

JDI ROUNDTABLE **ON MANUFACTURING** **COMPETITIVENESS IN NEW** **BRUNSWICK FORUM**



COVID-19 PROTOCOL AND CONSIDERATIONS **FOR NEW BRUNSWICK MANUFACTURERS**

Last updated May 12, 2020

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PROJECT TITLE

COVID-19 Protocol and Considerations for New Brunswick Manufacturers

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HOW TO CITE THIS REPORT

McRae, S. (2020). COVID-19 Protocol and Considerations for New Brunswick Manufacturers. Fredericton, NB: Atlantic Institute for Policy Research.

TABLE OF CONTENTS

- TABLE OF CONTENTS.....3
- COVID-19 protocol and considerations for New Brunswick manufacturers4
 - Introduction4
 - Context: Manufacturing in New Brunswick4
 - COVID-19 guidance and best practices.....5
 - WorkSafe NB guidance5
 - Additional guidelines for manufacturing and processing sectors7
 - Guidance for responding to COVID-19 cases10
- Case studies14
 - Re-opening protocols for manufacturing14
 - COVID-19 outbreaks in food processing facilities15
- COVID-19 safety in manufacturing and processing: key considerations for New Brunswick18
- Endnotes19

COVID-19 protocol and considerations for New Brunswick manufacturers*

Introduction

COVID-19's impact on manufacturing in Canada has varied from province to province. The country lists manufacturing as an essential serviceⁱ, but individual provinces have diverged in their interpretation of which manufacturing sectors should remain open. Quebec outlined a limited list of “priority manufacturing activities”ⁱⁱ allowed to remain open, while Ontario kept its definition of “essential” manufacturing operations broadⁱⁱⁱ. In its Mandatory Order regarding COVID-19, New Brunswick did not issue any command for manufacturers in any sector to close,^{iv} leaving it up to individual firms to decide whether they could implement adequate safety measures immediately. Firms that decided to scale down or suspend operations may now be looking to implement measures to allow them to resume or ramp up production.

This report summarizes examples of official and unofficial guidance and examples of best practices for manufacturers and processors, including case studies that demonstrates best- and worst-case scenarios for how production can resume amid the COVID-19 crisis.

We also acknowledge that many New Brunswick manufacturers and processing plants may not be technologically and financially equipped to adopt all of the existing best practices demonstrated by leading global firms – however, New Brunswick firms still need to ensure they are following the guidance of WorkSafeNB and the Chief Medical Officer of Health, as stated in the Mandatory Order. We therefore outlined the guidance issued by WorkSafeNB, and then summarize other resources for manufacturers, including both emerging best practices for larger firms as well as examples of how firms may respond when some recommendations aren't feasible.

Key themes that emerge, described in greater detail at the end of the report, include:

- **Adjust operations to allow for physical distancing and reduce contacts**
- **Employ active screening and other safety measures when physical distancing isn't possible**
- **Prepare for fast and thorough response to outbreaks**
- **Ensure clear and ongoing communication of expectations**

Context: Manufacturing in New Brunswick

According to NBjobs.ca, the manufacturing sector represented 10.7% of New Brunswick's GDP as of 2018,^v representing 31,300 employees. A large portion of those working in manufacturing were employed in small and mid-sized firms, with only 8.3% of those employed in NB's

* The information and guidance contained in the document is current as of the date listed on the cover page. Due to the rapidly evolving nature of COVID-19 and health and safety policy responding to the pandemic, this information is subject to change. Employers should ensure they are regularly checking official sources such as the Office of the Chief Medical Officer of Health and WorkSafeNB.

manufacturing sector working for firms with more than 500 employees. Meanwhile, 41.1% were employed by firms with 100 to 500 employees.

The size of New Brunswick manufacturing plants is an important consideration in determining the risk of an outbreak. On the one hand, fewer employees at a particular site not only reduces the risk of a sole COVID-19 spreading to hundreds of workers in a short timeframe. In some instances, it could also mean physical distancing may be easier to implement if floor space is sufficient.

However, many smaller New Brunswick firms rely on older equipment and labour-abundant processes. In some cases, physical space on the floor may be tight once equipment and a large number of assembly workers are accounted for. An important consideration for New Brunswick's manufacturers is that the vintage of the equipment may result in less "nimble" processes where reconfiguring workspaces to allow for physical distancing is not always feasible. A lack of computer-based operations, digitization or other information systems may also limit options for remote operations of some workers or ability to streamline production processes.

Top manufacturing sectors in the province include fish and seafood processing (2,200 people in 2018), wood, pulp, and paper processing (1,100 people in 2018), and food, beverage, and associated products processing (1,000 people in 2018). Across the Maritime region, fish and seafood processing companies have expressed concerns about starting work this Spring, citing worries about their ability to implement measures to prevent the spread of COVID-19 in processing plants, as well as uncertainties about the availability of the temporary foreign workers normally employed in this sector.^{vi} In New Brunswick, the lobster fishing season has already been delayed one month.^{vii}

As employers make plans for commencing operations while ensuring the safety of their employees, it is essential that New Brunswick manufacturers and processing plants have access to clear, sector-specific guidance for adapting workplaces to address the heightened health and safety requirement of the COVID-19 pandemic.

Below, we outline the mandatory guidance from WorkSafeNB and provide an overview of recommendations from other sources that provide greater detail regarding safety measures specific to manufacturing and processing sectors. We also highlight several case studies from around the world that demonstrate best practices as well as outbreak scenarios that highlight the importance of stringent and quick responses to COVID-19 outbreaks in the workplace.

COVID-19 guidance and best practices

WorkSafe NB guidance

All employers in the province are required by law to adhere to the guidance outlined in the COVID-19 mandatory order,* which instructs owners and managers of all workplaces to take all reasonable steps to ensure minimal interaction of people within 2 metres of each other, and to ensure infected people do not enter the workplace. Employers are instructed to follow the guidance of the Chief Medical Officer of Health and WorkSafeNB.

WorkSafeNB has published general guidelines for businesses operating during the COVID-19 pandemic.^{viii} Businesses operating in New Brunswick are legally required to take every reasonable step to adhere to these guidelines, which include steps to follow when physical distancing requirements are not feasible. Although WorkSafeNB has been updating its

recommendations with sector-specific guidance on an ongoing basis, as of the time of our writing it has not yet posted guidance for the manufacturing sector.

In general, WorkSafeNB applies the following hierarchy of controls related to COVID-19:

1. Physical distancing and hygiene recommendations per OCMOH guidance.
2. If physical distancing is not possible, installation of physical barriers.
3. If physical barriers are not possible, active screening is required. Enhanced cleaning and sanitation practices and appropriate PPE (such as non-medical masks) should be implemented. Interactions should be minimized as much as possible.

WorkSafeNB's guidance emphasizes the following steps:

- **Screening:** All workplaces must adopt a screening process for staff and visitors before they enter the workplace, which may consist of a self-screening guide.
- **Distancing:** Take every reasonable step to ensure minimum interaction of people within 2 metres of each other, including in vehicles.
- **Hygiene:** Ensure that proper hand-washing and enhanced sanitation/cleaning practices are enforced in areas where multiple people handle tools, goods, supplies, equipment or other shared items.

In cases where an employer cannot consistently maintain a two-metre separation between people due to essential work activities, WorkSafeNB requires:

- **Barriers:** Installing a physical barrier between workers, such as a clear plastic guard.
- **Active screening/temperature checks:** If installing a barrier between employees is not possible, all persons entering a workplace must be actively screened for symptoms of COVID-19:
 - The screening process must include temperature checks, provided a non-contact thermometer (i.e. infrared) is available.
 - In the case of unavoidable periods of close interaction with other persons, the active screening activity, including temperature checks, should be conducted for all employees at the start of each shift and repeated not more than every five hours thereafter. For personnel working 24-hour shifts, screening should be conducted on all employees a minimum of four times during normal waking or active working hours, spaced in intervals of not more than five active working hours.
 - Any person showing COVID-19 symptoms must not enter the workplace. Those showing symptoms mid-shift must immediately be asked to leave the workplace and dial 811 for instructions.
- **Record-keeping:** WorkSafe's return to work guidance states employers should keep visitor and employee logs for access points and rooms where physical distancing is not possible.^{ix} Employers may consider electronic records or control tracing applications as they become available.
- **Masks/face coverings:** WorkSafe's return to work guidance states face coverings are mandatory as an additional measure to protect employees, clients and visitors when workplaces are not be able to ensure two metres of physical distancing.^x The NB Chief Medical Officer does not recommend the use of N95 respirators or surgical masks by people who have no symptoms of respiratory infection (unless under isolation precautions

as directed by public health). The use of non-medical face masks and/or fabric face coverings is recommended in situations where physical distancing is not possible.

- If an employer requires the use of non-medical masks and/or fabric face coverings, a procedure must be developed and communicated to employees the information provided by Health Canada.^{xi}
- **Travel:** Every effort must be made to avoid having employees travel in the same vehicle for work activities. In cases where employees must travel together, employers may consider installing physical barriers in the vehicles. Employees travelling together should be actively screened per the above guidance. The employer may recommend that these employees further protect each other by wearing non-medical fabric face coverings, per the NB Chief Medical Officer's guidance. Each person must wipe down touched surfaces when exiting a work vehicle.
- **Risk assessment:** All workplace risk assessment practices as required by the Occupational Health and Safety Act must continue and any identified risks are to be mitigated as required by the Act.

Additional guidelines for manufacturing and processing sectors

New Brunswick manufacturers should first ensure they are compliant with the requirements put forth by New Brunswick Public Health and WorkSafeNB.

In this document, we outline some areas where the current WorkSafeNB guidance could be expanded upon with sector-specific recommendations for manufacturing and processing, including recommendations catered to New Brunswick's manufacturing sector, which is dominated by smaller firms that rely on older equipment and labour-abundant processes. Manufacturers seeking further guidance or examples of best practices may also look to publications from other sources, summarized below.

The Canadian Centre for Occupational Health and Safety (CCOHS) has released a document containing tips for manufacturers responding to COVID-19. CCOHS's document covers much of the same protocol contained in the WorkSafeNB guidance, while emphasizing the importance of **clear communication** about expectations and protocol for employees.

In addition to adjusting production outputs and schedules to reflect physical distancing and other health and safety guidance, CCOHS says employers should:

- Make sure workers know about the virus and how to minimize its spread;
- Set a clear policy for what is expected of workers if they get sick, have symptoms, or if an exposure is reported;
- Provide adequate information and training regarding sanitation procedures and safe use of PPE;
- Provide reminders about COVID-19 prevention, signs and symptoms; and
- Make sure workers are trained to work safely before replacing the duties of others.

The CCOHS document also offers some additional detail regarding procedures around **sanitation and disinfectants**. CCOHS offers recommendations for choosing a disinfectant of bleach solution and effective strategies for cleaning surfaces. Of note, it recommends creating a checklist of surfaces to be cleaned and recording when cleaning has occurred. The CCOHS document also includes protocol for effective use of disinfectants. GNB has also published guidance regarding sanitation and disinfection protocol^{xii}, which instructs workplaces to increase the frequency of cleaning and disinfecting high-touch surfaces. All surfaces, especially those general surfaces that are frequently touched, such as doorknobs, handrails, etc., should

be cleaned at least twice daily and when soiled. The GNB document references a list from Health Canada with acceptable sanitizers/disinfectants^{xiii}

Canadian Manufacturers and Exporters (CME) has published a guide to workplace social distancing best practices for manufacturers^{xiv}. It notes that current guidance on social distancing can be applied to most manufacturing work environments by altering routines to minimize close contact with others, such as limiting exposure to crowded places, creating a distance of at least two meters between employees, and ensuring that any worker experiencing symptoms or living with a person experiencing symptoms stays home, as well as those who have recently travelled.

Below is a brief summary of CME's detailed guidelines as they relate to "on the floor" activities:

- **General hygiene:** Add hand sanitizer stations to high traffic areas and mark a wait line six feet from the station to ensure appropriate spacing. Expand cleaning and disinfecting activities beyond eating areas. Consider making high traffic areas one-way. Consider doing the same for water fountains/stations.
- **Time clocks:** Employers should look at revisiting "punch in/punch out" procedures, evaluating whether it's necessary to use physical timecards, and whether arrival times could be staggered to avoid crowding.
- **Screening stations:** Manufacturers could set up entrance screening stations with a thermal imaging camera station or non-contact laser thermometers.
- **Workstations:** Where possible, manufacturers should adjust work areas, so workers are spaced at least six feet from one another. This may mean spreading shifts over a longer day or adding an extra shift to operations. Providing physical barriers between workstations is also an option. When workers must be within two meters, ensure that each worker wears a mask and practices safe and frequent hand hygiene. Shared tools should be disinfected between uses.
- **Shipping/receiving:** Stagger deliveries and arrange for contactless delivery where possible.
- **Maintenance shop:** Reduce or eliminate shared use of tools where possible, or ensure tools are disinfected between uses. Eliminate shared worktables and benches.
- **Break rooms:** Stagger break times, which may require a longer break window. Use tape or signage to indicate two metre spacing in seating or high-traffic areas. Have a strategy for high touch areas like microwaves and vending machines, like assigning a single person to operate them.
- **Bathrooms, change, and locker rooms:** Ensure an adequate hygiene product supply and post handwashing and cough hygiene protocol signage in visible areas, in languages that reflect the workforce.
- **In the office:** All personnel that can work from home should be encouraged to do so.

An additional document by CME proposes best practices for using PPE in manufacturing workplaces.^{xv} It outlines five things to consider when we are selecting PPE within the current climate:

- **Hazard identification:** Each piece of equipment should be evaluated to ensure that it is the most effective and comfortable gear for the hazards that that workers face within a given manufacturing operation.
- **Level of protection needed:** Identify the hazard ratio for your respiratory dangers and match that with a respirator that has the right assigned protection factor. NOTE: With a

potential shortage of NIOSH approved N95 particulate respirators, WorkSafeNB has provided a list of equivalent respirators^{xvi}

- **PPE availability:** Manufacturers should work with their vendors to identify which products they have the strongest supply chain for and ensure that they have fit tested their people on specific equipment or that they have the ability to perform that fit testing quickly.
- **Burn rate and disposal:** Understand how much PPE you are consuming to identify how much of a safety stock may be required, as well as any opportunities to improve operational practices regarding equipment use.
- **Fit:** Comfort and wearability are key to PPE being worn by ANY worker. CME recommends contacting a PPE expert, Made Safe or other, in your area to help identify and overcome the specific issues with your equipment.

Lear Corp., a Michigan-based automotive parts supplier with 271 production plants in 39 countries (including in China's Hubei Province) published a detailed handbook^{xvii} for reopening its manufacturing facilities while minimizing the potential risks in getting back to work. Lear Corp. claims production capacity at its facilities in China has recovered to about two-thirds of pre-COVID 19 levels while following measures outlined in its playbook. The document outlines dozens of recommendations. Some key general measures include:

- **Health screenings:** All employees should receive health screenings and contactless temperature checks when entering buildings. If temperature checks aren't feasible, employees give confirmation of daily self-screening.
- **Staggered shifts:** Start times of shifts will be staggered to promote social distancing.
- **Break rooms:** For lunch breaks, half of a crew could be asked to eat outside or in their cars so there's ample social distancing for employees who remain in the lunchroom.
- **Disinfecting:** The playbook gives recommendations for how often different areas and objects should be disinfected. General objects often touched, such as handles and faucets, should be cleaned with a hospital-grade disinfectant at least 4 times a day.
- **Cleaning products and PPE supply:** Each facility should maintain at least a 30-day supply of disinfectants, masks and other personal protective equipment for employees and contractors responsible for cleaning.
- **Social distancing on the floor:** Suggestions include using production transfer aids (such as inclined shelves, push boards) to minimize the risk to social distance violations. Conveyor lines should have operator boundaries clearly marked on the floor.

As concerns the food processing sector, the World Health Organization offers some guidelines for proper hygiene, and physical distancing:

- **Stagger workstations** on either side of processing lines so that food workers are not facing one another.
- **Provide PPE** such as face masks, hair nets, disposable gloves, clean overalls, and slip reduction work shoes for staff. When staff are dressed in PPE it is possible to reduce distance between workers.
- **Space out workstations**, which may require reduction in the speed of production lines.
- **Limit the number of staff** in a food preparation area at any one time.
- **Organise staff into working groups or teams** to facilitate reduced interaction between groups.

J. D. Irving released a document outlining the COVID-19 protocols it has put in place for its offices and manufacturing plants.^{xviii} It covers many of the same points outlined above, but provides an example of a cleaning and disinfection checklist that manufacturers may find

useful. The checklist includes questions beyond whether each surface was cleaned, including a reminder to ensure COVID-19 signage is visible and that tape/marker to indicate proper distancing are in place. It also recommends the area Supervisor or a designate is conducting checks throughout the shift to ensure 6 feet or 2 meters physical separation between people.

A note of screening protocols: Guidance for manufacturers tends to recommend screenings that include contactless temperature taking. As noted above, WorkSafeNB requires contactless temperature screenings where physical distancing or installation of barriers is not possible, but it doesn't go into detail about suitable alternatives where temperature reading technology cannot be quickly acquired. Meanwhile, guidance issued by Ontario's Ministry of Health repeats many of the same recommendations outlined from the sources mentioned above, but goes into depth on active screening measures,^{xix} which it defines as setting up a designated screening stations where employees are asked screening questions using the Ministry of Health's online COVID-19 self-assessment tool prior to entering.

JDI's recommendations include a self-assessment sign at the entrance that asks questions based of self-screening guidance issued by the Chief Medical Officer of Health (which is updated regularly and needs to be consulted on an ongoing basis).^{xx} The document also includes some detailed descriptions of temperature screening tools, such as infrared cameras, of varying levels of sophistication. The guide includes images of JDI's set-up and supplier information for the model it uses.

Based on the above recommendations, we highlight a couple of considerations for New Brunswick manufacturers:

Screening protocols: WorkSafeNB recommends screening for all workplaces; active screening is required in cases where physical distancing cannot be maintained and physical barrier cannot be installed. Given the rapid pace at which New Brunswick businesses are being asked to adhere to health and safety guidelines, they may require further guidance on how to acquire the technology and supplies needed for these temperature screening stations. Alternatively, future guidance could provide additional clarity about acceptable alternative active screening protocols, such as the processes recommended by the Ontario government.

Staggered shifts and consistent working groups: For firms whose production floors don't allow for proper physical distancing, WorkSafeNB is requiring either installation of protective barriers between workstations or active screening procedures. Additional measures may include staggered shifts and working groups, which can mitigate risk by limiting the number of close contacts for each worker and allowing time for sanitation procedures between shifts. For example, running two longer shifts instead of three shifts would reduce traffic and allow time for proper sanitation of equipment and other facilities between shifts. As recommended in the Lear Corp. guidance, employers can reduce the number of contacts per worker by organizing staff into working groups or teams that only interact with each other. This could be as simple as ensuring that workers are limited to the same shift (e.g. night shift workers can't switch to day shift) and would also mean that the number of potential contacts would be reduced in the event of a COVID-19 case.

Guidance for responding to COVID-19 cases

The question of protocol for responding to a confirmed COVID-19 case among workers has been especially relevant for businesses in the food processing industry, where COVID-19 outbreaks in meat packing and other food processing plants have led to worries about food supply chain continuity.^{xxi}

WorkSafeNB's guidance for employers outlines the following protocols for respond to COVID-19 contacts and cases:

Employee contact with travellers and COVID-19 cases:

- **Contact with confirmed case:** If an employer finds out a worker has been exposed to someone infected with COVID-19, their response should depend on whether the worker has had close contact. Public Health is advising anyone who has been exposed to someone who has been diagnosed with COVID-19 to self-monitor themselves for 14 days. If the worker has had close contact, then they must self-isolate. In either case, if the worker develops symptoms of COVID-19, they should isolate and use the Government of New Brunswick's assessment tool^{xxii} to assess their status and next steps.
- **Contact with someone being tested for COVID-19:** If an employee comes into close contact with someone who is being tested for COVID-19, but is not symptomatic, they must self-monitor and check with their employer if they prefer they come to work or remain at home. If this person is subsequently diagnosed with COVID-19, the employee will need to self-isolate.
- **Contact with traveller:** If an employee is living with or coming into contact with someone who has returned from travel outside of New Brunswick who is not symptomatic, they should discuss with their employer whether they should come to work or remain at home. At the very least, they will need to self-monitor.
- **Protocol following 14-day isolation:** Employees who have completed the mandatory 14 days of self-isolation following travel or close contact with a case, should be considered healthy if they show no symptoms. No doctor's note is necessary for returning to work. If an employee was self-isolating because they were under investigation by Public Health as a COVID-19 case or close contact of a case, Public Health will provide a letter to the worker and employer when the worker is able to leave self-isolation and return to work.

A note for employers: The WorkSafeNB guidelines direct asymptomatic employees who have had contact with someone being tested for COVID-19 or who have travelled outside the province to ask their employer whether they should report to work. Employers should develop internal protocol for responding to these questions.

Possible or confirmed employee COVID-19 cases:

- **Employee being tested for COVID-19:** If an employee has an appointment to be tested for COVID-19, the employer should assume that the test may come back positive. While awaiting results, they should clean and disinfect any areas where the employee had been in contact. If possible, they should close off the potentially contaminated areas until the test is confirmed. The employee should self-isolate and await instructions from the Department of Health. If the test is confirmed positive, the employee must follow the advice provided by Public Health.
- **Employee positive for COVID-19:** If an employee tests positive for COVID-19 and may have had interactions with co-workers before diagnosis, the employee must immediately isolate themselves and follow guidance from the appropriate regional public health officials. Public Health will determine if there is a need to inform the employer of the test results. Public Health will advise anyone who has been exposed to someone diagnosed with COVID-19 and identify any control measures that are required to be put in place. **For the management of cases and contacts, Regional Public Health will provide the direction for follow up and advise if there is a need for employer action.** Regional public health will lead the process of tracing the identity of other persons that may have been exposed.

- Public Health may require the employer's assistance in the process. Employers are required to:
 - Cooperate with Health officials and adhere to the advice provided;
 - Report the potential exposure to WorkSafeNB;
 - Following Public Health Guidance, communicate with staff and other workplace parties about measures they must take following the potential exposure while ensuring this process respects individual privacy. Public Health will also identify if any communication is needed external to the workplace;
 - Follow Public Health's advice regarding closing or restricting access to the workplace to clean surfaces and equipment which the confirmed case was in contact with by following the guidelines developed by Health Canada for Hard-surface disinfectants for use against coronavirus (COVID-19)^{xxiii};
 - If applicable, follow Public Health's advice before re-occupying the workplace to comply with WorkSafeNB;
 - Introduce a screening process for employees re-entering the workplace if such a process does not already exist;
 - Using WorkSafeNB guidance, re-evaluate the workplace including the preventive measures to determine if changes are required; and
 - If necessary, re-visit the business continuity plan.

A note on being prepared to assist with contact-tracing: Because Public Health may require the employer's assistance in the contact tracing process following a confirmed COVID-19 case in the workplace, it is essential that employers be prepared to provide documentation of individuals exposed to the COVID-19 case at the workplace. Practically speaking, this means employers must be aware of their employee's movements, and have protocol in place to not only ensure employees are minimizing their contact with others, but that they would be able to accurately disclose which individuals they've had contact with on short notice in the event of a possible case. Other guidance outlined below have more recommendations on limiting and documenting contacts in a manufacturing setting.

In another document, CME outlines recommended protocol for responding to a confirmed COVID-19 case among workers^{xxiv}. In addition to ensuring the employee follows provincial public health guidelines surrounding quarantining for 14 days, employers should:

- **Confidentiality:** Ensure the infected employee understands they will not be identified by name to their co-workers as having contracted the virus, in compliance with the various pieces of legislation that covers personal health privacy information across Canada.
- **Contact tracing:** CME recommends employees who had contact with the infected employee in the 14 days prior to their positive test result should be sent home to prevent the spread of the virus. In New Brunswick, Public Health is responsible for carrying out this contact tracing, but employers must be prepared to assist in this process by providing accurate documentation of individuals or work teams the employee would have had contact with.
- **Isolating affected areas:** Work with the affected employee to make a list of all areas they have physically been over the last three days. Close these areas off using plastic sheeting, if feasible, and ventilate the area to the outside. If closing off the exposed areas is not possible then the facility should close until the areas in which worker was present are disinfected. If possible, contact a professional cleaning service to disinfect the impacted areas.

The Lear Corp. guidance also includes confirmed cases protocol:

- **On-site isolation:** It mentions having on-site isolation protocol in place for when an employee exhibits symptoms on site, including a designated isolation room and PPE for the isolated person and those interacting with them.
- **Disinfection protocol:** It also recommends having a deep-cleaning and disinfection protocol in place for when an active employee tests positive for COVID-19, which should include identifying an external company with personnel trained to execute the process of cleaning, disinfection and disposal of hazardous waste.

The World Health Organization's guidelines for the food processing sector include recommendations for dealing with confirmed cases and preventing possible outbreaks:

- **Training:** Staff should be trained to identify and report illness at the earliest opportunity. Staff need to be aware that they should not report to work with symptoms of COVID-19 but notify such illness by telephone.
- **On-site isolation:** If a food worker becomes unwell in the workplace with typical symptoms of COVID-19, they should be removed to an area away from other people. If possible, find a room or area where they can be isolated behind a closed door. Arrangements should be made for the unwell employee to be removed quickly from the premises. All surfaces that the infected employee has come into contact with must be cleaned, including all surfaces and objects visibly contaminated with body fluids/respiratory secretions, and all potentially contaminated high-contact areas such as toilets, door handles, and telephones.
- **Confirmed cases:** In the event of a confirmed COVID-19 case, staff who have not had close contact with the original confirmed case should continue taking the usual precautions and attend work as usual. Staff who have had close contact with the infected employee should be asked to stay at home for 14 days from the last time they had contact with the confirmed case and practice physical distancing.
- **Small teams and workgroups:** WHO emphasizes the importance of organizing employees into small teams or workgroups will help to minimise disruption to workforce in the event of an employee reporting sick with symptoms of COVID-19. Closure of the workplace is not recommended.
- **Resolved cases:** WHO recommends that a confirmed case could be released from isolation once their symptoms resolve and they have two negative PCR tests at least 24 hours apart. If testing is not possible, WHO recommends that a confirmed patient can be released from isolation 14 days after symptoms resolve.

Based on the above recommendations, we highlight the following considerations for New Brunswick manufacturers:

Facilitate contact tracing through working groups and record-keeping: As the above guidance shows, being prepared to trace all close contacts of an affected employee is essential to preventing an outbreak from spreading. This means employers should have accurate documentation of which employees have been in contact, so they can promptly share this information with Public Health should the situation demand. As mentioned in the previous section, having working groups or consistent shifts would help facilitate accuracy of contact tracing. Organizing shifts into smaller working groups or teams as recommended by WHO would further reduce the number of close contacts per employee, reducing the level of disruption in the event of a confirmed case. Employers may want to have a record-keeping system in place to track co-workers who have had close contact.

Protocol for symptomatic workers: Employers must ensure employees are trained to self-monitor for symptoms and not report to work if they are symptomatic. There should also be protocol in place for dealing with possible cases as they emerge, which would likely require specific personnel for each shift that are trained in the right protocol and who can ensure the correct procedures are followed. If a worker presents symptoms while at work, it is vital that the employer/employee contact 811 immediately for instructions. Employers should be prepared to isolate the possible case at first detection within the workplace and have a plan for safely transporting them from the premises. There should also be a protocol in place for quickly sectioning off and deep-cleaning affected areas. If the possible case is confirmed as COVID-19, procedures contact tracing and isolation of close contacts would come into effect. These steps would also apply if the employer is advised that an employee will get tested (i.e. when symptoms developed outside of work but there is a possibility that the employee was in the workplace while contagious).

Case studies

As manufacturers across the globe adapt or resume operations, several case studies emerge for how specific industries are adjusting their operations in light of COVID-19. Some procedures such as gradual re-openings and reduced shifts may have broad applicability. Some case studies – particularly as concerns outbreaks in food processing plants – provide warnings about the importance of rapidly intervening in response to potential or confirmed cases to prevent further spread.

Re-opening protocols for manufacturing

Automakers resuming operations

The automotive sector provides examples of protocol where temporary reduced demand for products means companies can gradually re-open at reduced capacity. This approach may be feasible for some manufacturers in New Brunswick but not others.

As European automobile manufacturers resume operations across the continent, common measures include reducing volumes, decreasing the number of shifts, and slowing assembly lines to allow workers to keep their distance.^{xxv} At the Hyundai plant in Nošovice, Czech republic, for example, only two of the usual three shifts are working for the time being, and the factory has introduced stricter hygiene regulations as well as plans to disinfect the premises several times a day. Partition walls have also been installed in the canteen. There are other examples of plants ramping up operations incrementally, one assembly line at a time. Audi's first plant in Győr, Hungary, resumed one line for engine assembly, with plans to open another motor assembly line in time, with vehicle production set to start the following week. When Volkswagen Passenger Cars announced its plans to gradually restart production at its European plants by the end of April, it said production would be ramped up in a "staggered and well-ordered" manner.^{xxvi}

In North America, automakers FCA Canada and Unifor are discussing restarting U.S. and Canadian manufacturing beginning May 4.^{xxvii} Plans currently call for the Brampton plant to come back online as a one-shift operation, with the goal of ramping back up gradually, making it easier to adjust safety protocols if needed. The automaker is working on new procedures to certify the daily wellness of its workforce while also redesigning workstations to maintain proper social distancing and expanding the already extensive cleaning protocols at all locations. Measures being discussed include taking employees' temperatures before they enter the

building, workers being given personal protective equipment such as gloves and facemasks and dividers being installed between stations that require workers to be close to one another.

Chinese factories implement screening technologies

Because China was the first country to deal with COVID-19 outbreaks and was among the first to resume operations before flattening the curve, Chinese factories can provide examples of protocol for manufacturers resuming operations. However, discrepancies in available technologies may mean some protocols aren't practical for New Brunswick manufacturers.

As of early April, most Chinese factories were back to operating at around 80% of capacity, with some pushing 100%^{xxviii}. Screening and testing appear to be key strategies for ensuring the safety of workers, but the measures described by some leading companies require technology and resources that may be out of reach for Canadian manufacturers at this time. For example, Foxconn, the Taiwanese contract manufacturer which assembles the majority of Apple's iPhones in China, says that with the help of tests for the virus and chest x-rays it has been able to get all its operations on the mainland back up and running with no risk to the health of its workers.

Factories also rely on technological infrastructure put in place by Chinese provincial governments, in the form of a variety of "health code" apps. These run through portals inside WeChat and AliPay, two payment apps, to determine the worker's health status and travel history. Some factories have implemented layout changes to their production floors to ensure workers no longer cluster around each step of the assembly process, increasing worker safety at the expense of some speed.

COVID-19 outbreaks in food processing facilities

As meat processing plants remain in operation to ensure continued food supply, numerous reports of outbreaks at facilities may provide some insight into how safety measures and protocol for responding to emerging outbreaks can be improved. These insights would also be relevant for manufacturing and processing firms across broad industries, due to similar concerns about working conditions that often require workers to be in close proximity. It had been observed that meat processing workers are particularly susceptible to the virus because they typically stand shoulder-to-shoulder on the line and congregate in crowded locker rooms and cafeterias.^{xxix}

As of April 30, Cargill, Smithfield Foods Inc., JBS USA and Tyson have paused operations at around 20 slaughterhouses and processing plants in North America.^{xxx}

Alberta meat plant outbreaks and response

Cargill plant

Following an explosion of COVID-19 cases at Cargill meat processing facility near High River in southern Alberta, observers are raising questions about the decision-making process that some are saying resulted in the facility remaining in operation longer than it should have. The situation has drawn international attention and is being closely watched as a case study of a potential worst-case scenario of what could happen if proper protocols aren't put in place early in processing plants where physical distancing isn't possible.

On April 13, the plant's first 38 cases of COVID-19 were brought to the attention of media by the union representing workers at the facility. Two days later, a provincial Occupational Health and Safety inspector conducted an inspection over video call and concluded the plant was safe to remain open.

As of April 25, less than two weeks after that call, the facility had announced plans to pause operations after 558 confirmed cases and one death.^{xxxix} As of May 9, the plant was the location of North America's largest outbreak tied to a single site, and had been linked to more than 1,500 COVID-19 cases, close to 950 of whom were workers.^{xxxix}

As of April 30, the plant had announced plans to reopen May 4th with operations reduced to one shift. Cargill said it would reduce the likelihood of carpooling by providing buses with protective barriers between the seats to transport workers. The company said it has added additional barriers in the washrooms and reassigned lockers to allow for more spacing. Protective barriers have also been installed on the production floor and face shields have been introduced in places where protective barriers are not possible.

UFCW Local 401 president Thomas Hesse said there needs to be an independent investigation into the situation at Cargill. Prior to the temporary closure announcement, employees at the facility had accused the company of ignoring physical distancing protocols and trying to lure them back to work from self-isolation. Although Cargill had previously said it would temporarily reduce shifts, test temperatures and implement enhanced cleaning and sanitizing while adopting physical distancing practices where possible, some employees cited "elbow-to-elbow" working conditions and fears of transmission in a facility they said was simply too crowded, even with reduced personnel, to make physical distancing possible^{xxxix}.

JBS Canada Beef

The JBS plant in Brooks had 67 confirmed COVID-19 cases among its employees as of April 20. The plant said its operations are down to one shift due to "increased absenteeism" despite the company offering employees a wage increase of \$4/hour. The plant continued to operate as of April 29, after 276 employees and contractors had fallen ill.^{xxxix} JBS says several measures have been put in place^{xxxix} at the Brooks facility including:

- Temperature testing on all team members prior to entering the building using hands-free thermometers and thermal imaging technology;
- Requiring all employees to wear face masks and providing masks to those that need them;
- Stepping up sanitation and disinfection efforts, including deep-cleaning on the entire facility;
- Staggering starts, shifts and breaks as well as increasing spacing in cafeterias, break and locker rooms for physical distancing purposes;
- Installing physical partitions on production lines;
- Dedicating staff to clean facilities continuously;
- Offering temporary leave to vulnerable populations along with full pay and benefits;
- Educating and encouraging workers to practice social distancing at home and in the community; and
- Restricting access to the Brooks facility and not allowing any visitors.

A later news article also described Plexiglas barriers at the lunch tables, which have been spread out into heated tents, as well as barriers between the urinals and sinks. Lockers have

been spaced out so that people on the same shift go to different areas. Beginning March 27, it was mandatory for every worker to wear a face shield.

By May 8th, the plant had 566 cases among 2,600 employees.^{xxxvi}

Seafood processing outbreaks and response

With seafood processors looking at re-opening after a delayed season, case studies in the sector are especially important. So far, seafood processing plants have fared better than other meat processing plants so far, but this may have to do with fewer plants being in operation due to seasonality.

On April 20, High Liner Foods announced it had temporarily suspended all production at its Portsmouth, N.H. location seafood processing plant due to “less than 10” confirmed positive COVID-19 cases.^{xxxvii} It said the plant would remain closed until the company had conducted a deep cleaning and contact tracing. In response, High Liner Foods made masks mandatory for workers at its Lunenburg, N.S., frozen seafood plant. The facility has also introduced staggered shifts in Lunenburg, rearranged tables in the cafeteria to increase spacing, added 16 sanitation stations and assigned a worker to clean surfaces on a full-time basis. The company says that, as of May 1, a temperature screening device will be delivered and installed to test workers.^{xxxviii}

On April 25, Ottawa announced it will provide a \$62.5-million aid package to help the country's fish and seafood processors protect workers from COVID-19. The money is to be spent on personal protective equipment and measures to adapt plants to comply with health directives. Processing companies can also use the money to pay for freezers to store food products while they adapt their factories and hold onto their processed products until the markets reopen.^{xxxix}

In British Columbia, Ucluelet Harbour Seafoods re-opened its facility on April 22 with COVID-19 precautionary measures in place, after being closed 5 weeks for maintenance.^{xl} Measures include:

- The plant's port bus limits passenger capacity to support physical distancing, employees are assigned seats for the duration of the season. Facemasks and gloves are being provided when available and the company is taking temperature readings before each employee boards. Day shift workers will be assigned to even numbered seats and night shift staff will be assigned to odd numbered seats. The bus company will disinfect the bus after each leg of round trip.
- Staff from different communities will be separated where possible.
- Plastic “sneeze” guards have been installed between workers on the processing line.
- Table and chairs have been removed from the lunchroom to minimize crowding.
- Smoke/coffee breaks will be staggered to reduce the number of employees per break.

On May 8th, in Warrenton, Oregon, Pacific Seafood suspended operations at a plant in Warrenton after a worker tested positive for the coronavirus.^{xi} The plant immediately suspended operations and did a professional sanitization of the plant. The company contracted with a private home healthcare provider to test workers for the virus before reopening – with this example, we see how differences in the way healthcare is administrated in the United States affects how companies can respond to an outbreak. Plants in New Brunswick would be expected to cooperate with public health's guidelines for the administration of COVID-19 tests, meaning they would have to determine when it is safe to return to work without necessarily being able to test all workers.

COVID-19 safety in manufacturing and processing: key considerations for New Brunswick

Based on the guidelines and case studies described above, a few key considerations emerge for manufacturers and processing plants when it comes to identifying safety protocols:

Adjust operations to allow for physical distancing and reduce contacts: The most common recommendations revolve around adjusting operations to facilitate the requisite 2-metre distance between workers where possible, whether that means re-arranging floor plans, slowing production lines, or staggering shifts over a longer workday. Staggering shifts, ensuring staff stick to the same shift, and arranging staff into smaller workgroups can also reduce the number of potential contacts. For some firms, it may be feasible to resume operations incrementally and at a slower pace to allow for better distancing between workers and to allow for adjustments to safety protocols as needed.

Employ active screening and other safety measures when physical distancing isn't possible: Some sectors, like food processing, must contend with work environments where physical distancing isn't feasible. Firms should do their utmost to ensure the safety of their workers, which may mean providing barriers between workers and/or face coverings or face shields. Currently the federal government is offering funding for PPE for workers at fish processing plants. Active screening is also an essential measure for employers who cannot ensure physical distancing. WorkSafeNB is requiring contactless thermal temperature reading when physical distancing or installation of protective barriers is not possible – but manufacturers may have to adopt interim measures such as verbal screening protocol until such technology can be acquired.

Prepare for fast and thorough response to outbreaks: As demonstrated by the case of Cargill's meat processing plant in southern Alberta, one case of COVID-19 among workers can quickly turn into hundreds if a plant or factory doesn't intervene quickly and effectively to an outbreak. Manufacturers and processing plants should develop response plans for dealing with the early stages of an outbreak. In New Brunswick, the first step is calling 811 and adhering to guidance from Public Health. Additional protocol should include strategies for immediately isolating workers showing symptoms at the workplace, having arrangements for sectioning off contaminated areas and conducting a thorough disinfecting of the premises, and preparing documentation of team members who had contact with an infected person.

Form an education strategy to ensure clear and ongoing communication of expectations: Given the abundance of information circulating about COVID-19 health and safety best practices in the workplace, it is essential that employers are aware of their responsibility to clearly articulate protocol and provide training for adhering to new expectations in the workplace. Public health may want to set clear expectations and guidelines for ensuring employers educate their workers about how COVID-19 spreads, personal hygiene and why screening and contact tracing is important.

Further, employers should keep employees informed of protocol for what they must do if they show symptoms at or outside of work, as well as protocol for responding to a potential outbreak. Regular training sessions could be a way to communicate this information, along with signage in high traffic areas. The JDI guide^{xlii} and Lear Corp playbook^{xliii} both provide examples of signage. Beyond general training materials and signage, individual employees should be aware of what exactly is expected of them within the new guidelines – for example, employers may need to be specific in providing protocol for frequency of handwashing, how often specific surfaces need

to be disinfected, expectations for shared spaces such as lunchrooms, and what to do about smoking breaks, carpooling, and any other instance that might result in close physical proximity. It is also essential that communication is ongoing and frequent verbal reminders may be required. Supervisors should have clear guidelines for how to perform checks to ensure distancing and hygiene guidelines are being followed, including how often checks should be performed.

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