



# **Industry Impact and Lessons Learned from the COVID-19 Pandemic**

*November 2020*



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A.

## Executive Summary



***"Strength Exists in Trusting That Rebirth Will Arrive Soon"***



## ***Executive Summary (Cont'd) ...***

- Most respondents have a pandemic preparedness and response plan component in the business continuity plan (BCP).
- Firms made tactical adjustments to their preparedness before invoking their BCPs, mobilizing staff.
- They invoked their BCP by mid-February/March 2020, after the CDC initiated criteria for confirming cases and POTUS declared it a national emergency.
- Firms then distanced their staffs, split critical functions and commenced work from home (WFH).
- Most respondents were well-prepared, given the advanced warnings and extensive media coverage.



## ***Executive Summary (Cont'd) ...***

- Firms regularly communicated with staff and clients via email, direct phone call, and web site postings; conducted regular and ad-hoc conference calls and video sessions.
- To support a large remote workforce, some firms upgraded their VPN, Cisco, Citrix and/or remote desktop infrastructures and remote access capabilities.
- Regular and recent BCP awareness training, remote connectivity, systems testing and staff training exercises paid off.
- Communication with key staff, decision makers was critical to the incident management process
- Those that planned well, generally fared well.



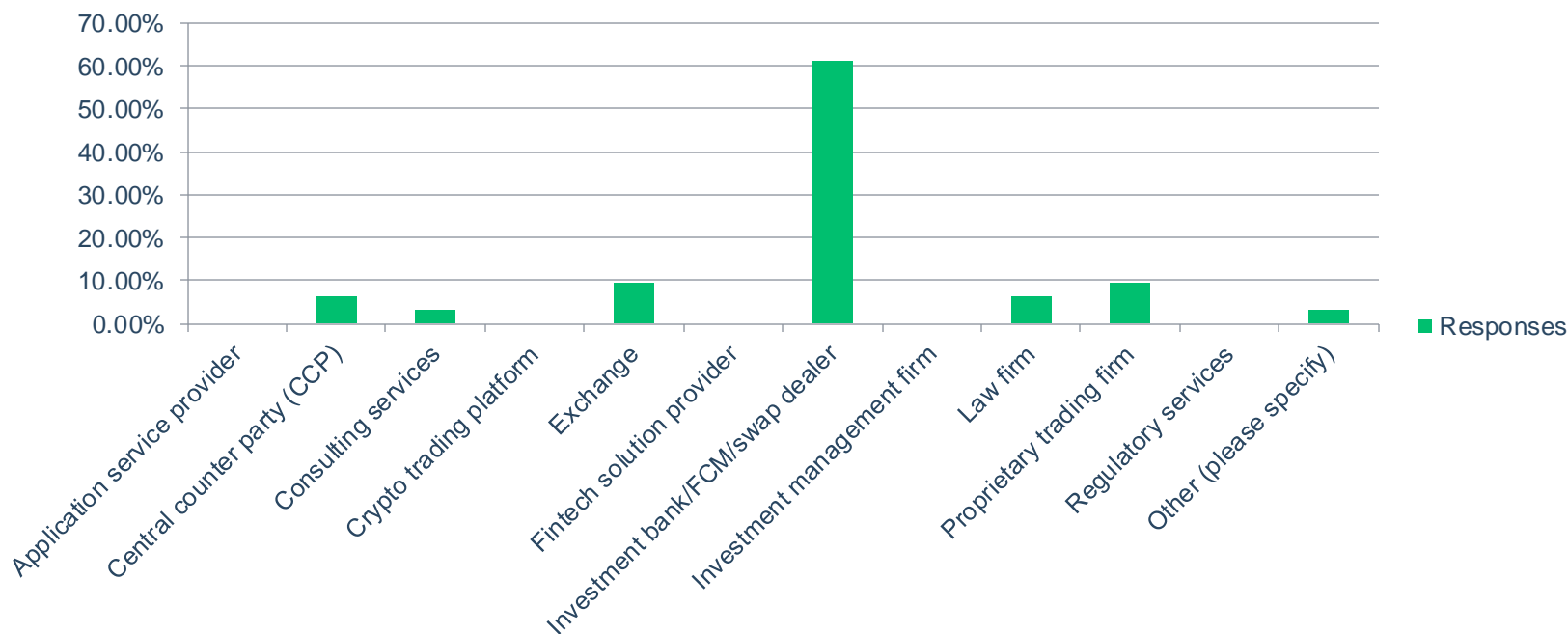
## ***Executive Summary (Cont'd) ...***

- Many firms indicated that they had staff that were directly or indirectly affected by C-19 and could not perform their work function.
- Respondents represented a cross section of market participants and financial services organizations.
- The biggest problems were caused by supply chain disruptions, including:
  - Network bandwidth or degradation of services when working at home
  - Key service provider disruptions (internet providers, telecoms, market data)
  - Systems processing and data storage capacity constraints as a result of excessive message rates and higher message traffic.
- The survey was developed, and the results were compiled by Tellefsen and Company, L.L.C.



# RESPONDENTS REPRESENTED A CROSS SECTION OF FINANCIAL SERVICES

Kindly indicate the type of organization you work for (check one):





## B.

## Industry Impact

- Most firms were able to quickly pivot, mobilize their staff and initiate WFH.
- Firms supported the increased levels of high volume transactions, as a result of the market volatility.
- Despite some network bandwidth challenges, firms' staff, clients and service providers responded well to working remotely from home.
- The levels of support from key service providers was rated highly.





## **Industry Impact (cont'd) ...**

- Some firms quickly configured VPN tunnels and deployed robust workstations or laptops to key staff that required them.
- However, ~10% of firms experienced some forms of business disruption after invoking their BCP and distancing the staff.
- Firms did not plan for the impacts from such a widespread, catastrophic event and the resultant emergency orders and workforce reductions.
- They did not anticipate that multiple things could all go wrong at the same time. Most BCP strategies usually do not!



## C. Survey Findings

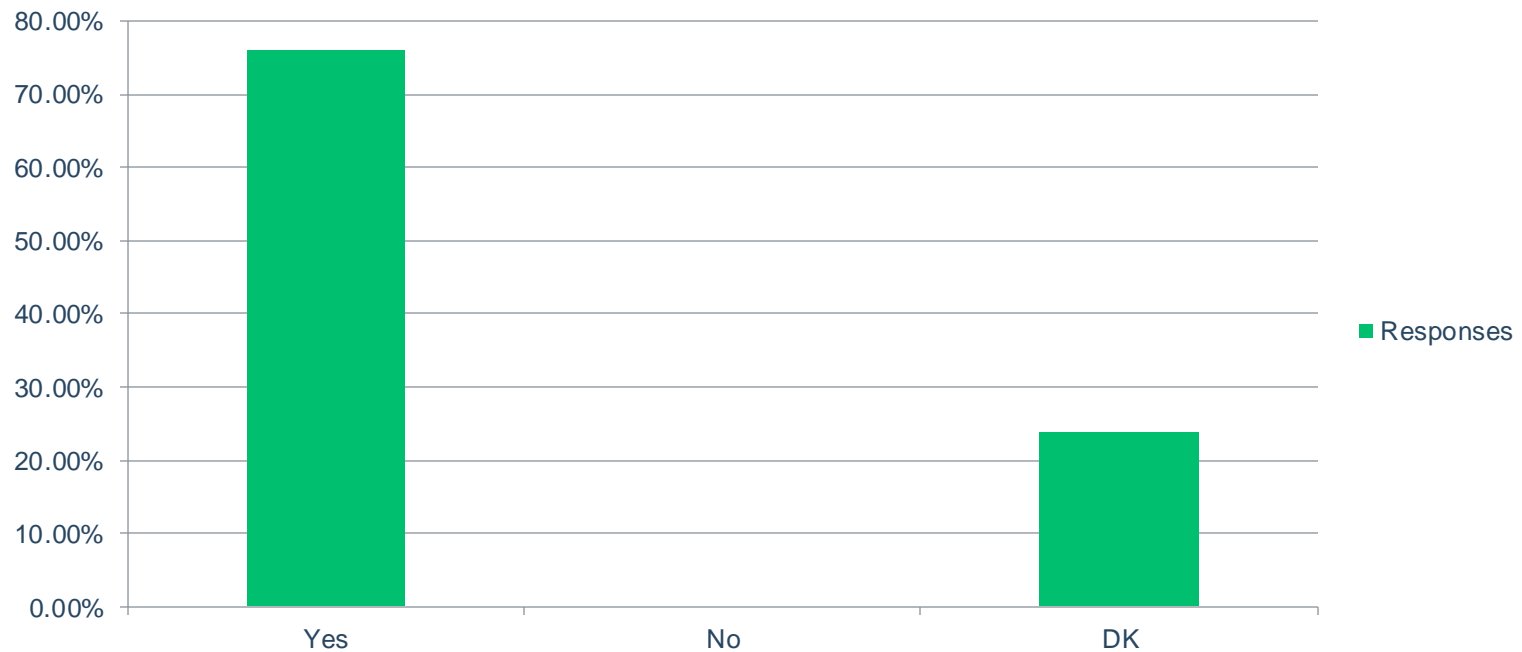
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## I. Preparedness and Business Continuance



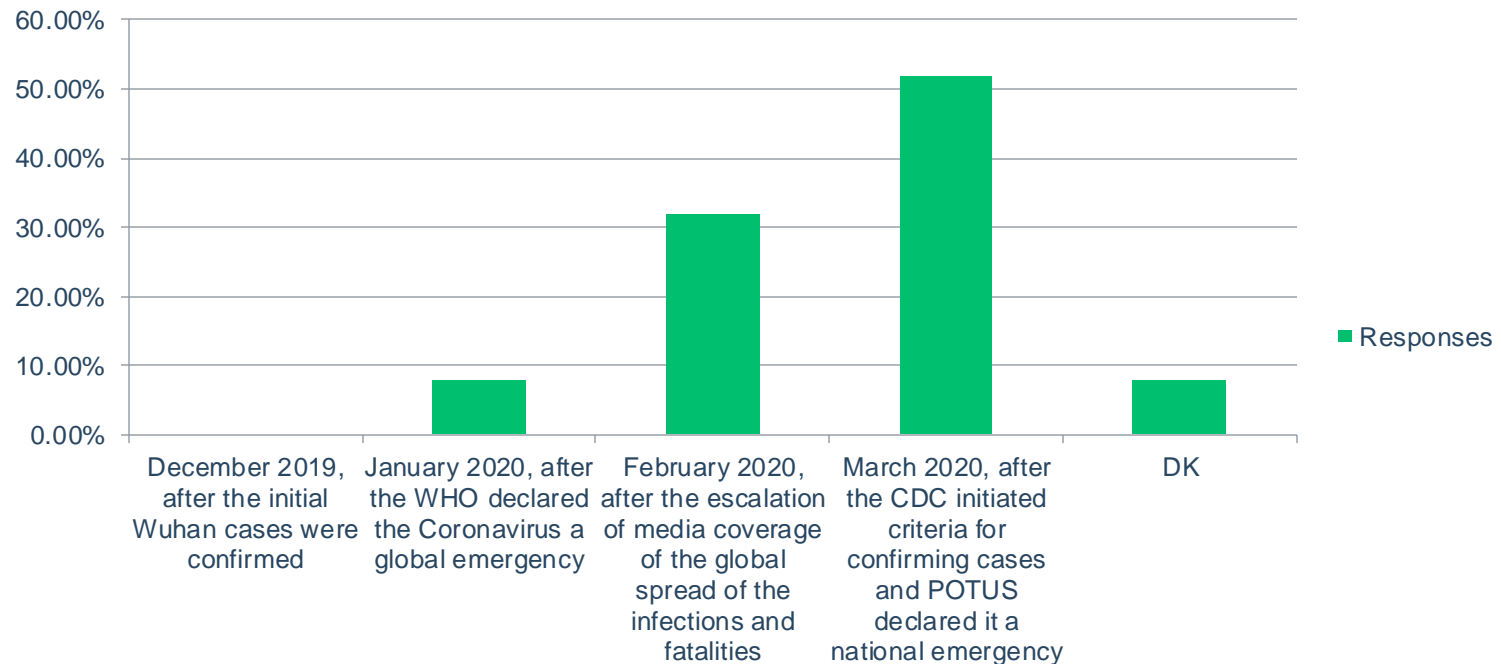
## >75% OF FIRMS HAVE A PANDEMIC PREPAREDNESS COMPONENT TO THEIR BCP

Does your firm's business continuity plan (BCP) have a pandemic preparedness and response plan component?



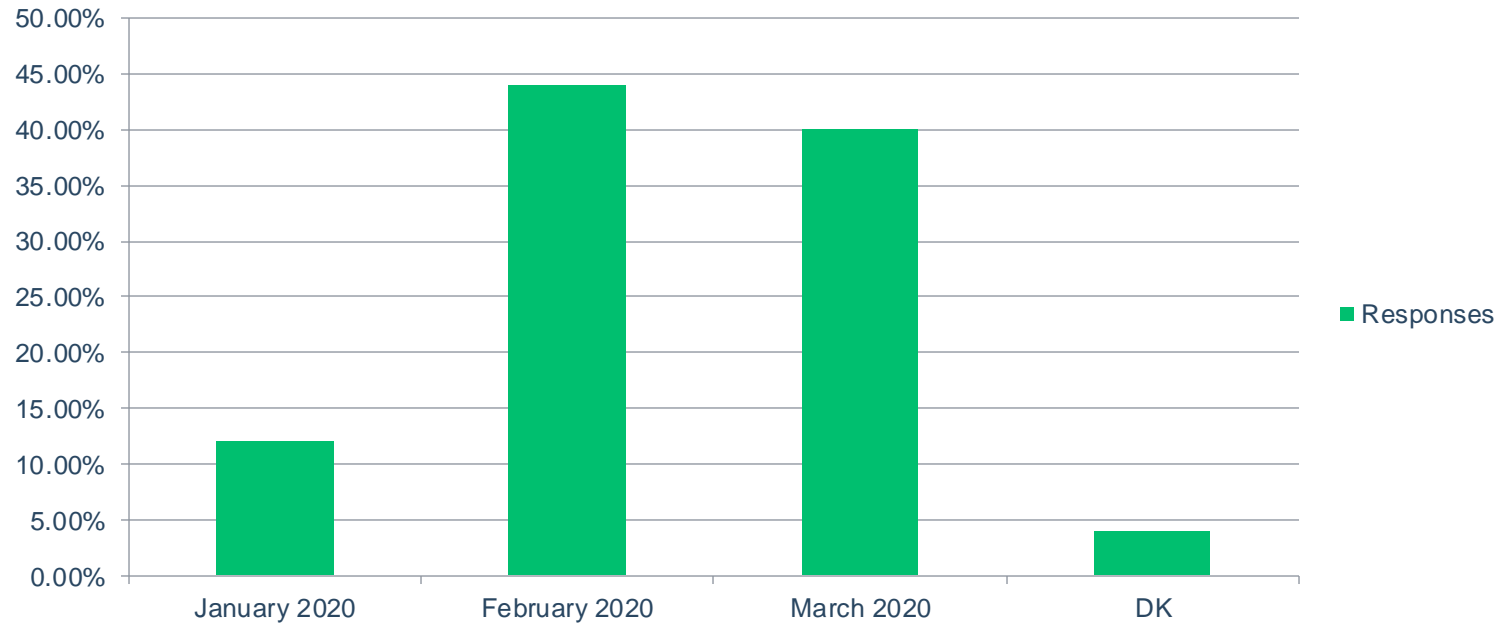
# **MOST FIRMS INVOKED THEIR BCP BY THE TIME THE CDC INITIATED CRITERIA FOR CONFIRMING CASES AND A NATIONAL EMERGENCY WAS DECLARED**

Approximately when did your firm invoke or enact it's pandemic BCP:



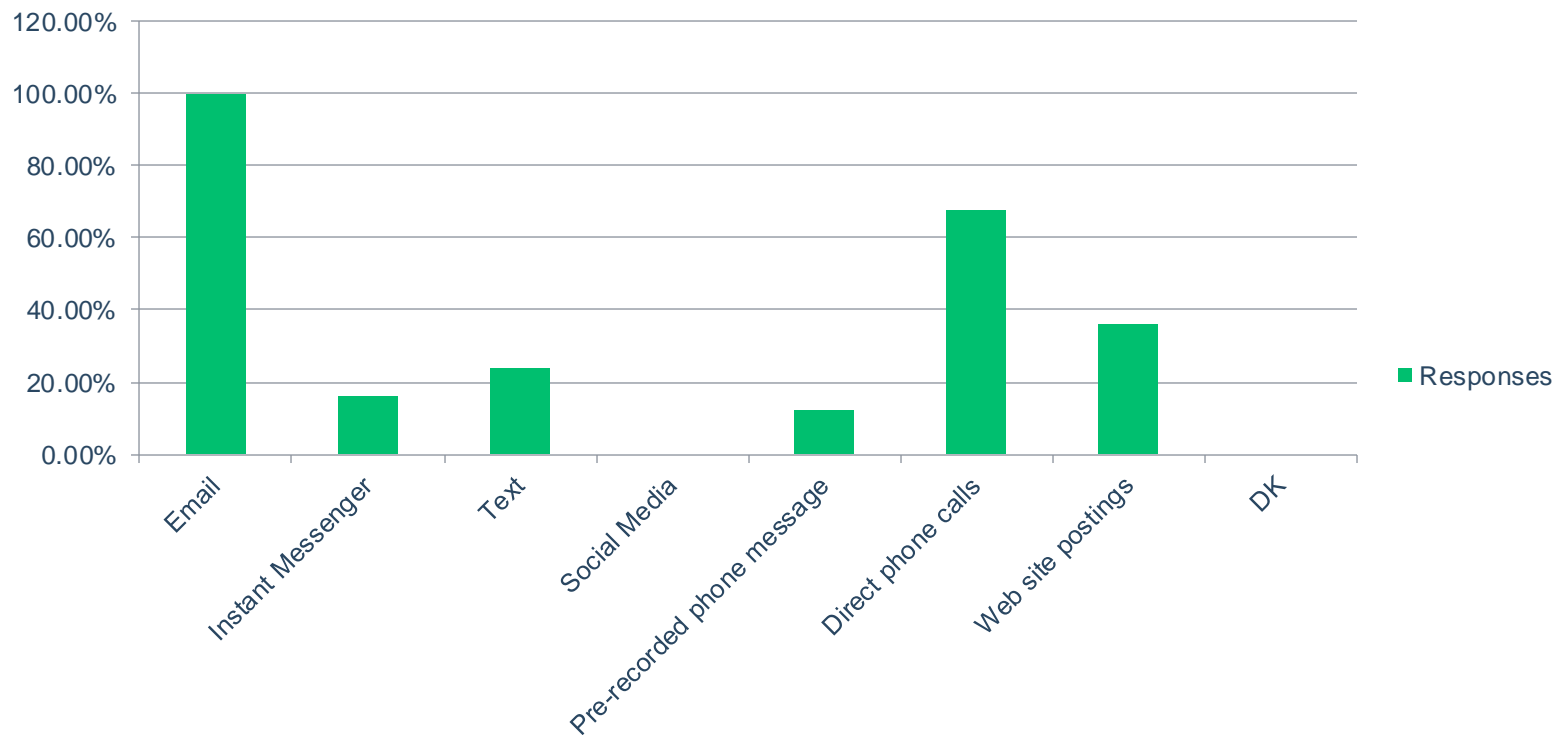
# FIRMS COMMUNICATED THEIR RESPONSE PLANS WITH THEIR STAFF EARLY ON

When did your firm begin to communicate with its staff about a response plan?



# FIRMS COMMUNICATED WITH THE STAFF VIA MULTIPLE MEANS

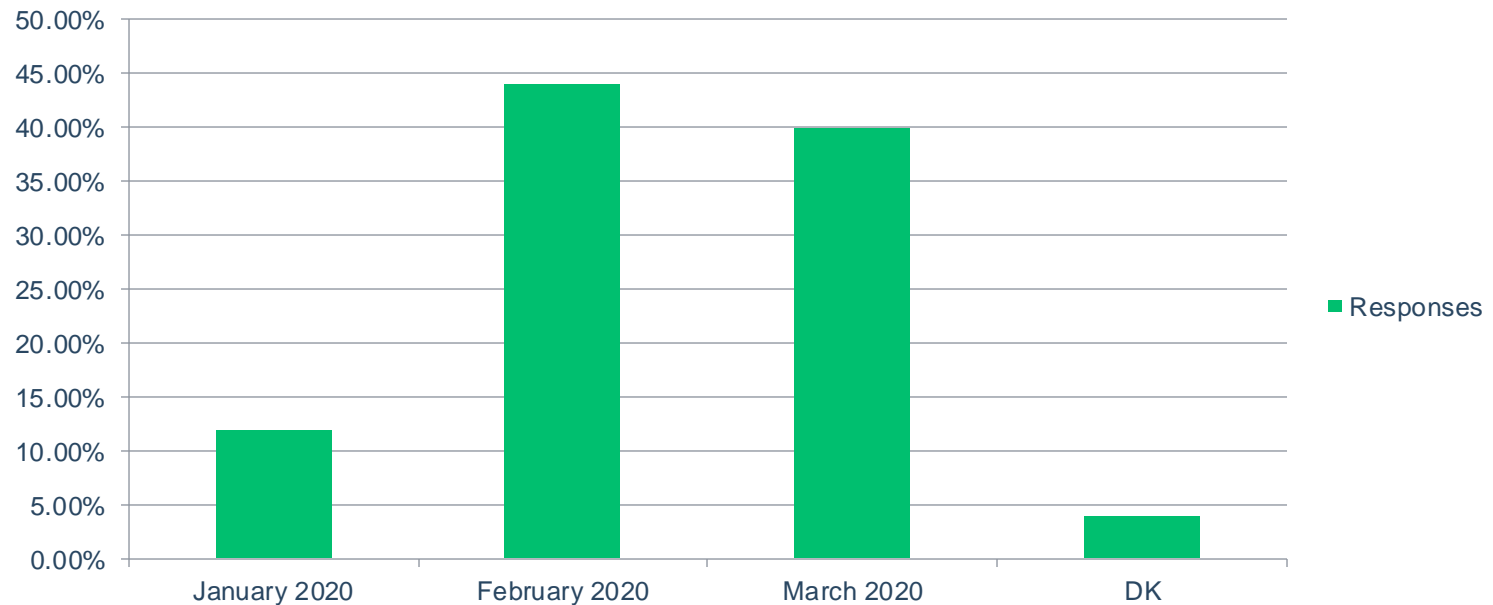
How did your firm reach out to its staff?  
(check all that apply)





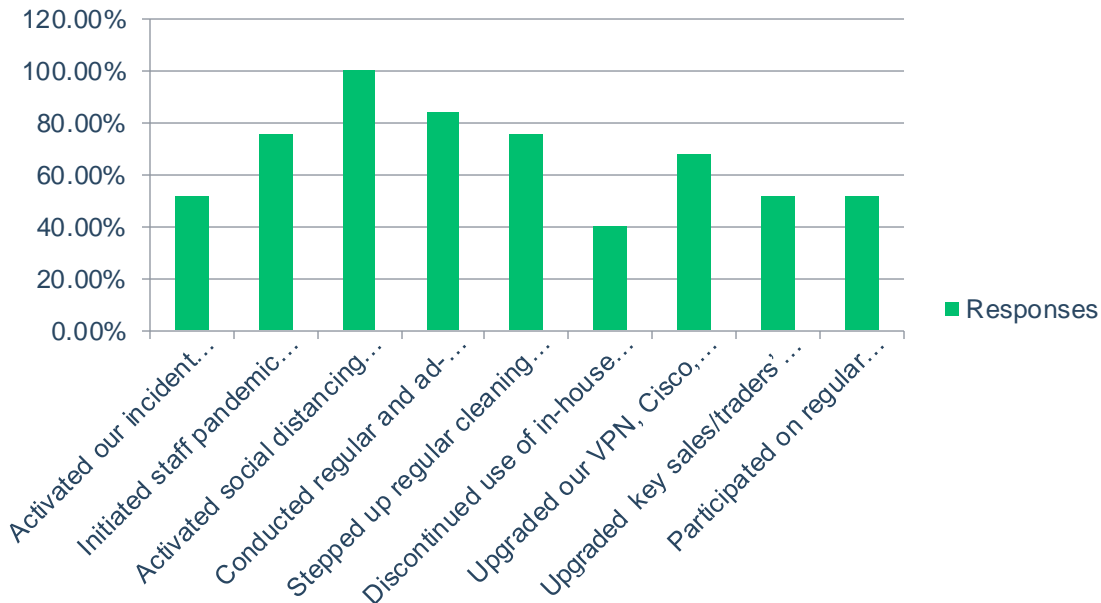
## **MOST FIRMS DISTANCED THE STAFF, SPLIT CRITICAL FUNCTIONS, COMMENCED WFH IN FEBRUARY AND MARCH**

When did your firm begin to communicate with its staff about a response plan?



# FIRMS EMPLOYED MULTIPLE PREPARATIONS AND RESPONSES

Which of the following preparedness and response actions did your firm employ?  
(check all that apply)

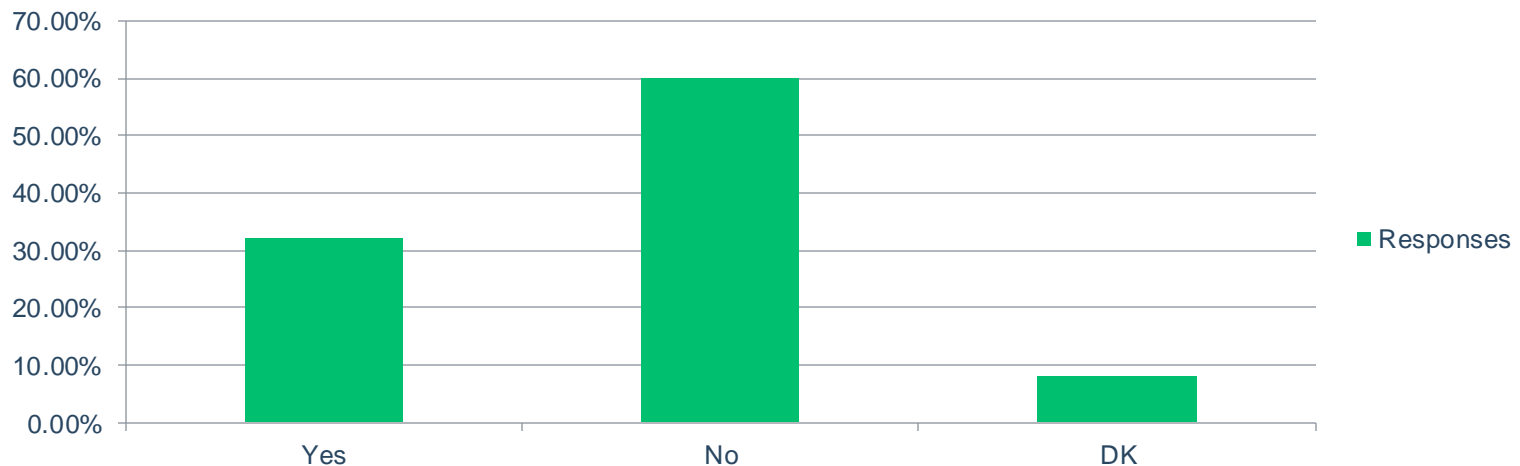


- Activated social distancing via remote work sites/telecommuting
- Conducted regular and ad-hoc conference calls with staff, clients, counterparties, exchanges, service providers etc.
- Stepped up regular cleaning of office facilities, including desktops, conference and meeting rooms, bathrooms etc.
- Initiated staff pandemic awareness and personal hygiene training
- Upgraded our VPN, Cisco, Citrix and/or remote desktop infrastructures and remote access capabilities
- Participated on regular conference call updates with state and local health agencies, industry associations
- Activated our incident management team and created a virtual war room
- Upgraded key sales/traders' home computing set ups



## TELECONFERENCING AND COLLABORATION TOOLS WORKED WELL FOR MOST FIRMS

Did your staff have problems with teleconferencing and collaboration tools (e.g., GoToMeeting, Hangouts, Skype, Slack, Teams, WebEx, Zoom) or remote connectivity via VPN, terminal servers, Cisco or Citrix remote access servers?



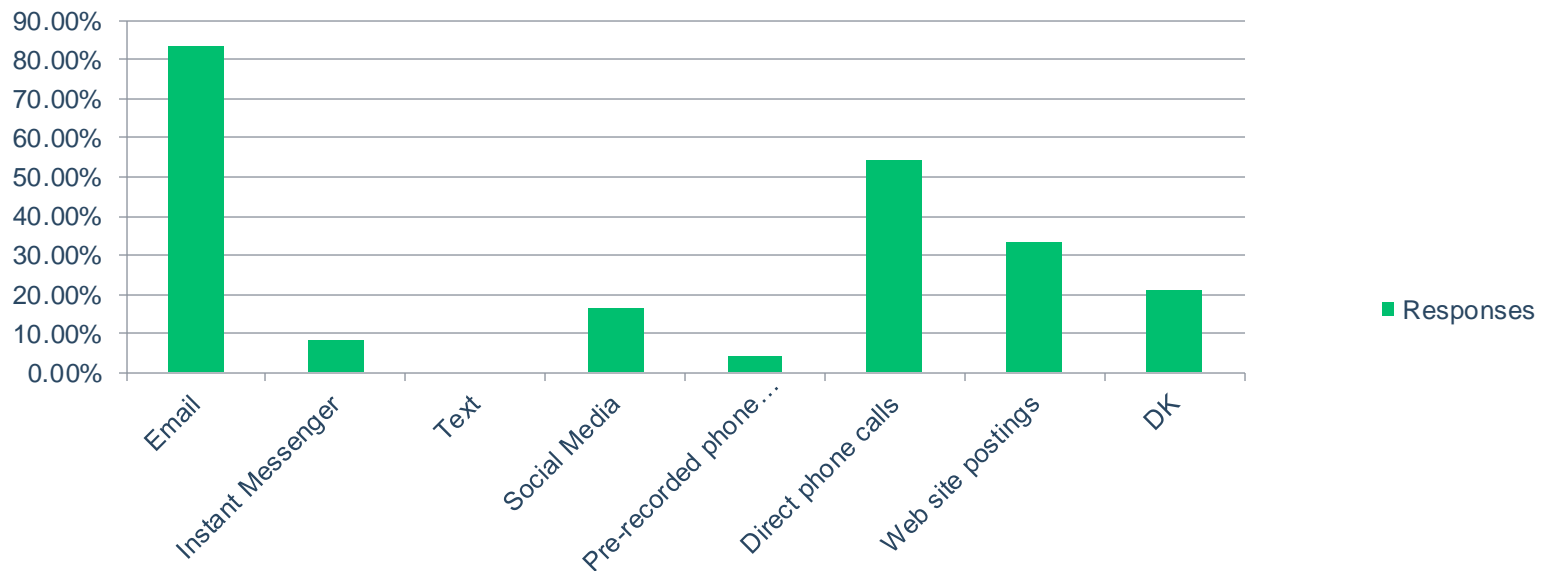


## **64% OF FIRMS HAVE ALTERNATE LOCATIONS TO CONTINUE CRITICAL BUSINESS OPERATIONS**



## FIRMS REACHED OUT TO CLIENTS VIA MULTIPLE MEANS

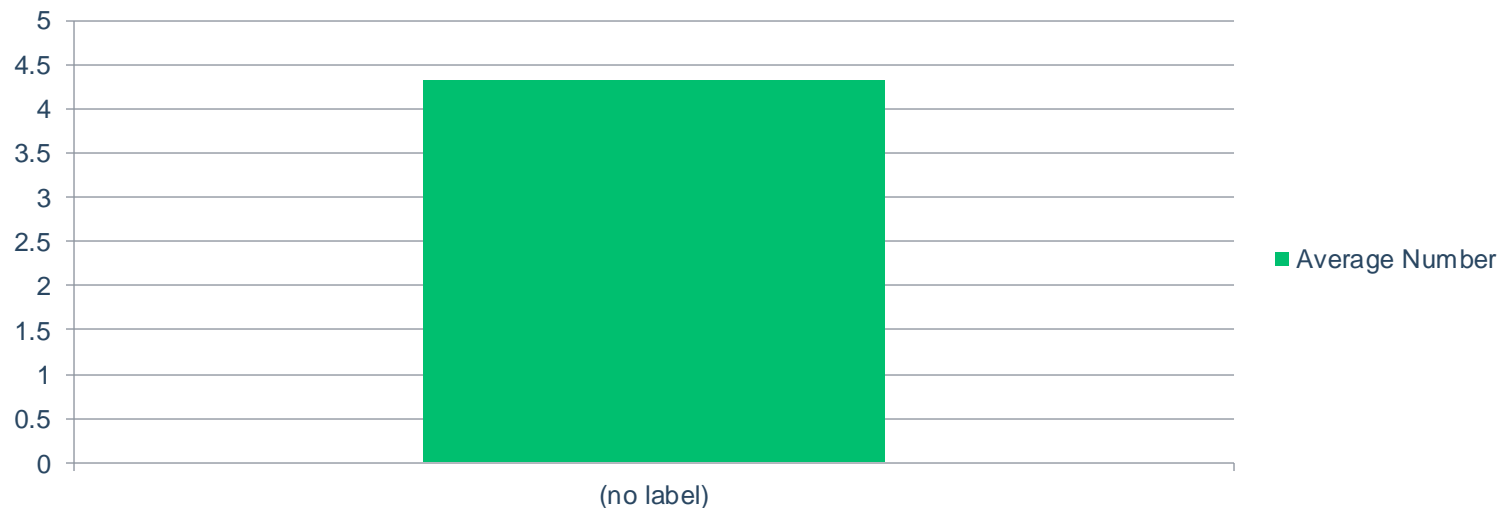
How did your firm reach out to its clients? (check all that apply)





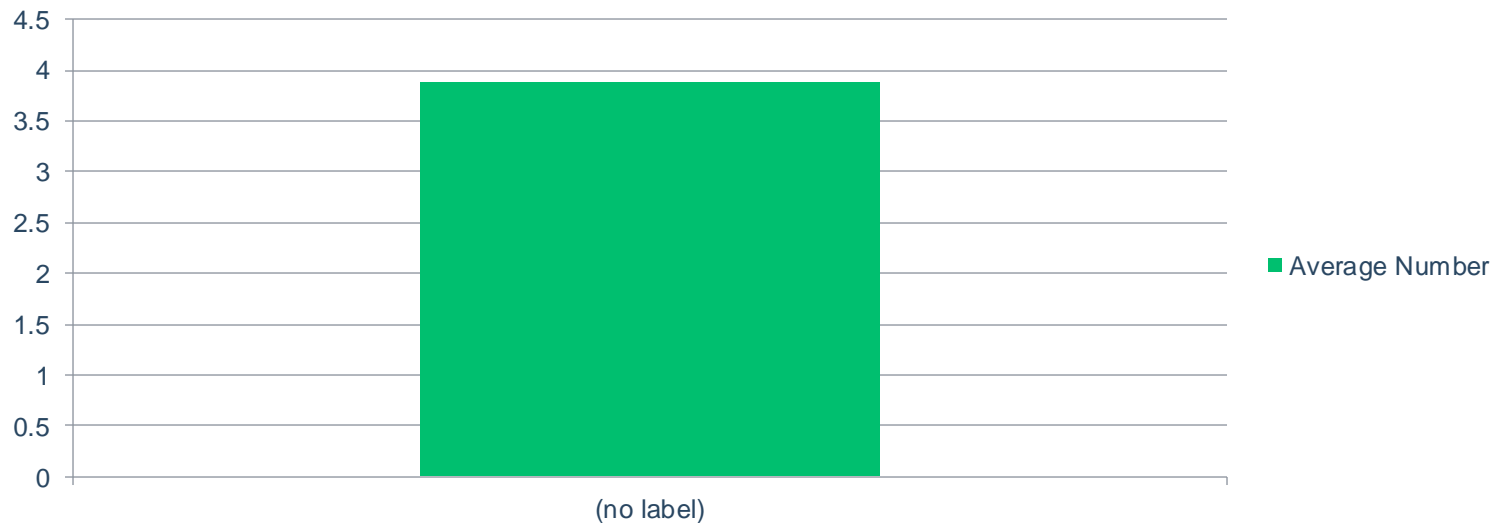
## **MOST FIRMS CONSIDERED THEMSELVES WELL-PREPARED TO RESPOND TO THE DISRUPTION**

How would you rank your firm's overall state of preparedness to respond to the disruption  
(Rank from 1-5 where 1= Not Well Prepared and 5=Very Prepared)?



## FIRMS RATED THEIR KEY SERVICE PROVIDERS AS WELL-PREPARED TO SUPPORT THEM

How would you grade the overall preparation and support from your key service providers?  
(Rank from 1-5 where 1= Not Well Prepared and 5= Very Prepared):





## II. BUSINESS AND SUPPLY CHAIN DISRUPTIONS





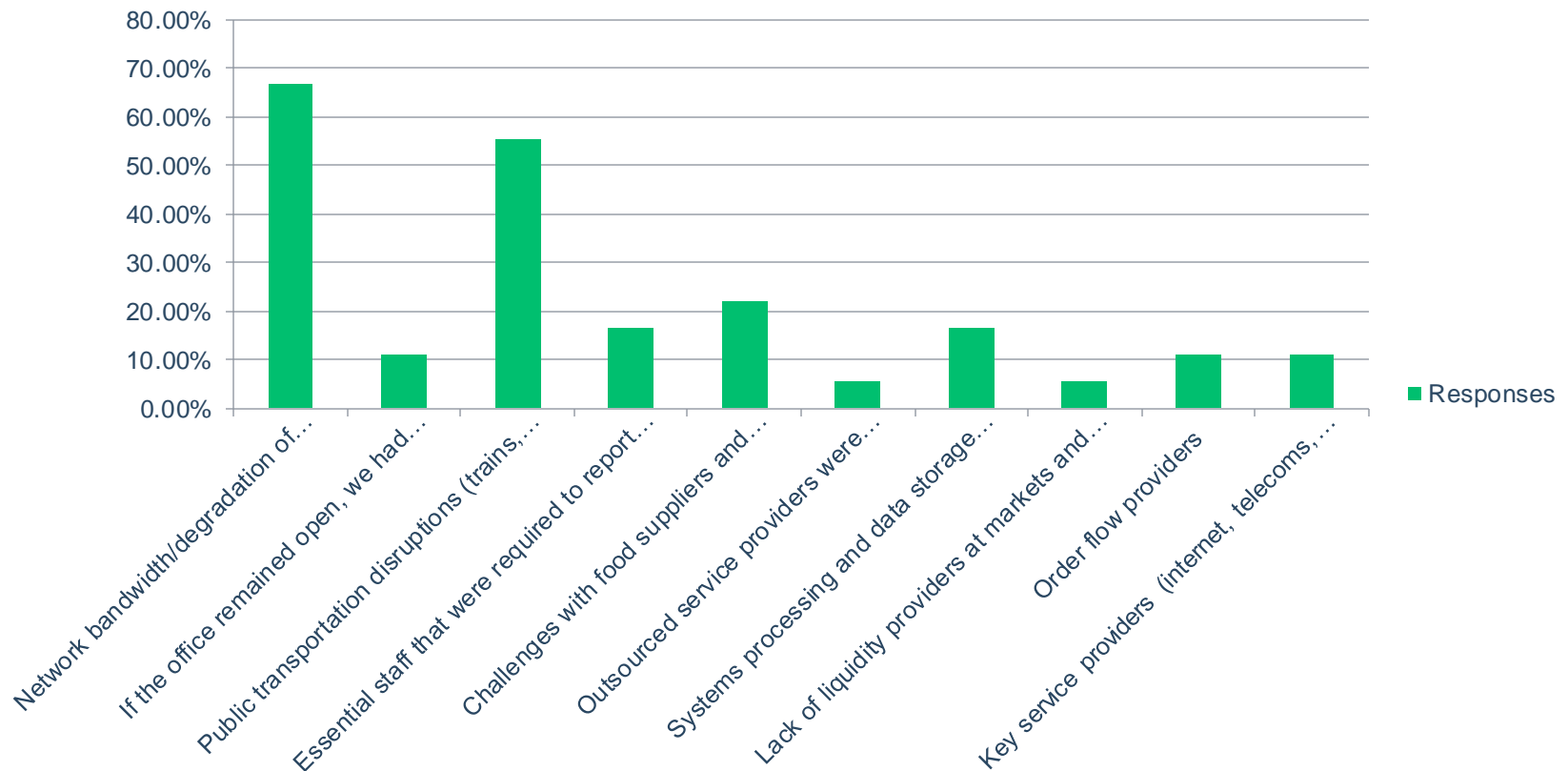
## <10% OF FIRMS EXPERIENCED SOME FORM OF BUSINESS DISRUPTION

After enacting the BCP and distancing the staff, did your firm conduct business without disruption?



# FIRMS EXPERIENCED VARIOUS TYPES OF C-19 RELATED DISRUPTIONS

What types of disruptions did your firm encounter (check all that are applicable)?



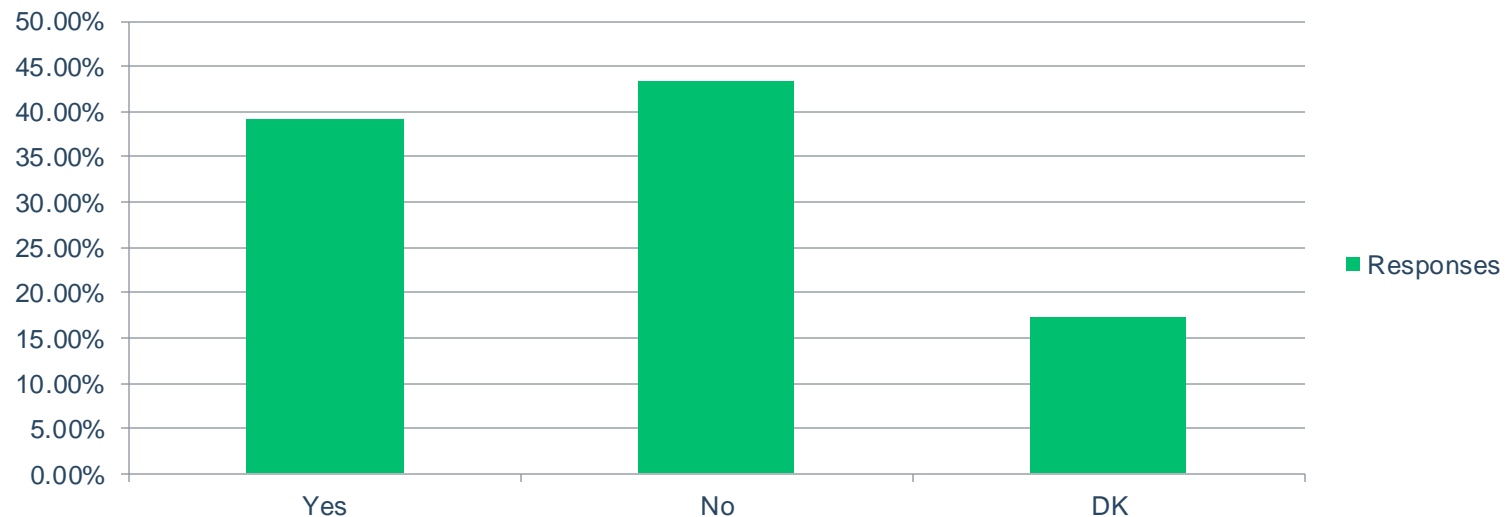


## **Q: What types of disruptions did your firm encounter?**

- Network bandwidth/degradation of services when working at home
- Public transportation disruptions (trains, subway, buses)
- Challenges with food suppliers and takeout food delivery
- Systems processing and data storage capacity constraints as a result of the excessive trading-related message rates (market data trades and quotes) and higher message traffic
- Essential staff that were required to report to the office had difficulty with access/were challenged by local police for travel authorization letters
- Lack of liquidity providers at markets and exchanges
- If the office remained open, we had disruptions with availability of janitorial staff to clean the facilities on a regular basis, trash collection/recycling and disposal or mail/express mail
- Outsourced service providers were impacted by local area telecom disruptions or degradation of services
- Order flow providers
- Key service providers (internet, telecoms, market data, EMS, etc.)

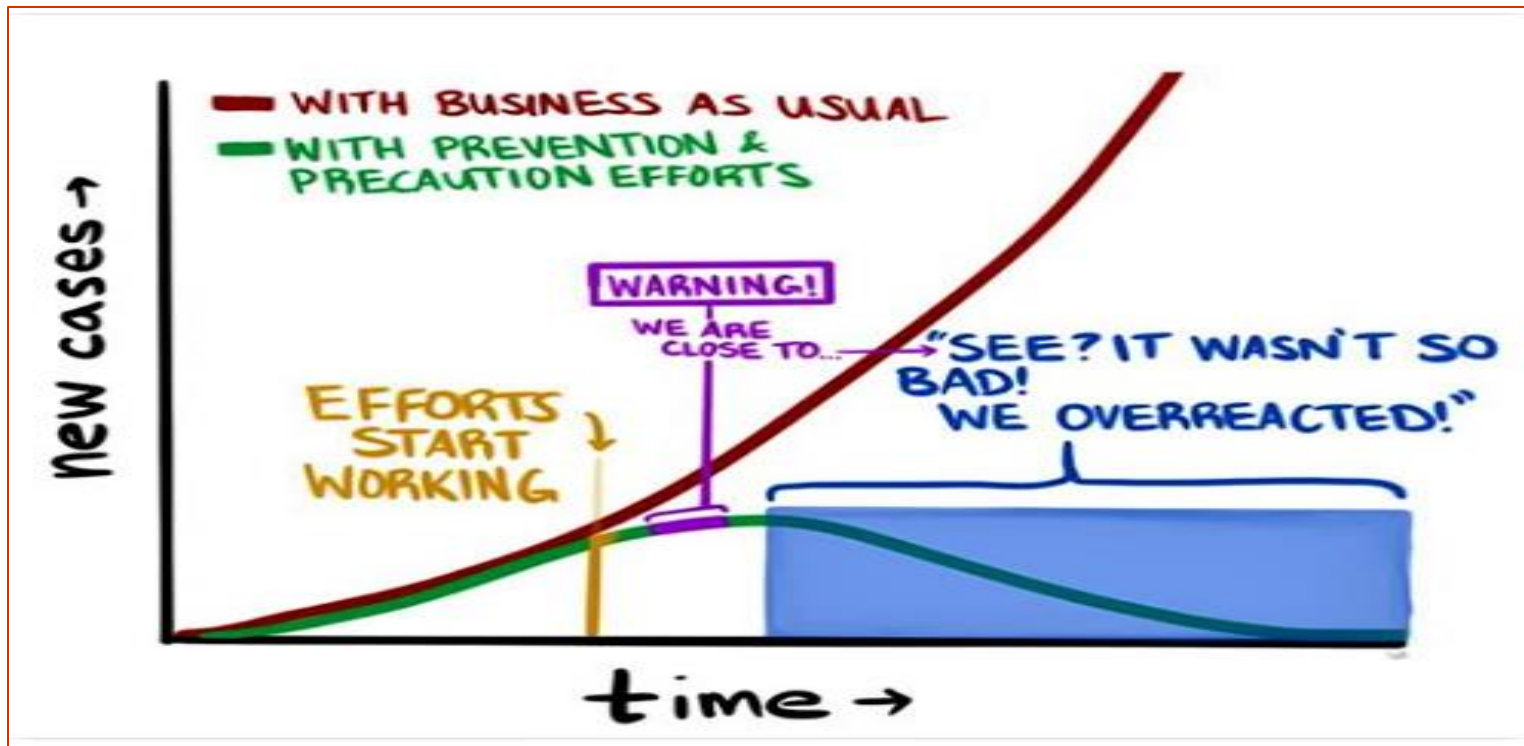
# **39% OF FIRMS HAD STAFF THAT WERE DIRECTLY / INDIRECTLY AFFECTED, C-19 DISRUPTED THEIR WORK FUNCTION**

Did you have staff that were directly or indirectly infected with COVID-19 (family members or significant others) that took them offline so they could not temporarily perform their work function?



### III.

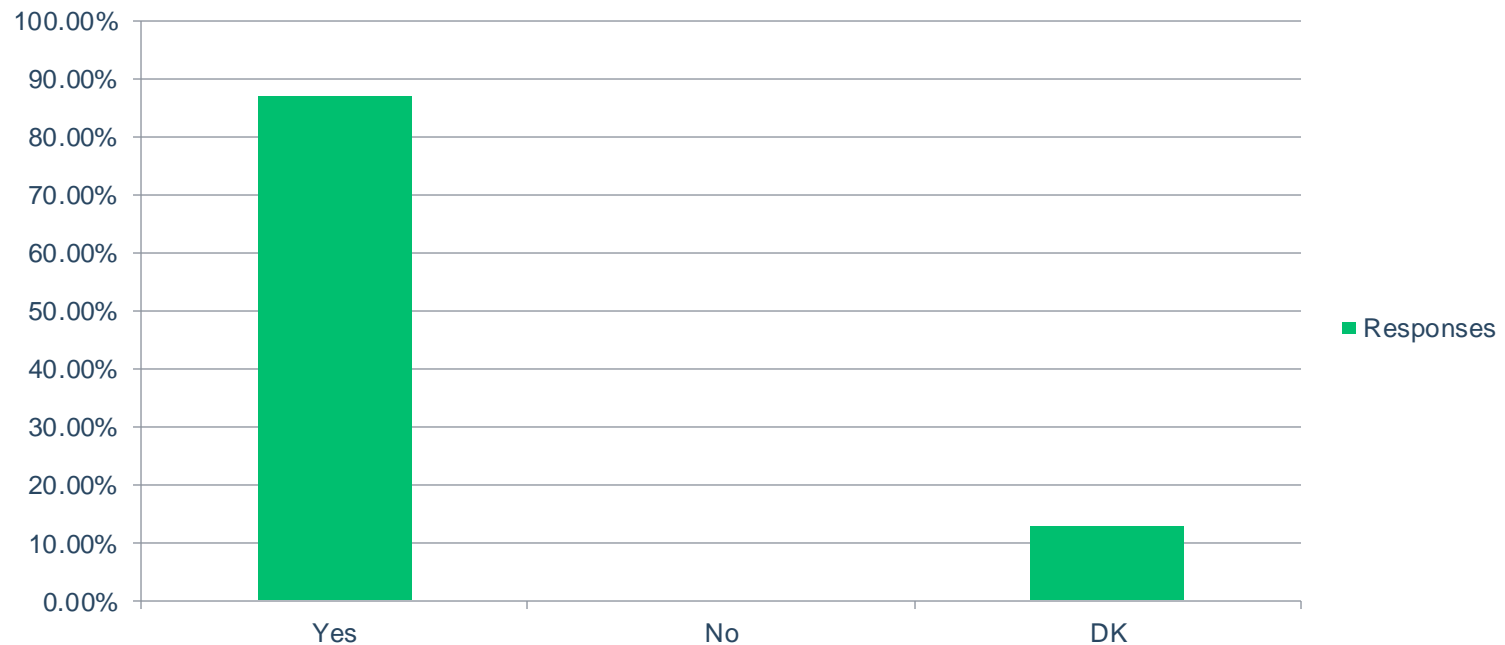
## RESPONSE





## **85% OF FIRMS HAVE AN EMERGENCY NOTIFICATION SYSTEM OR CALL TREE**

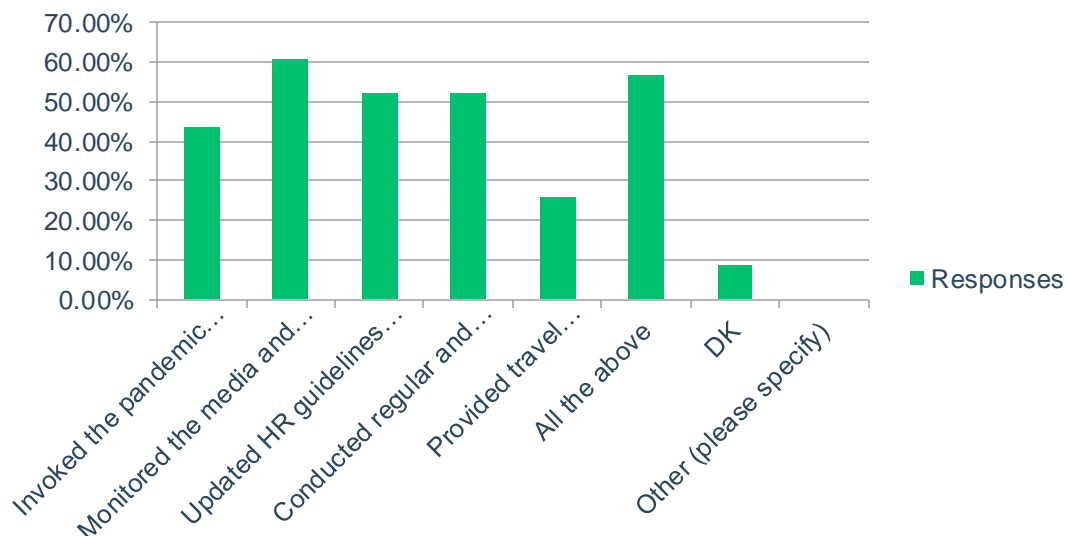
Does your firm have an emergency notification system (ENS) or call tree system?





# INCIDENT MANAGEMENT TEAMS AND KEY MANAGERS RESPONDED WELL

How did your key managers (e.g., the incident managers) respond to the emergency? Please check all that apply:



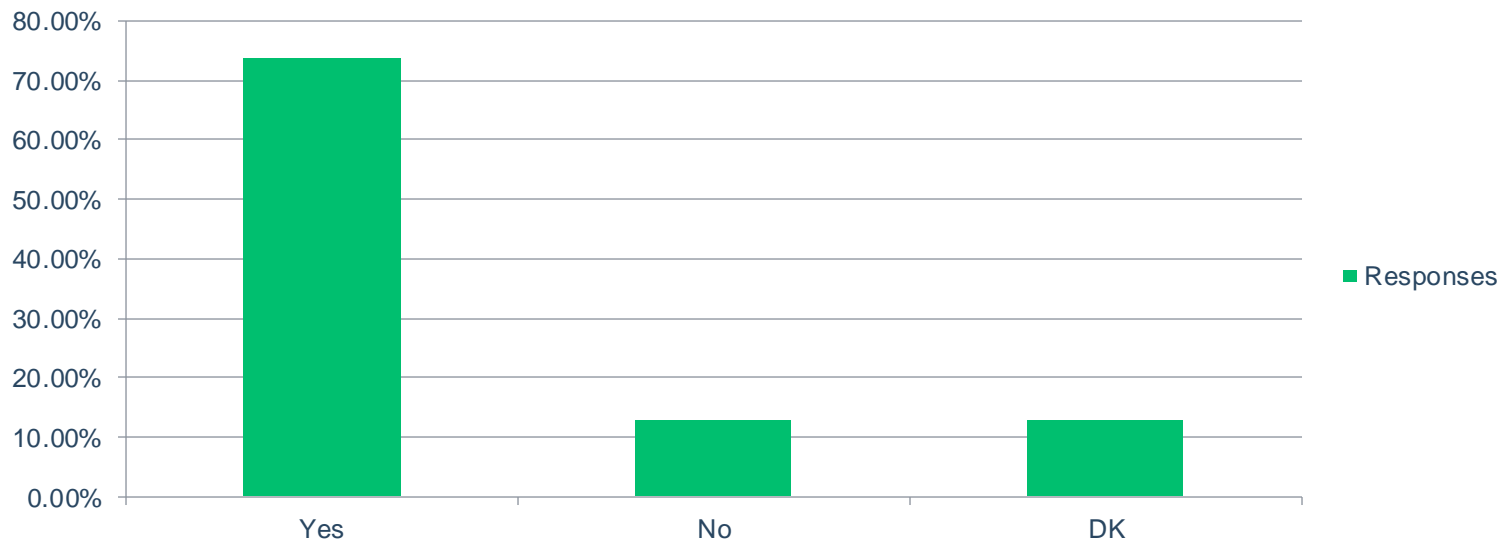
***How did your key managers and incident management team respond to the emergency?***

- Monitored the media and local conditions, making some tactical adjustments as the situation unfolded
- Conducted regular and ad-hoc conference calls to collaborate on the response
- Invoked the pandemic BCP
- Provided travel authorization letters for key staff in critical support functions who were required to report to the office.



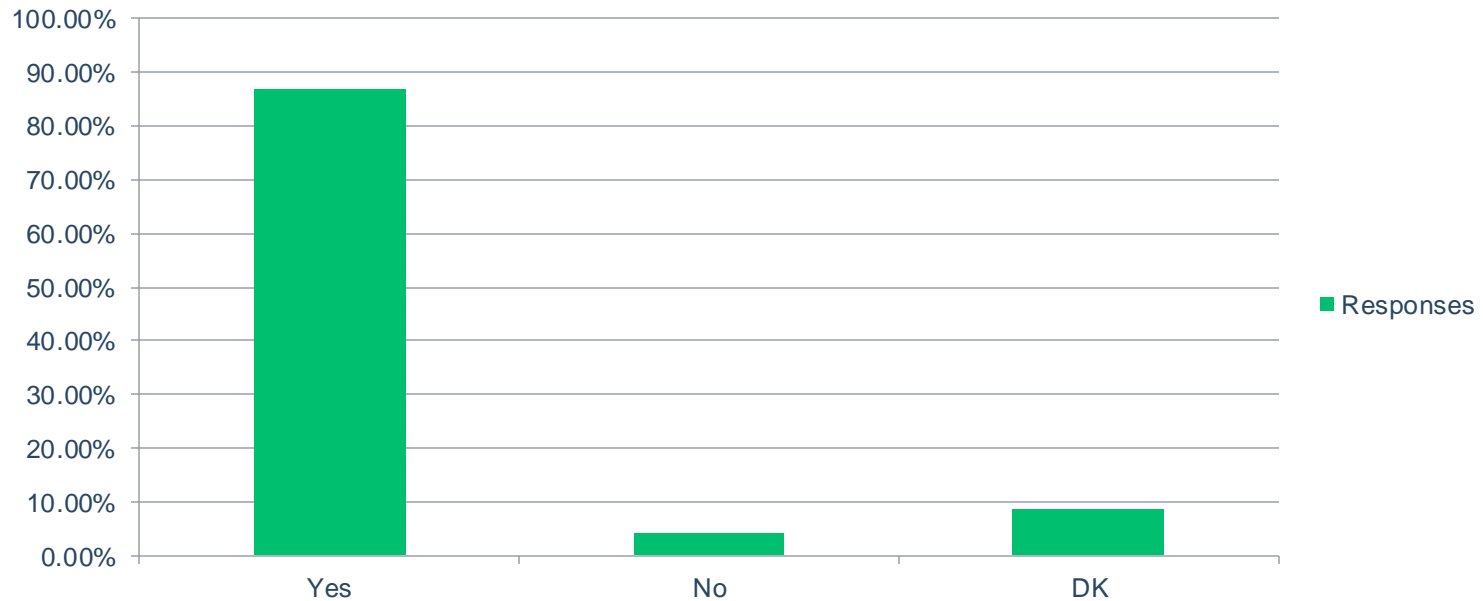
## **75% OF FIRMS COORDINATED THEIR RESPONSES WITH STATE/LOCAL HEALTH AGENCIES, REGULATORS AND BUILDING MANAGEMENT**

Did your firm coordinate its response with state or local health agencies, regulators and the building management company etc.?



## 85% OF FIRMS HAVE DESIGNATED EMERGENCY RESPONSE TEAMS

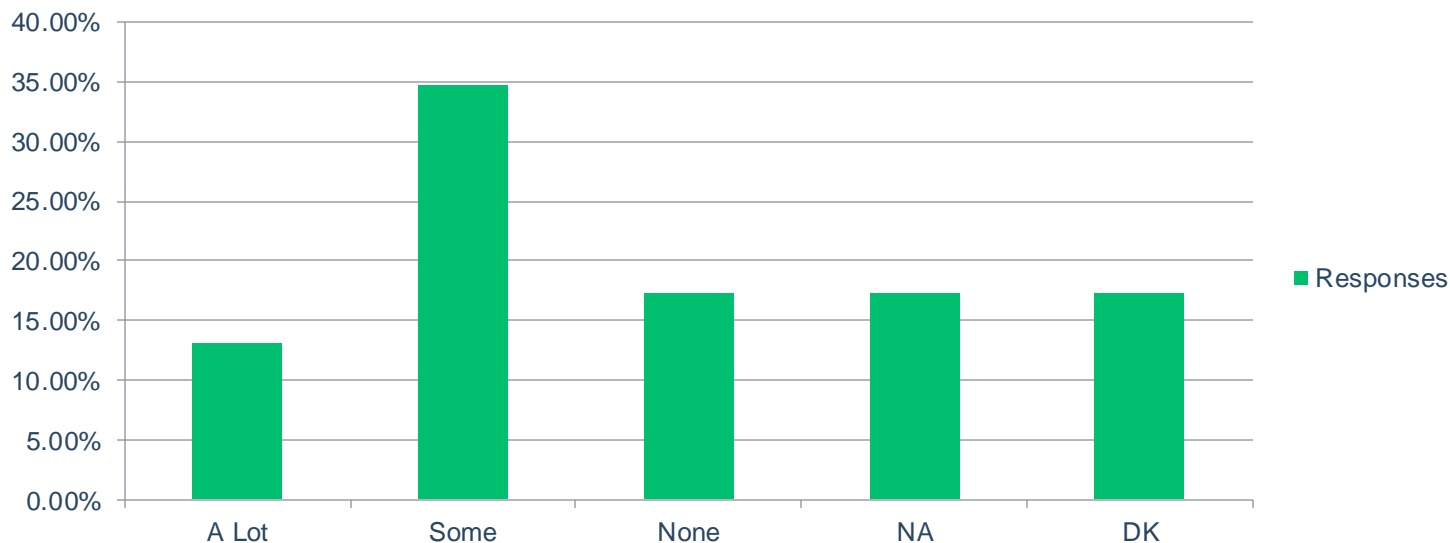
Does your firm have designated emergency response teams?





## **MANY FIRMS LEVERAGED THEIR STAFFS AND SERVICES OUTSIDE THE U.S. OR IN OTHER U.S. CITIES**

How much did your firm leverage staff/services from outside the U.S. or in other U.S. cities during the disruption?

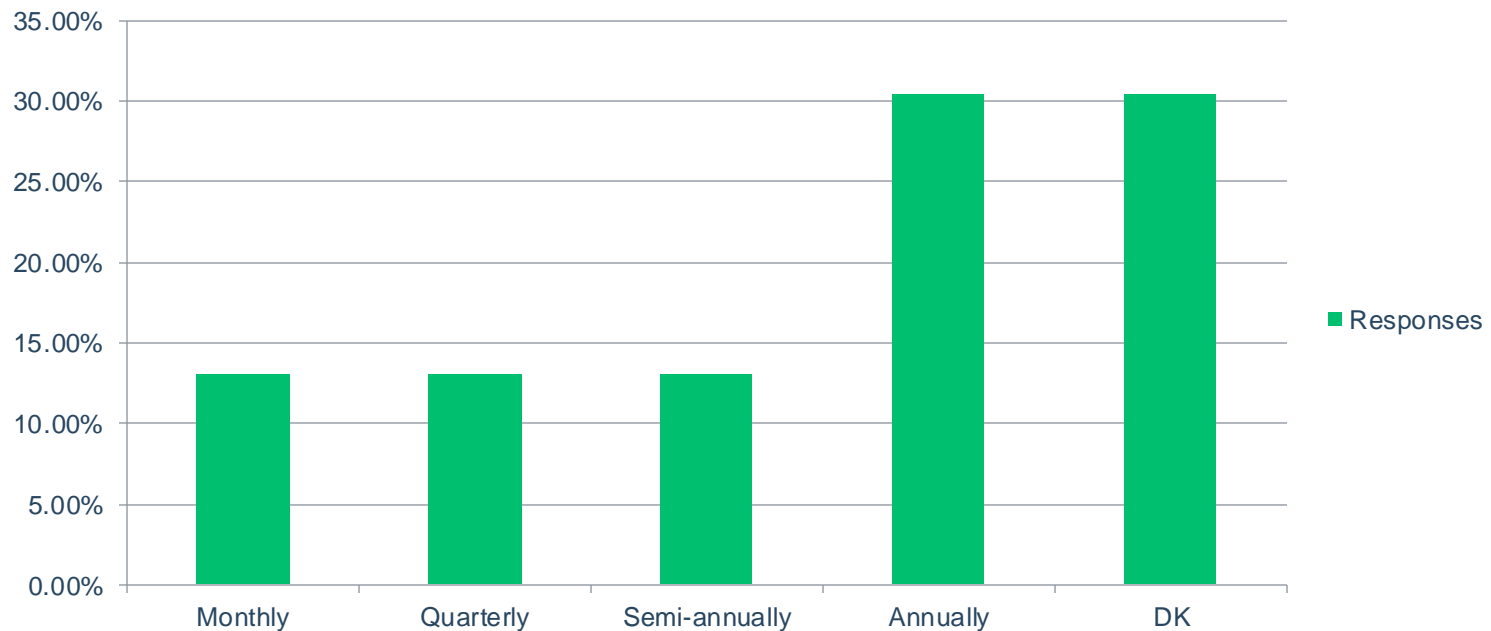


## IV. DISASTER RECOVERY AND RISK MITIGATION



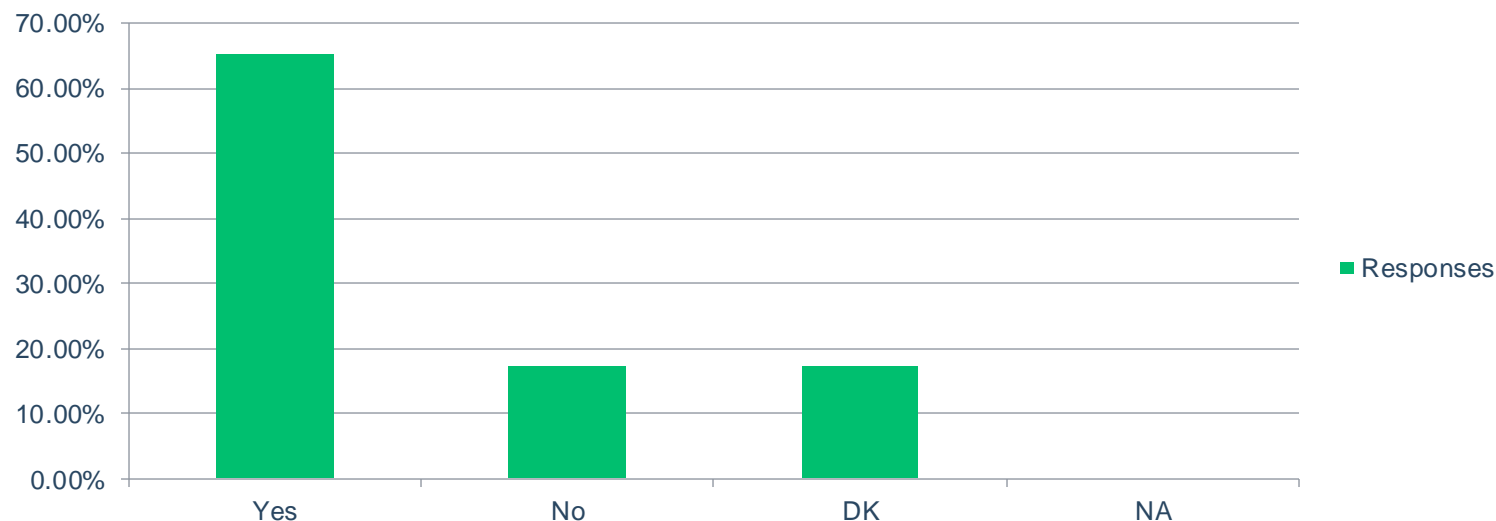
# MOST FIRMS CONDUCT REGULAR BC/DR TESTING

How often does your firm conduct BC/DR testing?



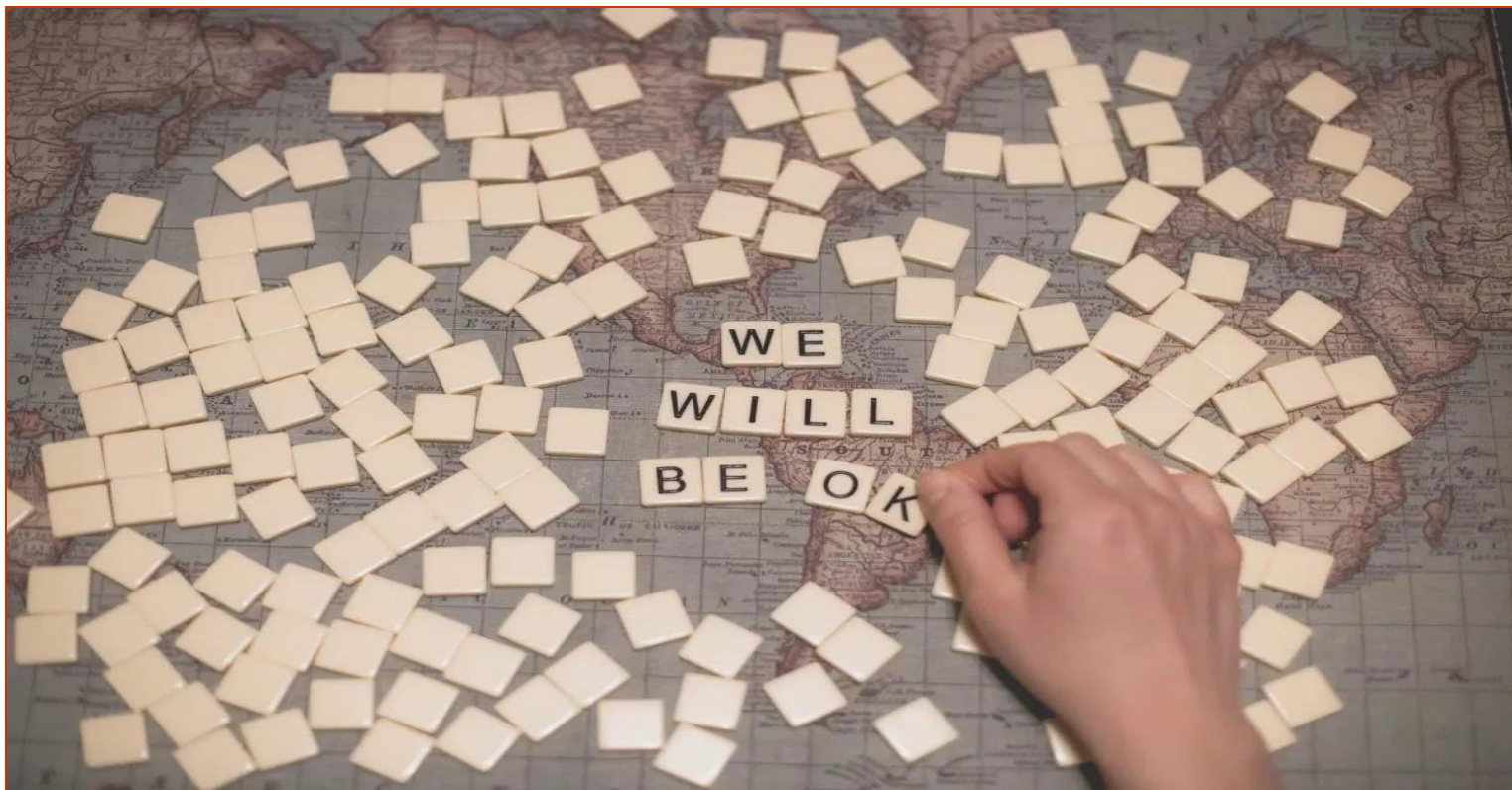
# 65% OF FIRMS CONDUCT REGULAR BC/DR TESTING, REMOTE WORKFORCE CONNECTIVITY FOR ALL THEIR LOCATIONS

Has your firm previously conducted business continuity tests, remote workforce connectivity, access and telecommuting for all locations?



D.

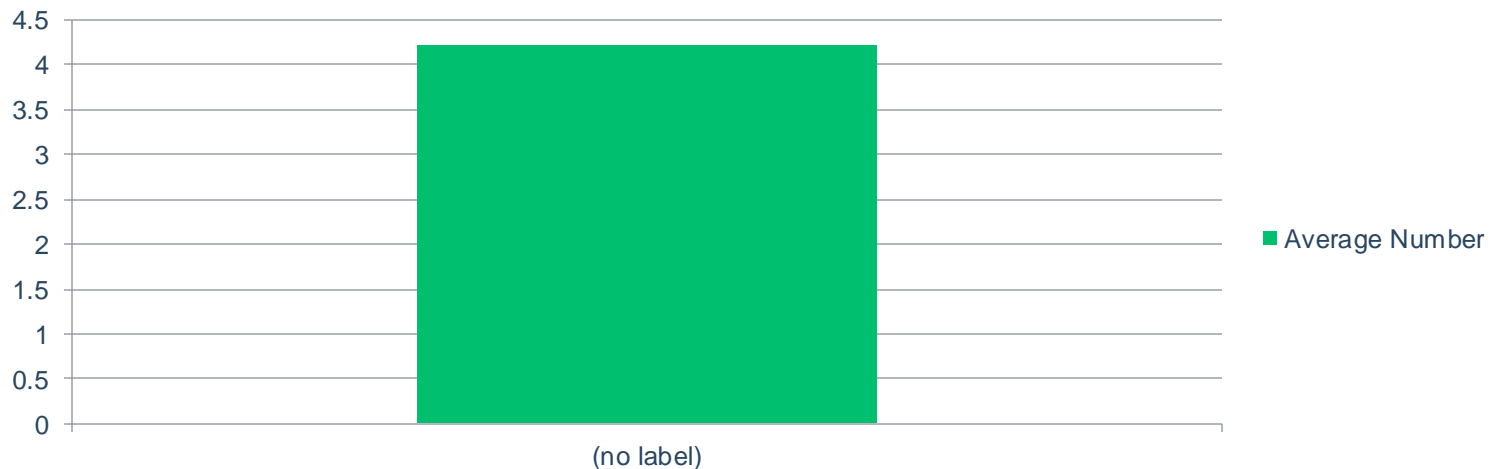
## LESSONS LEARNED





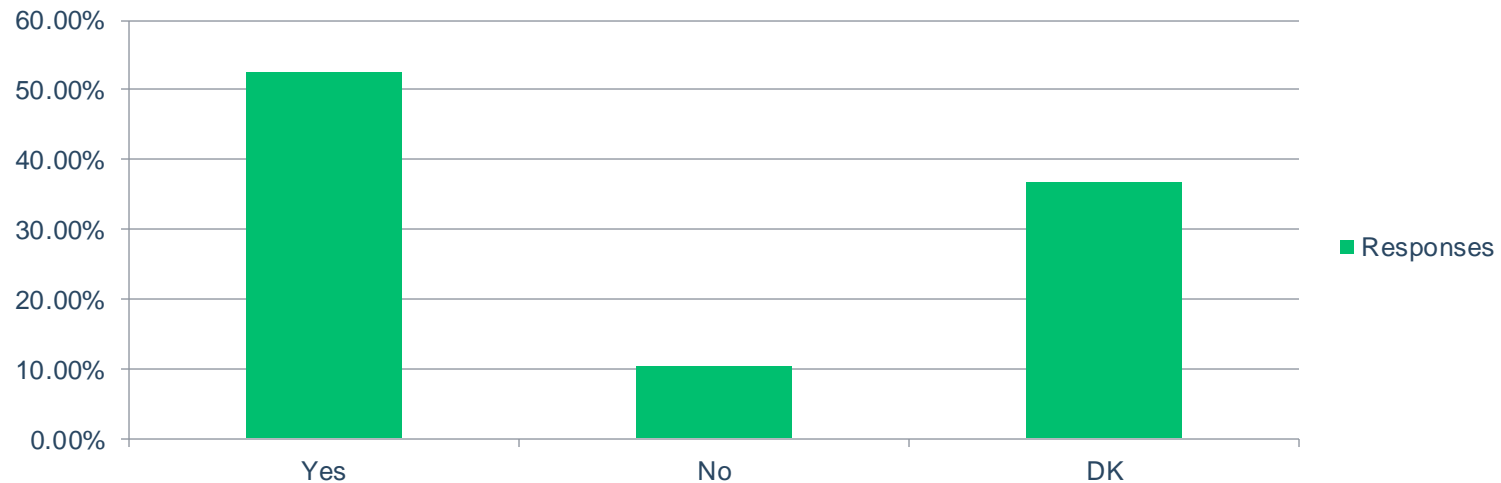
## GIVEN THE LEAD TIME AND MEDIA COVERAGE, MOST FIRMS WERE VERY PREPARED

Unlike sudden-onset disasters, the global spread of the pandemic dominated the news for weeks prior to major impacts in the U.S. How do you rate your firm's preparedness and actions, given the lead time? Based on the lead time for warnings please rank (1-



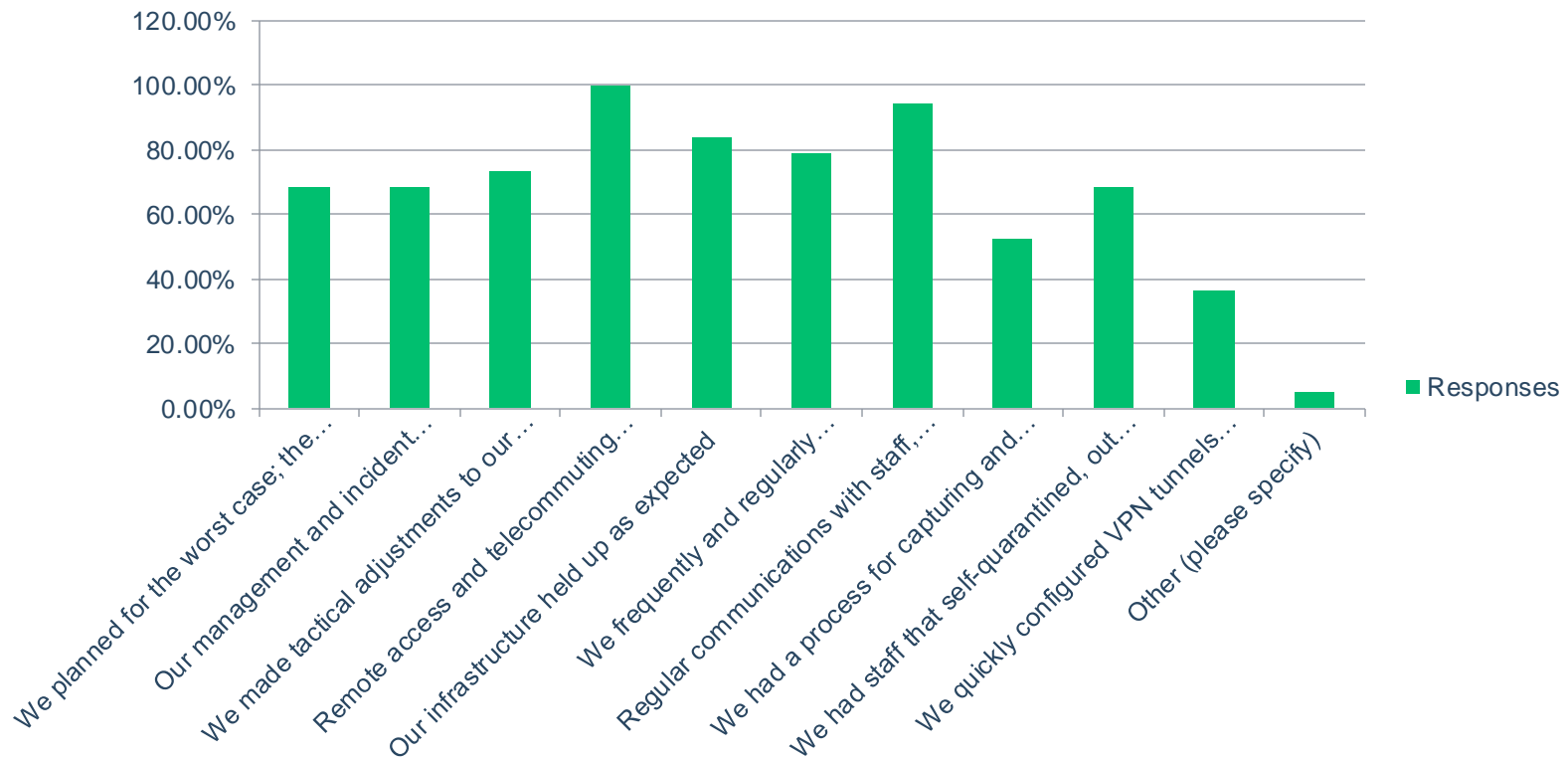
# 52% OF FIRMS MADE TACTICAL ADJUSTMENTS TO THEIR PREPAREDNESS BEFORE INVOKING THEIR BCP, MOBILIZING STAFF

Did your firm make any adjustments to its BCP preparedness and responses between the time that the WHO declared it a global emergency (Jan 30) the time your plan was invoked and staff mobilized?



# MANY THINGS WORKED REALLY WELL !

In retrospect, what worked well for your firm (check all that apply):



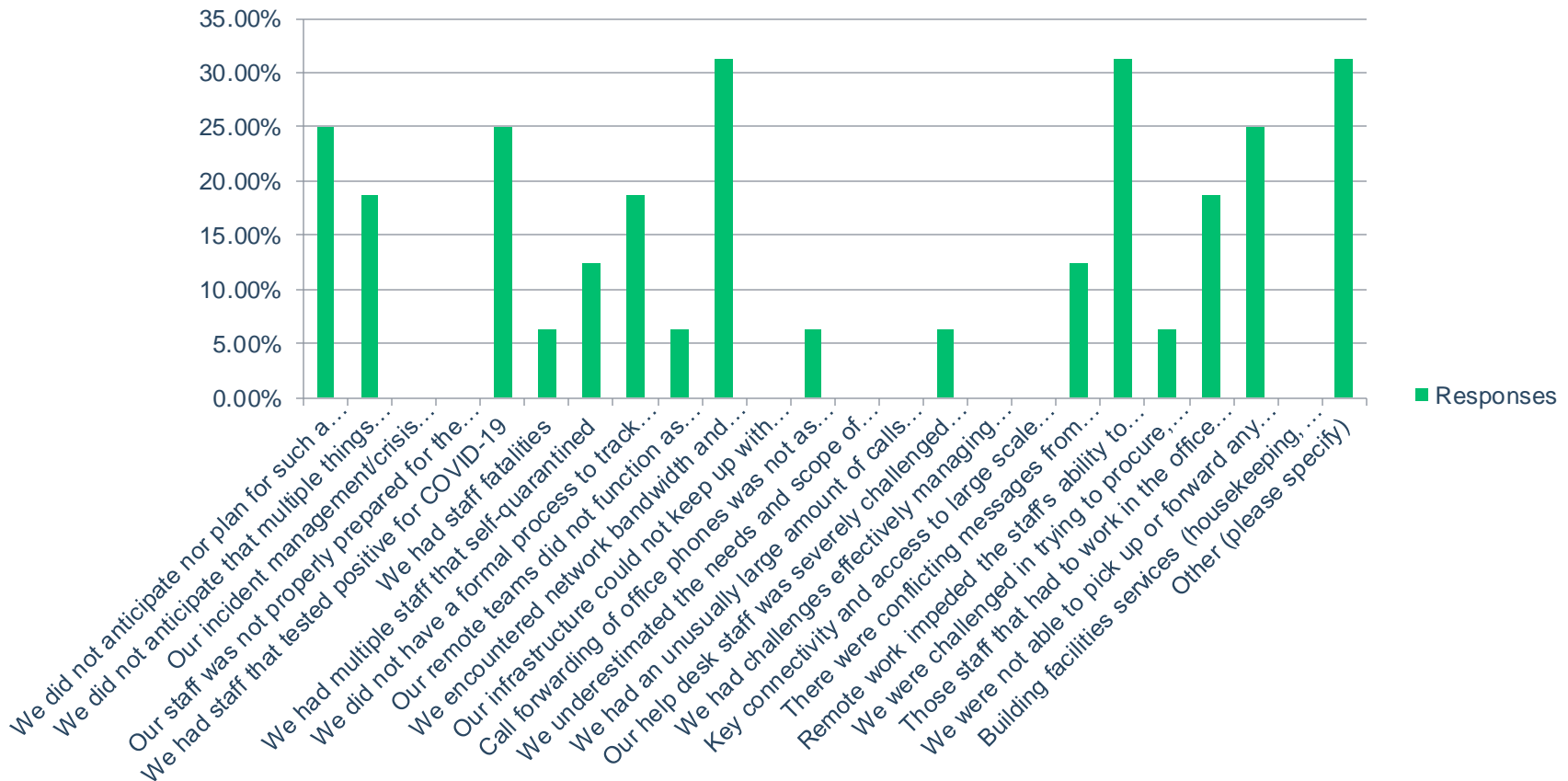


## **Q: In retrospect, what worked well for your firm**

- Remote access and telecommuting worked well
- Regular communications with staff, clients and counterparties was very effective
- Our infrastructure held up as expected
- We frequently and regularly communicated with our remote workforce to discuss the state of the business and to assess their wellbeing
- We planned for the worst case; the staff was prepared and responded well under the circumstances; testing of staff, infrastructure and systems paid off
- We quickly configured VPN tunnels and deployed robust workstations to trading staff homes that required them
- We made tactical adjustments to our plan, as the virus situation and market conditions changed
- We had staff that self-quarantined, out of an abundance of caution
- We had a process for capturing and reporting staff health and wellness issues

## BUT A NUMBER OF THINGS DID NOT ...

What did not work well (check all that apply):





## **Q: What did not work well**

- We did not anticipate nor plan for such a widespread, catastrophic event and the dynamic impacts from accompanying emergency orders and resultant workforce reductions
- We had multiple staff that self-quarantined
- We did not have a formal process to track staff health and wellness issues
- Our remote teams did not function as smoothly as they could have
- Our infrastructure could not keep up with the demands from remote users
- Call forwarding of office phones was not as seamless as we expected
- We had an unusually large amount of calls from clients and could not serve them as promptly and efficiently as possible
- Our help desk staff was severely challenged by the constant and heavy amount of problem calls
- We were challenged in trying to procure, configure and deploy laptop computers and workstations to critical staff and sales/traders



## **THE BIGGEST, MOST UNPLESANT SURPRISES .. ...**

- The scope, magnitude and duration of the contagion.
- The widespread scale of the disruption and the rate and the number of businesses that shut down so quickly.
- The extended length of work from home (WFH).
- Inability to immediately migrate to remote WFH.
- Ability to forward express mail and packages.
- Sporadic network bandwidth and degradation of service.
- “When the CME floor closed”.
- Inability to hire/train staff via remote WFH.



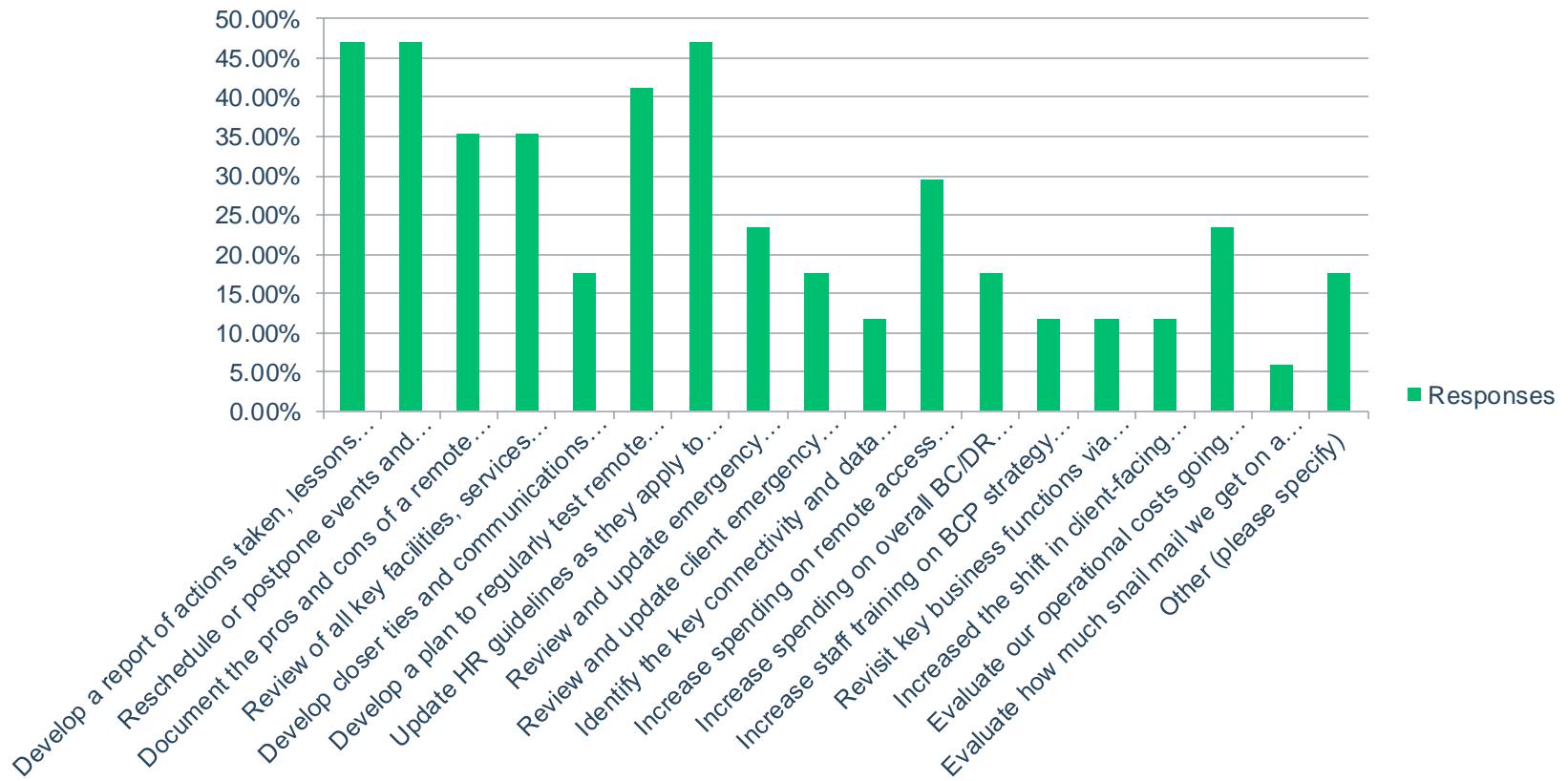
## **THE BIGGEST MISSTEPS IN PLANNING, PREPARING AND RESPONDING ...**

- Underestimating the speed and ferocity of the virus, and believing that this would pass.
- The expectation that all employees globally, would go to remote working.
- Not heeding messages from the authorities early on.
- The inability to go completely remote.
- Not ordering enough computing equipment (or soon enough) for remote workers.
- The scope of the effort involved in outreach to staff and clients.
- Underestimating time.



# FIRMS PLAN NUMEROUS CHANGES, GOING FORWARD

What areas does your firm plan to make changes to going forward (check all applicable)?





## **Q: In what areas does your firm plan to make changes to going forward?**

- Develop a report of actions taken, lessons learned etc., and a plan to address/mitigate short-term and long-term issues, risks and recommendations
- Reschedule or postpone events and meetings to later in the year/next year
- Update HR guidelines as they apply to managing a remote workforce of essential and non-essential personnel, needs for collaboration etc.
- Develop a plan to regularly test remote access infrastructures, collaboration tools and remote workforce capabilities
- Document the pros and cons of a remote work force under this adverse scenario
- Evaluate our operational costs going forward, due to increased safety measures and social distancing guidelines.
- Increase spending on remote access infrastructure, collaboration tools and network capabilities, overall BC/DR planning and preparedness, checklists for the remote workforce
- Increase staff training on BCP strategy and tactics
- Review of all key facilities, services providers and infrastructures that support the business
- Review and update emergency communications tools and procedures, client communications plans
- Identify the key connectivity and data needs for users of large data sets and complex data operations for those in revenue-generating functions



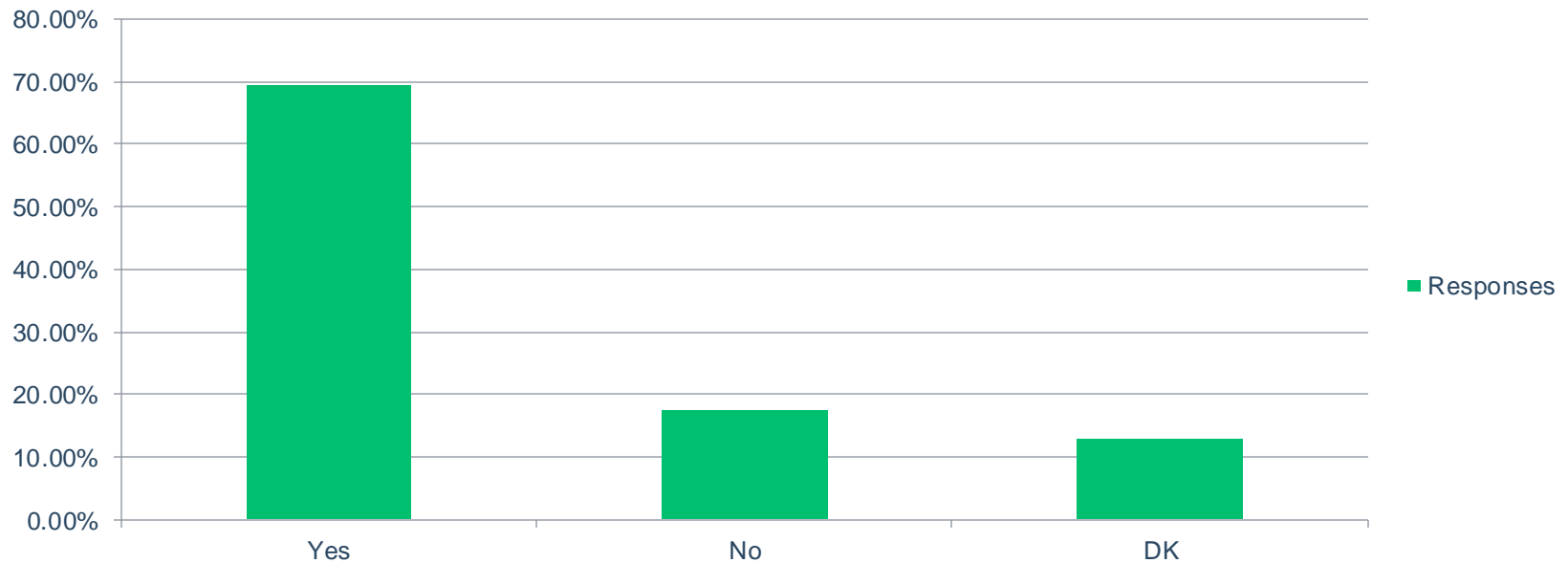
## E. FIA ENGAGEMENT AND RESPONSE

- The FIA coordinated a number of industry calls, distributed daily emails and web site postings to update the membership.
- Respondents found these helpful in their preparedness, planning and response.
- Many firms have response plans in place to address unscheduled market closures.



## 70% OF FIRMS PARTICIPATED ON THE FIA COVID-19 UPDATE CALLS

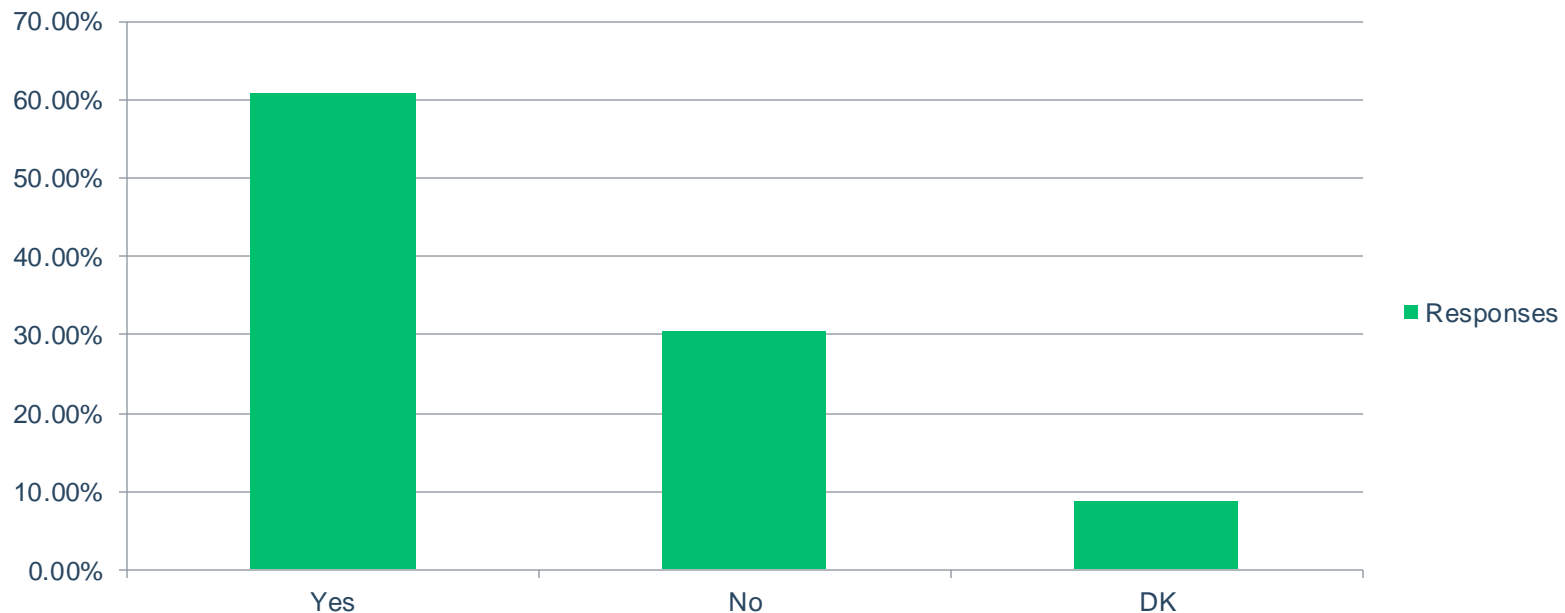
Did your firm participate on any of the FIA COVID-19 update calls during the peak of high volume/volatility from early March through mid-April?





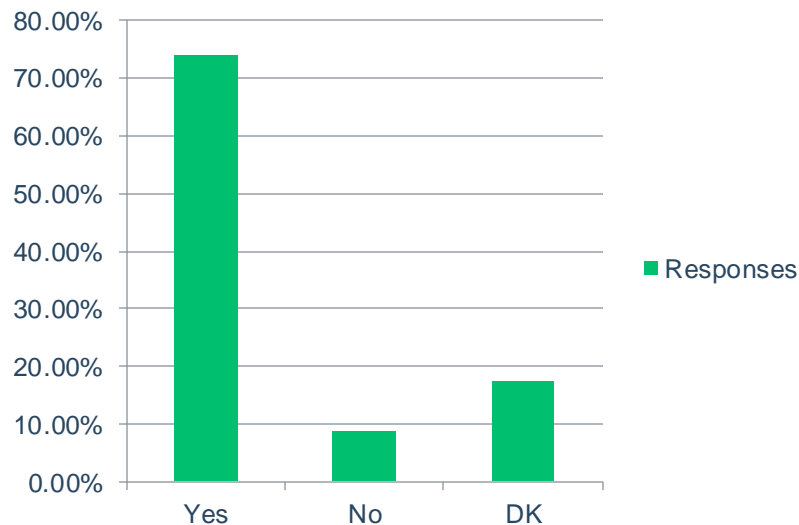
## FIA'S COVID-19 UPDATES WERE HELPFUL TO MARKET PARTICIPANTS

Did you visit FIA's COVID-19 web page to monitor the latest developments related to COVID-19 and its impact to the global cleared derivatives industry?

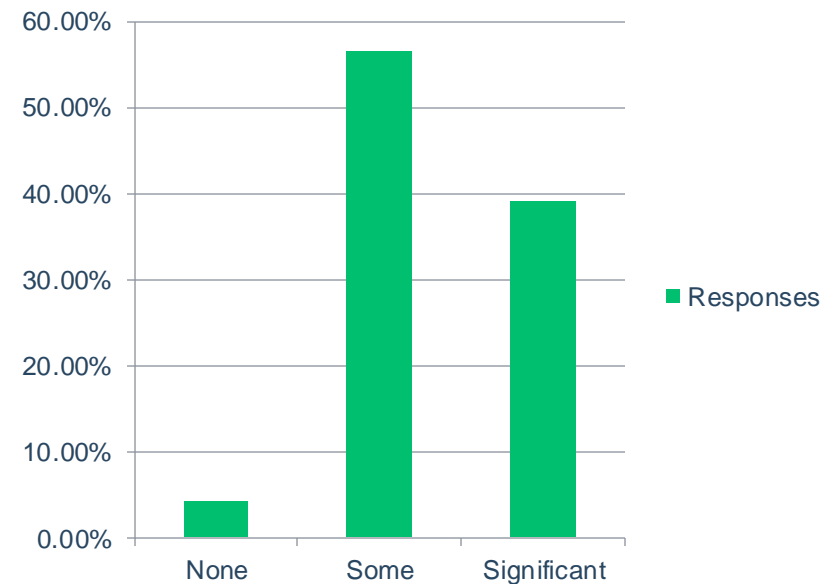


# DAILY COVID-19 UPDATE EMAILS FROM FIA WERE RECEIVED AND VALUABLE TO MOST FIRMS

Did you receive FIA's daily COVID-19 global updates email sent during March and April?



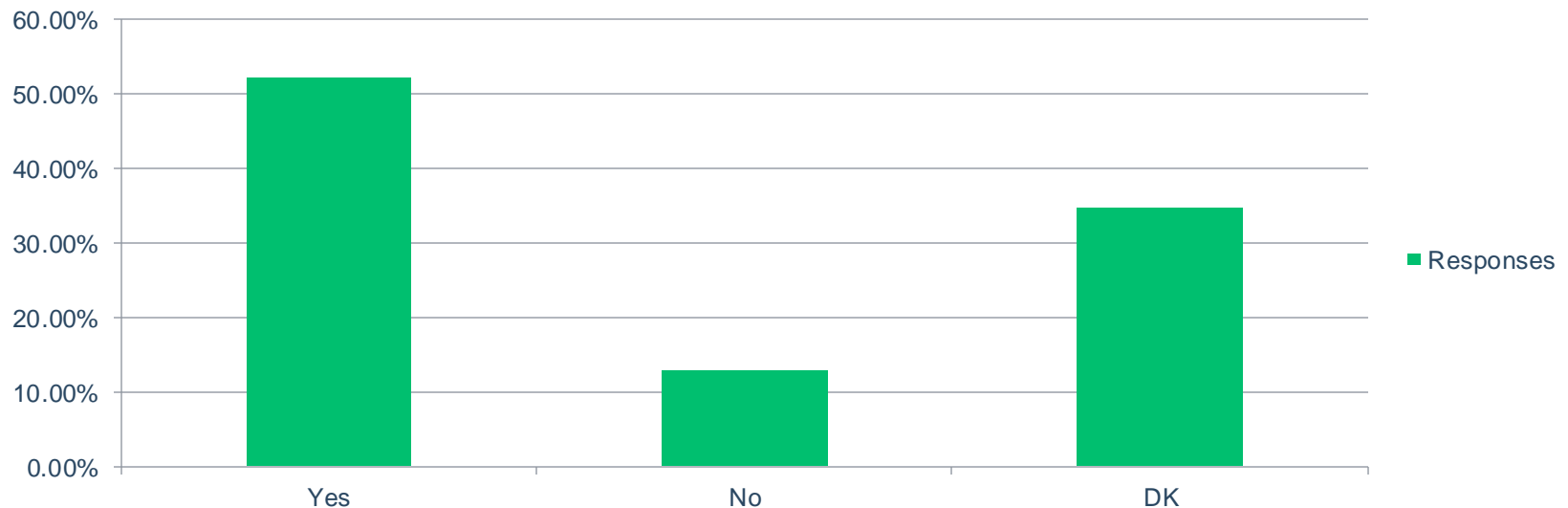
If yes, how valuable were they to you or your firm's readiness and response?





## PARTICIPATION IN REGULAR INDUSTRY READINESS DISCUSSIONS ARE OF INTEREST TO MOST FIRMS

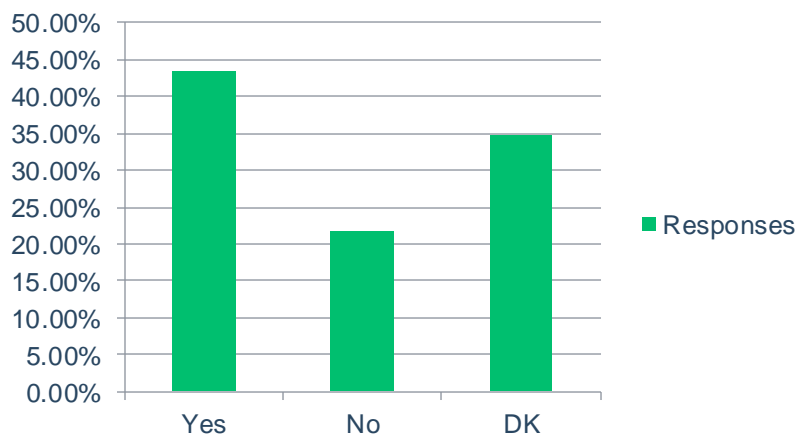
Would your firm be interested in participating a yearly or semi-annual cleared derivatives industry disruption readiness FIA committee to discuss general business continuity topics and coordinate response to future industry disruptive events?



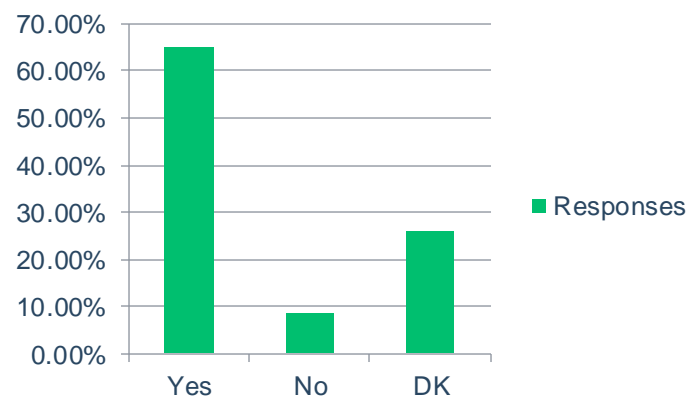


# **MANY FIRMS HAVE RESPONSE PLANS TO ADDRESS UNSCHEDULED MARKET CLOSURES; MOST WOULD PARTICIPATE IN FIA INFO SHARING CALLS**

Does your firm have specific response plans in place in the event of an unscheduled market closure impacting one or more exchanges?



Would your firm have interest in participating in an FIA information sharing industry call in the event of an unscheduled market closure?





F.

## CONCLUSIONS





## **Conclusions(Cont'd) ...**

- Even the most thoughtful, best tested plans do not contemplate multiple events all going wrong at the same time.
- Most firms have implemented a resilient technology infrastructure and a mature business continuance structure and business continuity awareness.
- Firms were well-prepared, given the advanced warnings and media coverage.
- Firms need to better encourage the personal preparedness of their staff.
- Those that planned well, generally fared well.



## G.

## **SUGGESTED NEXT STEPS**

- Develop a report of actions taken, lessons learned and a plan of action to address/mitigate any deficiencies or risks.
- Evaluate the pro's and con's of a remote workforce under such an adverse scenario.
- Analyze and provide additional hardening of key staff home computing set ups.
- Budget for increased spending on technology infrastructure required to support a large remote workforce and new social distancing guidelines.



## **Suggested Next Steps (Cont'd) ...**

- Conduct post-mortem evaluations to learn from the experience – what worked well, what didn't:
  - The state of staff's home computing set ups, remote collaboration experiences
  - Identify gaps, update plans, processes and technology accordingly
- Post-mortem reviews should consider:
  - Potential vulnerabilities of key service providers, especially ASP and cloud service providers
- Closely monitor conditions in your city/state.
- Don't hesitate to take a "step back" if the pandemic starts a new surge (retreat, regroup and be prepared to fight again).

# ***Be Prepared for The Unexpected Things That Can Jump Out at You...***





## ***About Tellefsen and Company***

Tellefsen and Company is a boutique management consulting firm. We have an extensive working knowledge of the global capital markets and derivatives industries, and have worked for numerous futures commission merchants, investment management firms, private equity firms, securities broker-dealers, equity, futures and options exchanges, clearing houses and technology vendors to these markets.

As a result, we have:

Significant domain knowledge and client experience with exchange traded derivatives within investment management firms, futures commission merchants, global clearing firms, futures exchanges and clearing houses.

Active involvement on boards, committees and working groups of the Futures Industry Association.

A large network of client and industry contacts within major investment management firms, futures commission merchants, global clearing firms, service providers, futures exchanges and clearing houses.

Strong backgrounds in multi-asset trading, operational risk management, business requirements gathering, strategic planning, project management, analysis and design of mission-critical order management, trading, risk management and securities processing systems.

A solid working knowledge of front and back office operations and related technologies within diversified financial services organizations, major trading platform providers, FCMs and investment banks.