular on social media. Coworkers danced and demonstrated practices that prevent spread of COVID-19.
- Facility F started operations in July 2019 serving only restaurant/foodservice customers. When the pandemic forced restaurant closures, the company pivoted to 100 percent home delivery to consumers, moving from three to eight delivery vans and from no social media presence to Instagram, Facebook, and Twitter accounts to reach consumers. The restaurant sales staff switched to taking consumer orders or managing production. The company also added temporary employees to answer consumer phone calls and drive delivery vans.
- Facility A did not process product year-round, but only seasonally.
- Facility E said the pandemic made its mission clear—protect families, protect the nation's food supply, and protect the long-term viability of the company.

DISCUSSION

Six assessments were conducted prior to and one after the widespread COVID-19 vaccination availability in Georgia. The two facilities with the highest vaccination rates also had a majority of Asian employees. In September 2021, the Atlanta Journal-Constitution newspaper reported that 81.3 percent of Asian residents in Georgia had at least one COVID-19 vaccine dose, versus 46.8 percent white and 43.7 percent black residents.[15] Then, in October, the same newspaper reported that 77 percent of Asian males ages 18–44 had at last one vaccine dose, versus only 38 percent of white males and 32 percent of black males.[16] Thus, cultural or ethnic heritage may be a factor influencing employee decisions to be vaccinated against COVID-19.

Two facilities had difficulty sustaining signage/markings on walls and floors to reinforce COVID-19 prevention behaviors (mask wearing, social distancing, frequent handwashing, etc.) in processing areas because of daily cleaning and sanitizing. Laminated signs and means of attaching them do not stand up to repeated exposure to soap, water, and sanitizers.

"Document the protocols put into place and when they are established, to track what works and what does not. A written COVID-19 control plan is best and recommended."

RECOMMENDATIONS

The assessment team compiled a list of recommendations, tailored to each facility, based on the assessments conducted. Some of the recommendations were generic to several or all of the facilities, as outlined below:

1. Since seafood and other food manufacturers are critical infrastructure, the assessment team strongly recommends a written infectious disease control plan with two parts:
    1. Disease control plan addressing concerns in 21 CFR Part 117.10(a), Subpart B: "Current Good Manufacturing Practices" and
    2. COVID-19 response and/or action plan (some facilities had components of a COVID-19 plan within their crisis management plans).
2. Document the protocols put into place and when they are established, to track what works and what does not. A written COVID-19 control plan is best and recommended.
3. Due to widespread COVID-19 vaccine hesitancy, it is important to stay constantly updated about where and when employees can quickly receive vaccinations near their workplaces or homes before they rethink and renege on their decision.
4. Vaccine hesitancy can be highly individualistic, which means a "one-size-fits-all" approach may not be effective. Give employees opportunities to express concerns to someone (supervisor, mentor, human resources manager) who will make time to respond in ways that are relevant and meaningful to each employee's apprehensions and fears.
5. Compile and maintain a written list of frequently-touched non-food-contact surfaces (e.g. door handles, light switches, microwave/refrigerator handles, elevator, vending machine and copier buttons, bathroom faucets, etc.) specific for each facility and area (bathroom,

breakroom, entryway/reception, common office space, warehouse, processing area) to ensure that surfaces are regularly disinfected by employee(s) or contractors designated with that duty so that no surfaces are overlooked.

6. Consult the U.S. Environmental Protection Agency's List N: Disinfectants for Coronavirus (COVID-19)[17] to ensure that any disinfectants used to clean or sanitize frequently touched non-food-contact surfaces are practical (i.e., they have short contact times of one minute or less).
7. Companies should keep track of workers that carpool together to be more effective at contact tracing, because transportation to and from work can be an extra means of exposure. Many facilities used video recordings to determine the close contact of COVID-19-positive workers within the facility, but transportation was not taken into account. A means to trace close contacts was important early in the pandemic when the world was learning how COVID-19 was transmitted.

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