

Survey Results of Laboratories Performing Molecular Testing for Cancer



Providing global expertise in molecular testing that drives patient care.

In order to better understand the contribution laboratories are making and the challenges they are facing during the COVID-19 pandemic response, AMP created a [series of robust surveys](#) to collect and document laboratories' efforts and experiences throughout the course of the pandemic. These surveys allowed us to monitor, understand, and collect real-time data on laboratories' efforts and experiences during the COVID-19 pandemic response. AMP members continue to be on the front lines of clinical laboratory response to and diagnosis of emerging infectious agents using molecular diagnostics, with multiple educational, clinical practice, and advocacy efforts occurring in collaboration with many of our organization partners. Most recently, in order to help coordinate and communicate the organization's continued efforts to guide diagnostic testing during the pandemic, AMP formed the [AMP COVID Response \(ACR\) Steering Committee](#).

While our previous surveys shone light on how supply and staff shortages were affecting COVID-19 diagnostic testing, we aimed in this survey to better understand if and how COVID-19 has affected clinical molecular testing more broadly, with a focus on molecular testing for cancer during the pandemic. The preliminary information contained in this report is the result of a joint data collection effort by AMP clinical practice and advocacy regarding our members' experiences as they work to respond to the COVID-19 pandemic. As the pandemic continues we will work to assist in resolving today's problems and establish future best practices to improve pandemic response.

AMP's 2,500+ international membership includes professionals from academic and community medical centers, government, and industry functionally involved in educational, medical, scientific, economic, and regulatory aspects of molecular diagnostics, including but not limited to pathologists and doctoral scientist laboratory directors, basic and translational scientists, technologists, and trainees.

This survey was made possible with support from Amgen and Pfizer.



Survey Objective and Overview

- **Objective:** Molecular testing laboratories provide testing crucial for diagnosing and managing cancer. This survey aims to better understand the full extent that the COVID-19 pandemic has had on these laboratories.
- This survey was conducted between September 29 and October 14, 2020 and is the fourth in a series of SARS-CoV-2 pandemic response surveys.
- The 27 question survey was anonymous employing multiple choice, select all that apply, and free text question formats. Skip logic was employed to tailor follow-up questions based upon responses. The questions assessed different aspects of molecular testing for cancer during the COVID-19 pandemic, including:
 - Laboratory demographics
 - Laboratory volumes
 - Laboratory operations
 - Clinical trial testing
 - Patient samples
 - Turnaround times



Survey Background and Purpose:

The COVID-19 pandemic has had a profound effect on healthcare worldwide. Molecular testing laboratories that provide testing crucial for diagnosing and managing cancer are not immune from these effects of COVID-19; and, the understanding of the full extent that COVID-19 has had on these laboratories remains unknown. As the COVID-19 response continues to evolve, we are working to understand in more detail the effects the COVID-19 pandemic has had on molecular testing for cancer. This survey was conducted between September 29 and October 14, 2020 and is the fourth in the series of SARS-CoV-2 pandemic response surveys to laboratories. The purpose of this survey was to document how national and international laboratories that provide molecular testing for cancer were affected by the pandemic. The target audience for this survey was laboratory professionals performing molecular testing for cancer, including somatic and/or hematological cancers. This survey was anonymous and results will be used in aggregate to help inform advocacy and clinical practice programs on this issue.

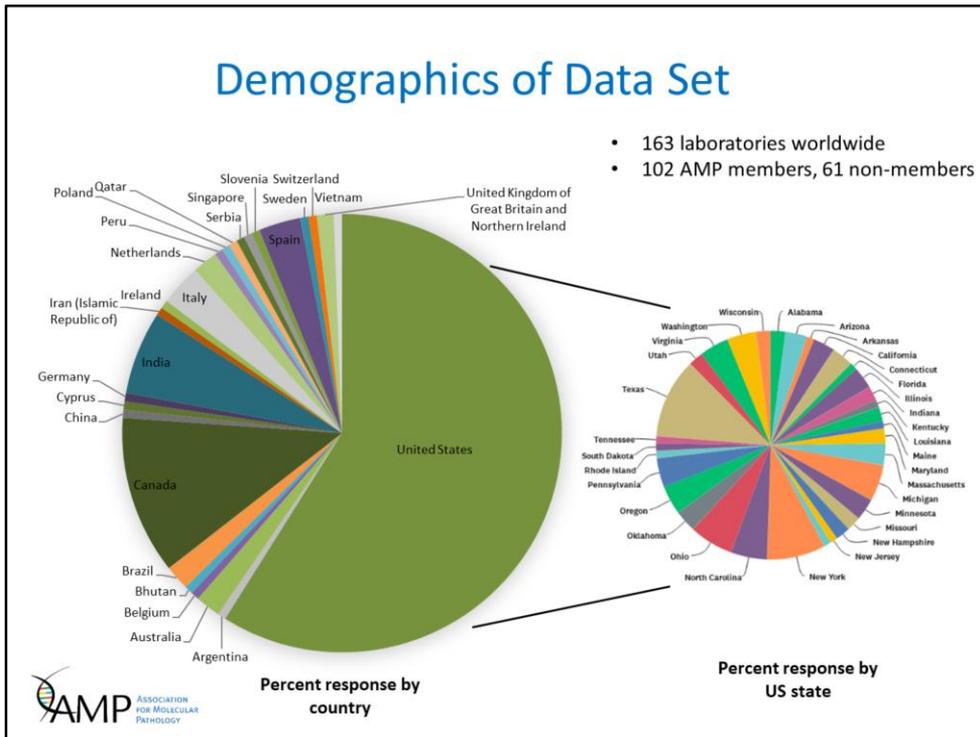
The 27 question survey employed multiple choice, select all that apply, and free text question formats. Skip logic was employed to tailor follow-up questions based upon responses. The questions assessed different aspects of molecular testing for cancer during the COVID-19 pandemic, including:

- Laboratory demographics
- Laboratory volumes
- Laboratory operations
- Clinical trial testing
- Patient samples
- Turnaround times

Summary data results were initially analyzed using Survey Monkey. Results were exported into Excel as needed to facilitate comparison of more complex summary responses. Results were gated and analyzed in the following data sets:

- #1 - All laboratory types, US and internationally located, completed surveys only
- #2 – Laboratory location comparison responses
 - US-based
 - Outside of US
- #3 – Laboratory type comparison responses, completed surveys only
 - Academic medical centers
 - Community hospital or health system laboratory
 - Commercial reference laboratory (note: this category is inclusive of both referral and reference laboratories)
 - Government laboratory (e.g., VA health system)
 - Other

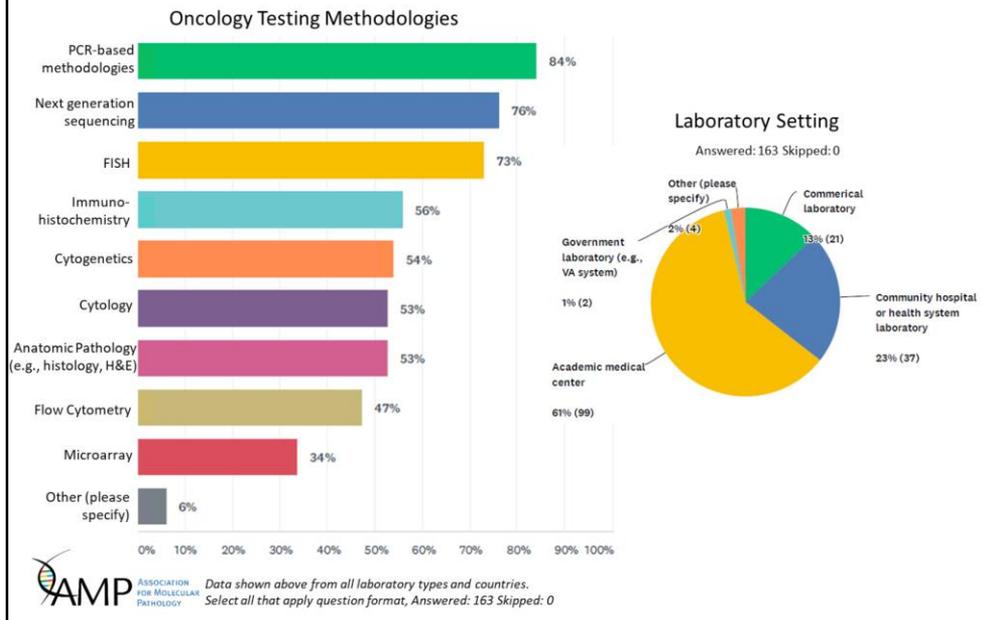
Dataset #1 is presented in the report. Analysis of the three datasets by separating data by location and laboratory type resulted in very similar trends and results.



Demographics for Dataset #1 (All laboratory types, US and internationally-located, completed surveys only)

- 219 total responses, with 163 complete responses from US and internationally-based laboratories. Of the 163 complete responses, 102 were AMP members, 61 were non-members.
- The survey had broad participation internationally. The top 5 countries contributing to the survey were:
 1. United States (59%; n=96)
 2. Canada (12%; n=19)
 3. India (6%; n=10)
 4. Italy (3%; n=5)
 5. Spain (3%; n=5)

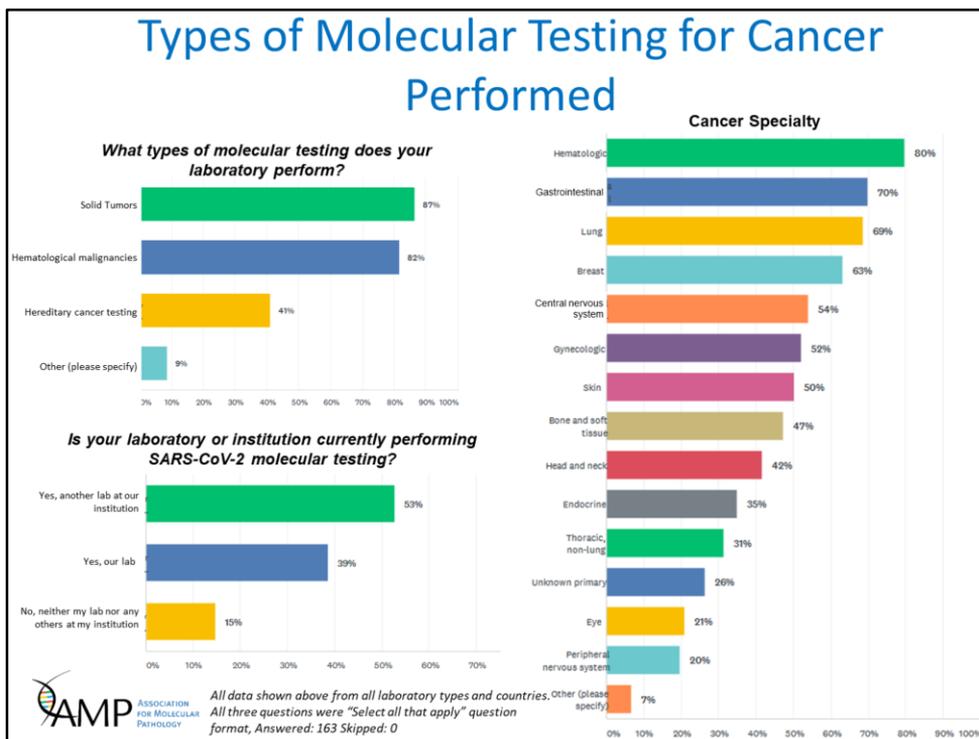
Laboratory Setting and Testing Methodologies



The pie chart on the right shows the breakdown of respondents by laboratory setting. Approximately 61% of respondents categorized their laboratory as academic medical center laboratory (n=99), 13% as commercial reference laboratory (n=21), 23% as community hospital or health system laboratory (n=37), 1% as government laboratory (n=2), and 2% from other settings (e.g., non-profit reference laboratory, dedicated pediatric oncology research hospital; n=4).

The bar graph on the left shows the type(s) of general testing methodologies available and/or currently being used in respondents' laboratories for the purpose of cancer diagnosis. Respondents were asked to select all that apply. The top three methodologies were PCR-based methodologies, next generation sequencing, and fluorescence in situ hybridization (FISH). "Other" methods included Sanger sequencing, microscopy, and mass spectrometry.

NOTE: Data on the left shown from all laboratory types and all countries. Select all that apply question format, 163 respondents, absolute # responses: PCR based methodologies (137); next generation sequencing (124), FISH (119), IHC (91), cytogenetics (88), cytology (86), anatomic pathology (86), flow cytometry (77), microarray (55), other (10).

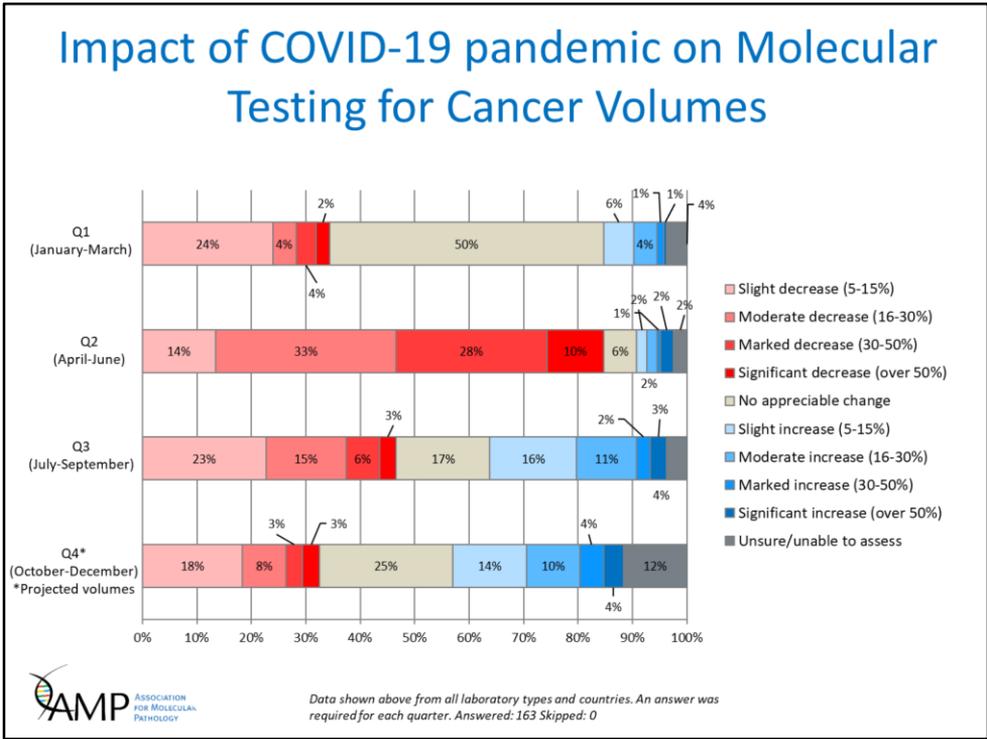


Respondents were asked what types of molecular testing their laboratory performs. With the option to select all that apply, 87% reported performing solid tumor testing, 82% performing testing for hematological malignancies, and 41% performing hereditary cancer testing. Nine percent reported performing other types, such as epigenetic profiling, infectious diseases, and non-cancer germline, and constitutional testing.

Digging a bit deeper, the survey asked respondents to indicate the type(s) of molecular testing for cancer in which their laboratory specializes. With the option to select all that apply, respondents reported a broad spectrum of specialties, with hematologic, gastrointestinal, lung, breast, and central nervous system listed as the top five. Nine percent reported other types of testing, which included thyroid, pediatric tumors, pancreatic, and urogenital.

We asked whether the respondents' laboratories or institutions were also performing SARS-CoV-2 diagnostic testing. With the option to select all that apply, 53% reported that SARS-CoV-2 diagnostic testing was being performed at another laboratory in their institution, 39% reported that their laboratory, in addition to performing molecular testing for cancer, was also performing SARS-CoV-2 diagnostic testing, and 15% reported that neither their laboratory nor their institution was performing SARS-CoV-2 testing.

NOTE: Data shown from all laboratory types and all countries. Select all that apply question format, 163 respondents, absolute # responses: Top left graph: solid tumors (141), hematological malignancies (133), hereditary cancer testing (67), other (14). Bottom left graph: Yes, another lab at our institution (86), Yes, our laboratory (63), No (24). Right graph: hematologic (13), gastrointestinal (114), lung (112), breast (103), CNS (88), gynecologic (85), skin (82), bone and soft tissue (77), head and neck (68), endocrine (57), thoracic, non-lung (51), unknown primary (43), eye (34), PNS (32), other (11).



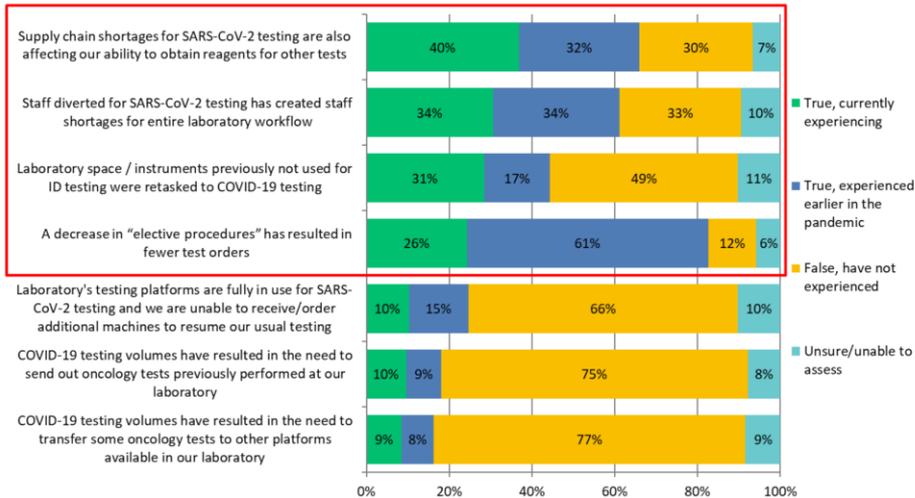
We wanted to gauge how 2020 testing volumes compared to 2019 volumes for respondents' laboratories, with respondents required to provide an answer for each quarter of 2020. Volumes for Q4 were anticipated as the survey was taken on the cusp of Q4. For Quarter 1 (Q1), 50% of respondents noted no appreciable change from 2019 volumes, and 25% reporting a slight decrease from 2019 volumes. In Quarter 2 (Q2), the trends change dramatically, where 28% of respondents noted a marked decrease in testing volumes compared to 2019 volumes, and 33% reported a moderate decrease from 2019 volumes. Quarter 2 of 2020 saw the most significant changes from 2019 volumes, with 85% of respondents reported a decrease of some sort in Q2. This is expected since significant pandemic-related lockdowns occurred across the US and internationally during the spring of 2020.

In Quarter 3 (Q3), we see 23% and 15% of respondents reporting a slight and moderate decrease in testing volumes as compared to 2019, respectively. Additionally, in Q3 we begin to see some laboratories reporting volumes higher than 2019 volumes, with 15% and 11% reporting slight and moderate increases, respectively.

In Quarter 4 (Q4), the survey asked respondents to report their anticipated volumes as compared to 2019 volumes. Twelve percent reported that they were unsure or unable to assess. A quarter of the respondents anticipated no change from 2019 volumes. Approximately 32% of respondents noted that they anticipated a decrease of some kind in Q4, 32% of respondents also reported an anticipated increase of some kind in testing volume from 2019 volumes.

NOTE: Data shown from all laboratory types and all countries. An answer was required for each quarter, 163 respondents, absolute number of respondents: Quarter 1 (Q1), 163 respondents, slight decrease (39), moderate decrease (7), marked decrease (6), no appreciable change (82), slight increase (9), moderate increase (7), marked increase (2), significant increase (1), unsure/unable to assess (6); Quarter 2 (Q2), 163 respondents, slight decrease (22), moderate decrease (54), marked decrease (45), significant decrease (17), no appreciable change (10), slight increase (3), moderate increase (3), marked increase (1), significant increase (4), unsure/unable to assess (4); Quarter 3 (Q3), 163 respondents, slight decrease (37), moderate decrease (24), marked decrease (10), significant decrease (5), no appreciable change (28), slight increase (26), moderate increase (18), marked increase (4), significant increase (5), unsure/unable to assess (6); Quarter 4 (Q4), 163 respondents, anticipated volumes, Slight decrease (30), moderate decrease (13), marked decrease (5), significant decrease (5), no appreciable change (40), slight increase (22), moderate increase (16), marked increase (7), significant increase (6), unsure/unable to assess (19).

Effects of COVID-19 Pandemic on Laboratories Performing Molecular Testing for Cancer



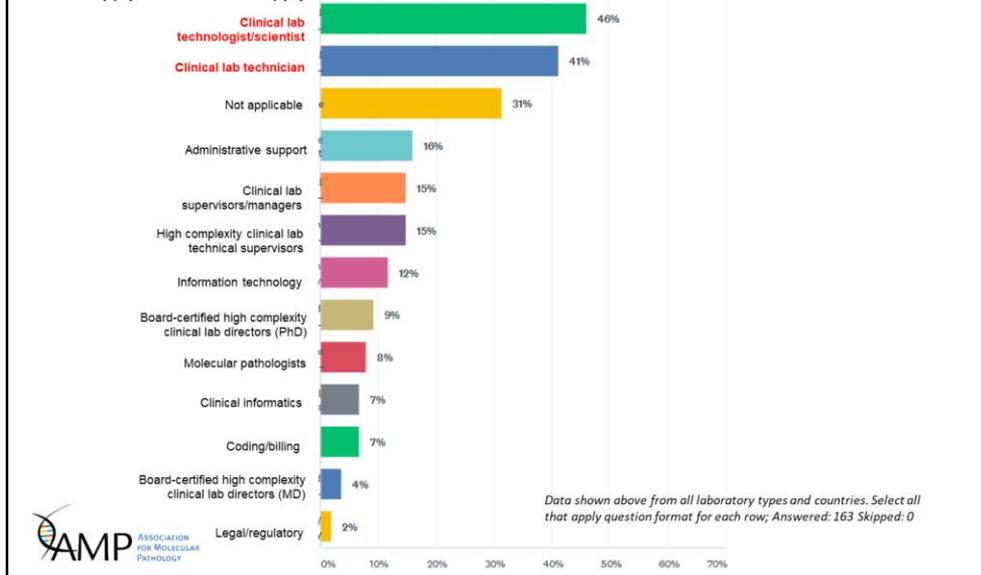
Data shown above from all laboratory types and countries. Select all that apply question format for each row; an answer was required for each row, Answered: 163 Skipped: 0

Aiming to understand if and how the COVID-19 pandemic has affected laboratories performing molecular testing for cancer, we asked respondents to tell us if they were currently experiencing, experienced earlier in the pandemic, had not experienced, or were unsure/unable to assess a series of scenarios. Respondents reported molecular testing has been broadly impacted by the COVID-19 pandemic in a number of ways, with the top four in the red frame. These results align with AMP's [August survey](#) (Slide 27 of August survey report) where a similar trend was found.

NOTE: Data shown from all laboratory types and all countries. Select all that apply question format, 163 respondents, absolute # responses: COVID-19 testing supply chain shortages affecting ability to get reagents for other tests (currently experiencing (66); experienced earlier (52); have not experienced (49); unsure/unable to assess (12)), Staff diverted for COVID-19 testing has created staff shortages for entire laboratory workflow (currently experiencing (55); experienced earlier (55); have not experienced (53); unsure/unable to assess (17)), Lab space/instruments retasked to COVID-19 testing (currently experiencing (50); experienced earlier (28); have not experienced (80); unsure/unable to assess (18)), Decrease in "elective procedures" has resulted in fewer test orders (currently experiencing (42); experienced earlier (100); have not experienced (20); unsure/unable to assess (10)), COVID-19 tests using all platform capacity (currently experiencing (17); experienced earlier (24); have not experienced (108); unsure/unable to assess (17)), COVID-19 testing volumes have resulted in the need to send out tests (currently experiencing (16); experienced earlier (14); have not experienced (123); unsure/unable to assess (13)), COVID-19 testing volumes results in need to transfer oncology tests to other platforms (currently experiencing (14); experienced earlier (13); have not experienced (125); unsure/unable to assess (14)).

Molecular Testing for Cancer Affected by Staffing Shortages

If staff have been diverted to assist with testing for the COVID-19 pandemic, what job classifications are now in short supply? Select all that apply.

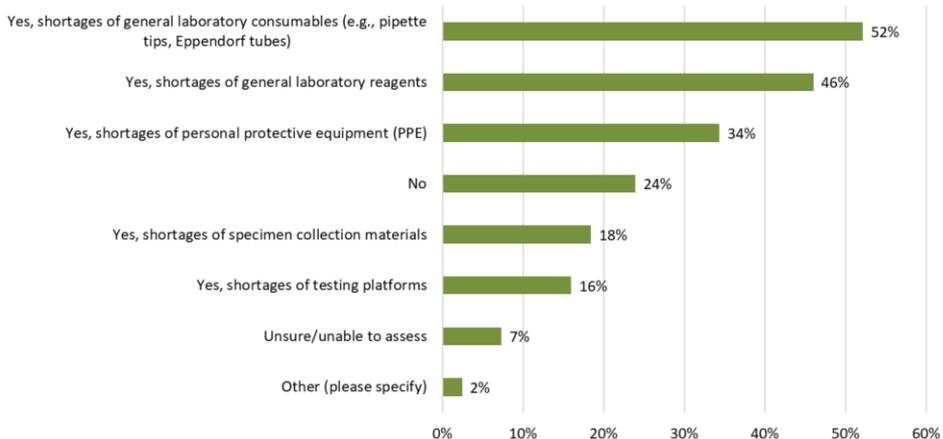


To understand in more detail the staffing shortage laboratories may be experiencing due to the pandemic we asked a follow-up question on what job classifications are now in short supply. The top two job classifications in which laboratories that perform molecular testing for cancer are experiencing staffing shortages are clinical laboratory technologist (46%) and clinical laboratory technician (41%). This is the same trend that laboratories performing SARS-CoV-2 testing are experiencing ([AMP August SARS-CoV-2 testing survey](#), slide 24). Additionally, and also in line with the August survey, laboratories performing molecular testing for cancer also show significant shortages in other positions including administrative support, clinical laboratory supervisors/managers, high complexity clinical laboratory technical supervisors, and information technology.

NOTE: Data shown from all laboratory types and all countries. Select all that apply question format, 163 respondents, absolute # responses: clinical laboratory tech/scientist (75), clinical lab technician (67), not applicable (51), administrative support (26), clinical laboratory supervisors/managers (24), high complexity clinical lab technical supervisors (24), information technology (19), board-certified high complexity lab directors (PhD or equivalent) (15), molecular pathologists (13), clinical informatics (11), coding/billing (11), board certified high complexity clinical lab directors (MD or equivalent) (6), legal/regulatory (3).

Pandemic-Related Supply Shortages Also Affecting Molecular Testing for Cancer

Have you experienced abnormal difficulties in ordering supplies to perform molecular testing for cancer that you can likely attribute to the SARS-CoV-2 testing supply needs or COVID pandemic response? Select all that apply.



All data shown above from all laboratory types and countries. Select all that apply question format, Answered: 163 Skipped: 0

The aim of this question was to understand in more depth what supply shortages laboratories that perform molecular testing for cancer were experiencing. Approximately half of the respondents noted shortages of general laboratory consumables (e.g., pipette tips, Eppendorf tubes) and shortages of general laboratory reagents. Personal protective equipment shortages were experienced by 34% of the respondents. Thus, the pandemic related supply shortages were not restricted to those laboratories performing SARS-CoV-2 testing (data shown in both AMP April and August surveys), but continue to reverberate through other laboratories and negatively impact other types of molecular testing.

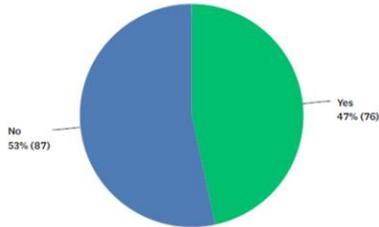
It is worth noting that at the time the survey was administered, clinical laboratories performing COVID-19 diagnostic tests were relying almost exclusively on real-time PCR methods, while laboratories use a variety of methods for their oncology molecular testing. (See page 4 where data shows the top 3 oncology testing methodologies were PCR-based, next generation sequencing (NGS), and FISH.) With the emergence and spread of novel SARS-CoV-2 strains, there is a push for many more clinical samples to be sequenced by laboratories to understand the prevalence of genomic strains across the world and within the US. Thus, as these efforts ramp up and supplies for SARS-CoV-2 genomic sequencing are in greater demand, laboratories performing molecular testing for cancer may face additional, specific burdens on the supply chain for NGS-related reagents and materials. It will be important to reassess the potential strains on the supply chain as testing needs for COVID-19 continue to evolve.

NOTE: Data shown from all laboratory types and all countries. Select all that apply question format, 163 answered, absolute # of responses: general laboratory consumables (85), general laboratory reagents (56), No (39), specimen collection materials (30), testing platforms (26), unsure/unable to assess (12), other (4).

Molecular Testing for Cancer in Clinical Trials Affected by COVID-19 Pandemic

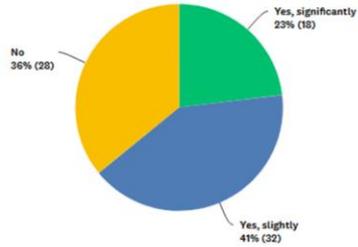
Does your laboratory perform cancer molecular testing for clinical trial purposes?

Answered: 163; Skipped: 0



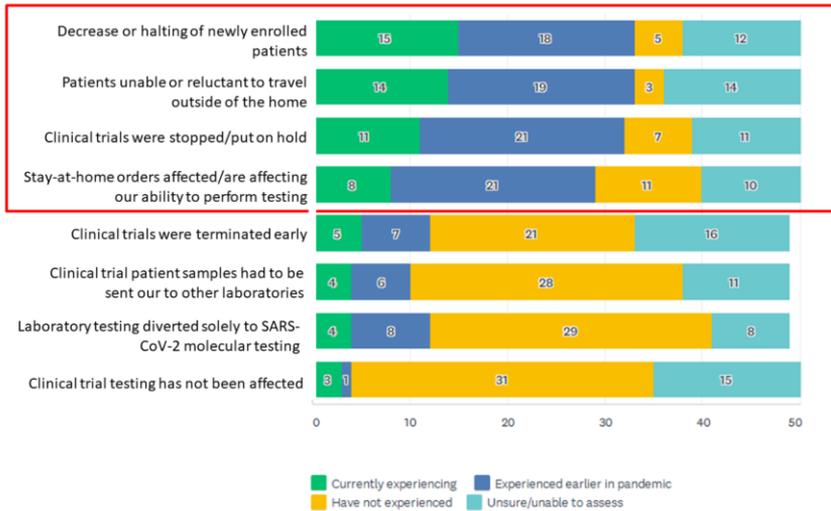
Has cancer molecular testing for clinical trial purposes been affected by the COVID-19 pandemic?

Answered: 78; Skipped: 85



The survey also aimed to understand if and how molecular testing performed for clinical trials was affected. Approximately half of the respondents are performing molecular testing for cancer in clinical trials. Approximately 64% of respondents that perform clinical trial testing report that this testing has been affected by COVID-19 pandemic, with 23% reporting that their laboratory was significantly affected, and 41% reporting that their laboratory was slightly affected.

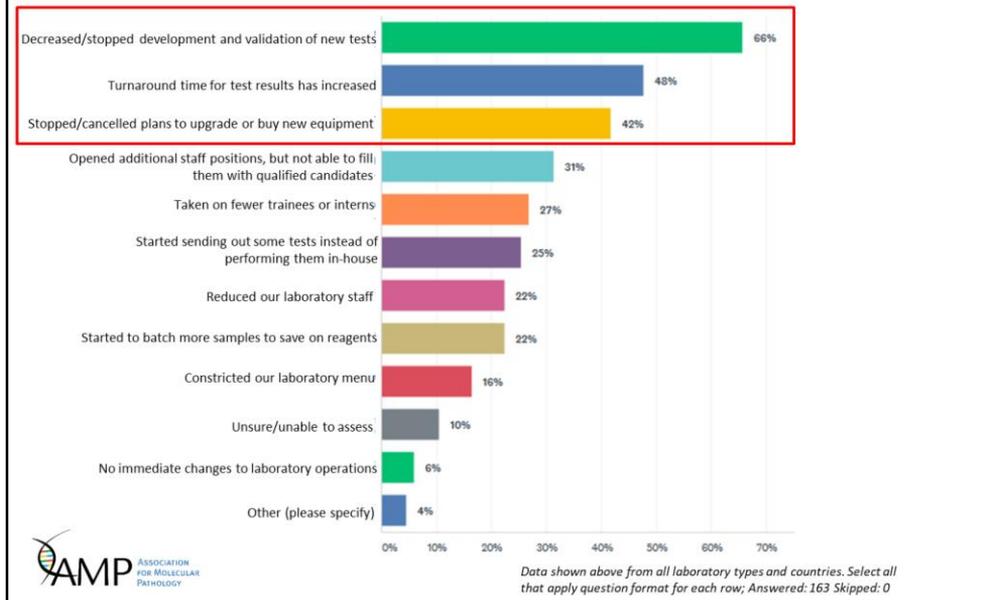
Effects of COVID-19 Pandemic on Clinical Trial Testing



Data shown above from all laboratory types and all countries. Select all that apply question format for each row; an answer was required for each row, Answered: 49 Skipped: 114

Data here show in more detail the effects of the COVID-19 pandemic on clinical trial testing. The top 4 effects (shown in red box) include a decrease or halting of newly enrolled patients, patients being unable or reluctant to travel outside of the home, clinical trials being stopped/put on hold, and stay-at-home orders affected/are affecting the ability of the respondents' laboratories to perform clinical trial testing. Respondents noted experiencing these effects both at the time of the survey and earlier in the pandemic.

Immediate Effects on Laboratory Operations Due to COVID-19 Pandemic



We asked respondents to report if the pandemic had negatively affected either their laboratory's current or future operations and its ability to perform molecular testing for cancer. Respondents were asked what immediate effect(s) the pandemic had on their laboratory operations and their ability to provide molecular testing for cancer. With the option to select all that apply, the predominant immediate effect was that almost 70% of respondents reported that they have decreased or stopped development and validation of new tests. This is quite significant, as it indicates one of the largest impacts of the pandemic is to delay current implementation and future development of leading edge clinical testing modalities, which ultimately will result in delayed translation of new and impactful scientific discoveries into patient care. Additionally, turnaround times have increased for almost half of the respondents and approximately 40% of laboratories have either stopped or cancelled plans to upgrade new equipment.

Additionally, thirty-one percent reported that indeed the pandemic had negatively affected their laboratory (data not shown). Interestingly, 22% reported that the laboratory is growing and expanding operations and 37% reporting that operations remained unchanged (data not shown). We also asked respondents if the pandemic has caused additional economic issues that are impacting their laboratory and the ability to perform molecular testing for cancer. The top five economic issues reported were:

1. The pandemic has caused increased strain on laboratory staffing, requiring more money for overtime, etc. (36%)
2. Revenue has decreased due to a decrease in ordering from the test menu. (25%)
3. Some reagents and supplies have unexpectedly increased in price. (15%)
4. We've had to send out more tests instead of performing them in-house. (15%)
5. Due to a decrease in ordering of molecular tests for cancer, we've pivoted to providing SARS-CoV-2 testing. (10%)

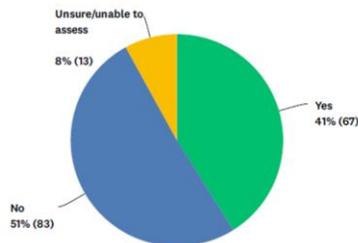
The survey also asked in what way(s) the pandemic has permanently affected how their laboratory plans to operate going forward to provide molecular testing for cancer (data not shown). Almost half of the respondents noted that they are unable to assess at this point and 24% reported that they have not yet instituted any permanent changes to laboratory operations due to the pandemic. These results likely reflect the ongoing uncertainty this pandemic will have on laboratory testing. It may be useful to ask this question again to see if and how responses have changed as the pandemic evolves and hopefully wains.

NOTE: Data shown from all laboratory types and all countries. Select all that apply question format, 67 respondents, 96 skipped, absolute # responses: Decreased or stopped development/validation of tests (44), turnaround times increased (32), stopped/cancelled new equipment orders (28), Opened additional lab staff positions but cannot fill them (21), taken on fewer trainees (18), starting sending out some tests (17), reduced lab staff (16), batching more samples (15), constricted lab menu (11), unsure/unable to assess (7), no immediate changes (4), other (3).

Turnaround Times for Molecular Testing for Cancer Increased During Pandemic

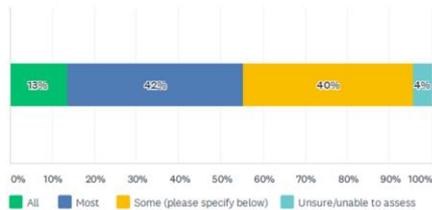
Has the COVID-19 pandemic negatively impacted the TAT for ANY of the molecular cancer tests you offer? (Average TAT = amount of time 90% of samples spend in testing lab from sample received at the testing lab -> report sent)

Answered: 163 Skipped: 0



Turnaround times have increased for which proportion of the molecular cancer tests offered by your laboratory?

Answered: 67 Skipped: 96



Answers to "please specify below" included:

- "Tests with lower priority"
- "NGS and real time PCR due to shortage of reagent supply"
- "NGS assays early in the pandemic"
- Most significant impact on TAT has been on very high complexity (NGS) tests

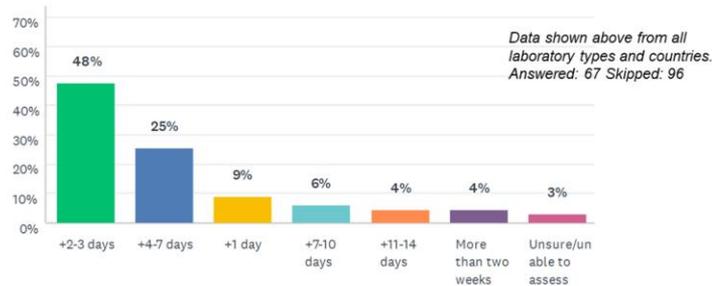


Approximately 40% of respondents noted that the COVID-19 pandemic has negatively impacted the turnaround time for any of the tests their laboratory offers. The average turnaround time here is defined as the amount of time 90% of the samples spend in the testing laboratory from the time the sample is received at the testing laboratory until the report is sent. Asking those who responded if the pandemic has negatively affected their laboratory's turnaround time, 95% reported that turnaround times had increased, with 13% reporting that turnaround times for all tests had increased, 42% reporting that turnaround times for most tests had increased, and 40% reporting that turnaround times for some tests had increased.

NOTE: Data on the right shown from all laboratory types and all countries. 67 respondents, 97 skipped absolute # responses: All (9), Most (28), Some (27), Unsure/unable to assess (3).

Turnaround Times for Molecular Testing for Cancer Increased During Pandemic

On average, how much longer are turnaround times for affected molecular cancer test(s)?



Top 5 reasons for increased turnaround times:

1. Staffing shortages (75%)
2. SARS-CoV-2 testing receiving priority over other testing, including cancer testing (45%)
3. Reagent shortages/platforms limiting how many molecular tests can be processed and run (36%)
4. Molecular cancer testing previously conducted locally is now sent out and TAT has increased as a result (18%)
5. Platforms previously used for molecular testing have been retasked for SARS-CoV-2 testing (13%)



Respondents were asked how much longer are the turnaround times for affected molecular cancer tests. Almost half of the respondents reported that turnaround times were 2-3 days longer, with 25% reporting 4-7 days. The top five reasons for the increased turnaround times are listed above, with 75% of the respondents reporting that staffing shortages were a major reason for the increased time. Almost half reported that SARS-CoV-2 testing receiving priority over other testing also contributed to the increased turnaround time.

NOTE: Data shown from all laboratory types and all countries. 67 respondents, 96 skipped absolute # responses: +2-3 days (32), +4-7 days (17), +1 day (6), +7-10 days (4), +11-14 days (3), more than two weeks (3), unsure/unable to assess (2).

Key Findings

1. The volume of molecular testing for cancer has been broadly impacted by COVID-19 testing:
 - a. 85% of respondents reported that molecular testing decreased during April-June 2020
 - b. There was a marked increase in molecular testing starting in July, however it is unsure if this increase has been maintained during the worsening of pandemic since survey closed
2. Molecular diagnostic testing for cancer associated with clinical trials decreased for over half of the respondents. Reasons for this decrease include:
 - a. There was a decrease or halting of newly enrolled patients
 - b. Patients were unable or reluctant to travel
 - c. Clinical trials were stopped or put on hold
 - d. Stay-at-home orders affected the ability of laboratory personnel to perform testing
3. Laboratories performing molecular testing for cancer have been hamstrung during the pandemic in many ways, including:
 - a. Difficulty obtaining the supplies needed to perform molecular cancer tests due to stressed supply chain
 - b. Worldwide, laboratories are experiencing staff shortages as personnel are redirected to SARS-CoV-2 testing
 - c. Laboratory space/instruments typically used for cancer testing are being retasked for SARS-CoV-2 testing
 - d. A decrease in “elective procedures” has resulted in fewer test orders
4. The COVID-19 pandemic immediately affected laboratories performing molecular testing for cancer in numerous ways, including:
 - a. Decreasing or halting development or validation of new tests
 - b. Increased turnaround time for tests
 - c. Halting or cancelling orders for new equipment
5. Despite these challenges, laboratories continue to work diligently to provide molecular testing for cancer patients. Although long term effects remain to be seen, it is likely that coping mechanisms develop by laboratories will have long term effects on their ability to provide molecular diagnostic testing in the same capacity they were before the pandemic.

Conclusions and Recommendations

It will be some time until we fully understand the full impact the COVID-19 pandemic has had on healthcare worldwide. Stay at home orders, coupled with fears of contracting COVID-19 at a healthcare facility resulted in delays in healthcare, including routine check-ups, screenings, diagnosis, and treatments. As the nation pivoted to focus on the public health crisis, screening, diagnosis and care associated with other diseases, especially cancer, suffered significant reverberations.

Before the pandemic, cancer patients were already facing hurdles in getting timely molecular testing in order to inform their care management and treatment plan. A strategic goal of AMP is to work to close this gap to ensure that patients have access to high quality, appropriate testing. The COVID-19 pandemic presents yet another hurdle to patients and this survey provides insight into challenges clinical laboratories offering such testing are facing.

Many of the results from this survey mirror results seen in AMP's April and August surveys, aimed at laboratories performing testing for COVID-19, with significant overlap in supply chain and staffing shortages. Thus, the results from this survey continue to reinforce the recommendations made previously with a particular emphasis on those that would help to mitigate these shortages, including:

1. Reprioritize supply allocations based on clinical testing needs, which could change over time
2. Support the clinical laboratory workforce as essential to providing an effective medical and public health pandemic response

Addressing these issues during this pandemic and any future pandemics is necessary for laboratories to continue to operate at full capacity and ensure that patients can continue to receive timely testing.

Recently, efforts to obtain whole genome sequencing data for SARS-CoV-2 in order to track highly transmissible coronavirus variants and any other potentially dangerous variants have increased. Public health, academic and clinical laboratories are working to ramp up and prioritize this type of testing. In fact, AMP's ACR Steering Committee [recently highlighted](#) how imperative enhanced testing for variants is to combat the spread of COVID-19 and recommended actions the U.S must take to strengthen its sequencing efforts. As the pandemic continues to evolve, diagnostic and screening tests will need to evolve in step to ensure a proactive national response. Clinical laboratories continue their work on the front-lines to monitor and respond to changing testing needs, highlighting their importance in supporting the worldwide pandemic response. To ensure that clinical laboratories can continue to operate in this capacity, in addition to their ongoing efforts to support routine patient care, laboratories should be supported as they are put under additional strain responding to the pandemic.

AMP plans to continue closely monitoring the COVID-19 pandemic and assess the needs of its members. Addressing shortfalls within the COVID-19 testing supply chain and staffing will help to ensure all clinical laboratory testing can be performed in a timely manner. Supply chains for molecular diagnostic testing for cancer, as well as strains on laboratory staff, should continue to be monitored closely to prevent additional bottlenecks. AMP continues conversations with both policy makers and the laboratory and patient advocacy community. These results will continue to provide data to inform those conversations.