

**EMERGENCY USE AUTHORIZATION (EUA) SUMMARY  
COLOR COVID-19 SELF-SWAB COLLECTION KIT**

For Prescription Use Only  
For *In vitro* Diagnostic Use  
For Use Under Emergency Use Authorization (EUA) Only  
For Use by Individuals 18 Years of Age and Older when Self-collected  
For Use by Individuals 14 Years of Age and Older when Self-collected Under Adult Supervision  
For Use by Individuals 2 Years of Age and Older when Collected with Adult Assistance

**Anterior nasal swabs collected at home or collected unsupervised at a collection site with the Color COVID-19 Self-Swab Collection Kit will be sent to high complexity laboratories that have been designated by Color Health, Inc. All laboratories will be certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C. §263a and meet the requirements to perform high complexity tests and run the specimens collected from the Color COVID-19 Self-Swab Collection Kit on an in vitro diagnostic (IVD) molecular test that is indicated for use with the Color COVID-19 Self-Swab Collection Kit for collection of anterior nasal swab specimens.**

**INTENDED USE**

The Color COVID-19 Self-Swab Collection Kit is intended for use by any individual age 18 years and older (self-collected), 14 years and older (self-collected under adult supervision), or 2 years and older (collected with adult assistance), including individuals without symptoms or other reasons to suspect COVID-19 for unsupervised collection of anterior nasal swab specimens at home or in a healthcare setting when determined to be appropriate by a healthcare provider. Dry anterior nasal swab specimens collected using the Color COVID-19 Self-Swab Collection Kit are transported at ambient temperature for testing at an authorized laboratory. SARS-CoV-2 RNA from the anterior nasal swab specimens is maintained in the specimen packaging and is suitable for use in molecular diagnostic testing performed using an in vitro diagnostic (IVD) test for the detection of SARS-CoV-2 that is indicated for use with the Color COVID-19 Self-Swab Collection Kit.

Testing is limited to laboratories designated by Color Health, Inc. that are certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), 42 U.S.C. §263a, and meet requirements to perform high complexity tests. Testing is also limited to molecular diagnostic tests that are indicated for use with the Color COVID-19 Self-Swab Collection Kit.

The Color COVID-19 Self-Swab Collection Kit is only for use under the Food and Drug Administration’s Emergency Use Authorization.

**SPECIAL CONDITIONS OF USE STATEMENTS**

For Prescription Use Only

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For *In vitro* Diagnostic Use

For Use Under Emergency Use Authorization (EUA) Only

For Use by Individuals 18 Years of Age and Older when Self-collected

For Use by Individuals 14 Years of Age and Older when Self-collected Under Adult Supervision

For Use by Individuals 2 Years of Age and Older when Collected with Adult Assistance

The Color COVID-19 Self-Swab Collection Kit is only authorized for use in conjunction with an *in vitro* diagnostic (IVD) molecular test for the detection of SARS-CoV-2 RNA that is indicated for use with dry anterior nasal swab specimens collected with the Color COVID-19 Self-Swab Collection Kit.

## **DEVICE DESCRIPTION AND TEST PRINCIPLE**

**Note that, throughout this document, the term “patient” includes the parent/guardian of a minor, as applicable.**

Color Health, Inc. (Color) offers the Color COVID-19 Self-Swab Collection Kit as part of a community-based distribution framework that is physician ordered. Healthcare providers (HCP) at specific institutions, who are licensed and have prescriptive authority in their respective states will evaluate patient acceptability. Ordering physicians must be licensed in the state where the kits will be provided or shipped. At the physician’s discretion, the patient accesses the Color website ([color.com/covid/PARTNER/activate](https://color.com/covid/PARTNER/activate), where “PARTNER” can be customized to the specific program) and answers questions related to patient exposure, symptoms, as well as underlying health conditions and other risk factors. This task is to document the patient’s responses and link the patient with a specific kit and barcode that will be used for accessioning at the testing laboratory.

The Color COVID-19 Self-Swab Collection Kit enables the collection of an anterior nasal swab sample that is transported in dry conditions in a sterile collection container to either; (1) Color for processing with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay or (2) another laboratory designated by Color that has an authorized IVD molecular assay for detection of SARS-CoV-2 that is indicated for use with the Color COVID-19 Self-Swab Collection Kit. The Color COVID-19 Self-Swab Collection Kit can be provided at a designated on-site collection location that is part of a centrally coordinated program or can be ordered by a healthcare provider through Color’s website and shipped to the patient’s home via 2-day shipping. Color does not accept requests for kits from patients directly. Results of the authorized IVD molecular assay for detection of SARS-CoV-2 are communicated to the ordering physician. If the ordering physician directs Color to do so, patients will also receive a notification via email or text message containing a link to Color’s online HIPAA-compliant post-test portal to access their results. The authorizing physician and the sponsoring agency often give their patients the option to follow-up with a healthcare provider to discuss the test results.

The Color COVID-19 Self-Swab Collection Kit consists of a sterile packaged spun polyester swab, collection tube, a rigid biohazard safety bag, barcode card, instructions for use, and a return shipping envelope with a prepaid return label. Instructions included

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in the kit guide users on how to collect the anterior nasal swab specimen appropriately. Following collection, the swab is inserted into a sterile dry tube without transport or preservative medium, and the cap is pushed on tightly to the collection tube. The collected specimen is sealed in the biohazard bag and placed into a designated, secure collection bin or handed directly to on-site staff if collected at a designated location OR the specimen in the rigid biohazard safety bag is placed into the return shipping envelope for transport to Color or a designated testing laboratory. For those specimens collected at home, the completed Color COVID-19 Self-Swab Collection Kit must be deposited at a drop box location on the same day the specimen is collected to ensure timely receipt of an intact specimen. Each Color COVID-19 Self-Swab Collection Kit is intended to be returned via 48-hour shipping (or same day shipping via a courier for those collections completed on-site) under ambient conditions.

Specimens received for testing at Color and designated laboratories will undergo a thorough review and accessioning prior to acceptance for testing with an FDA authorized IVD molecular SARS-CoV-2 assay indicated to process dry anterior nasal swabs per the Instructions for Use.

## REAGENTS AND MATERIALS

The Color COVID-19 Self-Swab Collection Kit consists of the following components:

| Component   |
|---|
| Soft shipping envelope with prepaid return shipping label and UN3373 Biological Substance Category B label* |
| Rigid biohazard safety bag for collected specimen   |
| Sterile packaged spun polyester swab  |
| Sterile collection tube   |
| Barcode card  |
| Instructions for self-collection  |

\*Not applicable to unsupervised on-site collection

## MEDICAL OVERSIGHT AND PROCESS TO BE USED

Anterior nasal swabs can be collected via two different workflows:

### On-Site Unsupervised Collection Workflow

1. At the physician’s discretion, the patient completes the eligibility questionnaire via the Color website ([color.com/covid/PARTNER/activate](https://color.com/covid/PARTNER/activate), where “PARTNER” can be customized to the specific program) which adheres to the CDC COVID-19 screening guidelines. A healthcare provider (HCP) at specific institutions authenticates the information and determines patient suitability for the unsupervised anterior nasal swab collection kit.
2. The patient collects the anterior nasal swab specimen following the instructions provided with the kit and returns the completed kit to the on-site collection bin.
3. All samples collected on-site are delivered to Color’s laboratory or Color designated laboratories within 56 hours for processing.

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4. Test results are communicated back to the patient and the ordering physician. Results are returned electronically or by fax to the ordering provider. If the ordering physician directs Color to do so, patients will also receive a notification via email or text message containing a link to Color’s online HIPAA-compliant post-test portal to access their results.
5. Results are automatically shared with local Department of Public Health registries.

**At-Home Unsupervised Collection Workflow**

1. At the physician’s discretion, the patient completes the eligibility questionnaire via the Color website ([color.com/covid/PARTNER/activate](https://color.com/covid/PARTNER/activate)) which adheres to the CDC COVID-19 screening guidelines. A healthcare provider (HCP) at specific institutions authenticates the information and determines patient suitability for the unsupervised anterior nasal swab collection kit.
2. Color will ship the collection kit to the patient’s home via 2-day shipping.
3. The patient collects the anterior nasal swab specimen following the instructions provided with the kit and ships the completed kit to Color’s laboratory or Color designated laboratories using a prepaid shipping pack.
4. Test results are communicated back to the patient and the ordering physician. Results are returned electronically or by fax to the ordering provider. If the ordering physician directs Color to do so, patients will also receive a notification via email or text message containing a link to Color’s online HIPAA-compliant post-test portal to access their results.
5. Results are automatically shared with local Department of Public Health registries.

**PATIENT INCLUSION/EXCLUSION CRITERIA**

Currently, Color offers the Color COVID-19 Self-Swab Collection Kit as part of centrally coordinated community programs that are under the direction of a supervising physician. Healthcare providers (HCP) at specific institutions within the community-based framework use their medical expertise to determine patient acceptability. Ordering HCPs must be licensed in the state where the kits will be provided or shipped. Color will ship a kit to a patient’s home when directed to do so as a part of an established program but does not accept requests for kits from patients directly. In practice, the inclusion and exclusion criteria are established by the program and authorizing physician.

**INSPECTION OF ANTERIOR NASAL SWAB SPECIMENS RECEIVED AT A DESIGNATED LABORATORY FOR TESTING**

Specimens collected with the Color COVID-19 Self-Swab Collection Kit must be checked for the following criteria upon receipt at designated testing laboratories prior to processing as outlined in the “Specimen Receipt and Handling for the Color COVID-19 Self-Swab Collection Kit” accessioning SOP:

- Sample collection tube must be intact and not visibly damaged.
- The tube barcode label must be present and readable by a barcode scanner.

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- The tube cap must be properly secured onto the tube.
- The swab should be oriented correctly; bud at the bottom, shaft at the top.
- The expiration date on the kit is not exceeded.
- Accession date is within 56 hours of the collection date/time.
- Each laboratory's accessioning system must check that the specimen is approved by a physician, a consent form is present, and that the collection kit has been activated via the online portal within the last 56 hours.

## **CONTROLS TO BE USED WITH THE AUTHORIZED SARS-COV-2 MOLECULAR ASSAY**

### **1) No Template Control (NTC)**

A negative (no template) control must be used to monitor for sample contamination during nucleic acid extraction and RT-PCR assay set-up. Molecular grade, nuclease-free water or DNA/RNA Shield medium can be processed as a clinical sample beginning with extraction (optional) or can exclude the extraction step and be added during RT-PCR set-up.

### **2) SARS-CoV-2 Positive Control**

A positive SARS-CoV-2 control is needed to verify proper nucleic acid extraction, assay set-up, and SARS-CoV-2 reagent integrity. A positive control consisting of DNA/RNA Shield medium spiked with human total extracted nucleic acid and synthetic viral SARS-CoV-2 RNA (Twist Synthetic SARS-CoV-2 RNA Control 1 (MT007544.1) or another applicable positive control at  $\leq 5X$  LoD can be used. The positive control must be used on every assay plate starting at master mix addition.

### **3) Endogenous Internal Control**

An internal control targeting RNase P or another endogenous human gene is needed to verify that nucleic acid is present in every sample and is used for every sample that is processed with the assay. This also serves as a positive extraction control to ensure that samples resulting as negative contain nucleic acid for testing. Detection of the RNase P gene/other applicable endogenous human control in patient test samples verifies successful extraction of the sample, proper assay setup, sample integrity, and collection of human biological material.

### **4) A Negative Extraction Control (optional)**

Typically, a negative extraction control is a previously characterized negative patient sample. It serves both as a negative extraction control to monitor for any cross-contamination that could occur during the nucleic acid extraction process, as well as an extraction control to validate extraction reagents and successful RNA extraction.

## **INTERPRETATION OF RESULTS**

All test controls must be examined prior to interpretation of patient results. If the controls are not valid, the patient results cannot be interpreted.

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SARS-CoV-2 test results are divided into SARS-CoV-2 positive/detected, SARS-CoV-2 negative/not detected, and inconclusive.

- Test results are communicated back to the patient and ordering physician.
- Results are returned electronically or by fax to the ordering provider. If the ordering physician directs Color to do so, patients will also receive a notification via email or text message containing a link to Color’s online HIPAA-compliant post-test portal to access their results.
- The ordering physician and the sponsoring agency often give their patients the option to follow-up with a healthcare provider to discuss the test results.
- Results are reported by Color to public health agencies as required.

**PERFORMANCE EVALUATION**

**1) Color COVID-19 Self-Swab Collection Kit Sample Stability Studies:**

Shipping stability of dry spun polyester swabs has been demonstrated by Quantigen Biosciences with support from The Gates Foundation and UnitedHealth Group. The Quantigen study demonstrated 56-hour stability for dry anterior nasal spun polyester swabs when subjected to both summer and winter thermal excursions. Quantigen Biosciences has granted a right of reference to the stability data to any sponsor, such as Color Health, Inc. pursuing an EUA for which a claimed specimen type is dry spun polyester swabs. Therefore, the stability of anterior nasal samples collected using dry spun polyester swabs were not evaluated in the sample stability study.

**2) Dry Swab Resuspension Validation:**

To demonstrate that dry spun polyester swabs were acceptable specimen types for testing with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay, performance of the assay was evaluated using dry swabs resuspended in 1.3 mL of lysis buffer included in the Chemagic Viral DNA/RNA Kit that is used to perform extraction on the automated Chemagic platform. Eluates underwent gentle shaking on an orbital shaker for 20 minutes at ambient conditions.

Contrived positive specimens at 2X and 5X LoD were prepared by spiking inactivated SARS-CoV-2 into DNA/RNA Shield containing negative clinical anterior nasal swab matrix followed by spiking the matrix directly onto the spun polyester swabs. Five technical replicates at both 2X and 5X LoD concentrations were tested in addition to 5 negatives (unspiked-negative clinical anterior nasal swab matrix resuspended in lysis buffer). Results are summarized in Table 1 for both viral targets (N and E-genes) and RNase P when tested simultaneously. There was 100% agreement with expected results for all positive contrived samples for both swab types. All negative samples were non-reactive for SARS-CoV-2 assay targets.

**Table 1. Dry Swab Resuspension Study Results Stratified by Assay Target When the Color SARS-CoV-2 RT-LAMP Diagnostic Assay was Run with All 3 Assay Targets Simultaneously**

| Swab Type | Concentration | Samples | Detection Rate |
|-----------|---------------|---------|----------------|
|-----------|---------------|---------|----------------|

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|                |                            | (n) | N-gene | E-gene | RNase P |
|----------------|----------------------------|-----|--------|--------|---------|
| Spun Polyester | 2X LoD<br>(1.5 copies/μL)  | 5   | 5/5    | 5/5    | 5/5     |
|                | 5X LoD<br>(3.75 copies/μL) | 5   | 5/5    | 5/5    | 5/5     |
|                | Negative                   | 5   | 0/5    | 0/5    | 5/5     |

**3) Home Collection Kit Stability:**

Swab (Reagent) Stability

The anterior nasal swabs used in the Color COVID-19 Self-Swab Collection Kit are sourced from U.S. Cotton (product code KXG) and are registered and listed with FDA (Registration Number 3004118636; Owner Operator Number: 10071888)<sup>1</sup>. The swab expiration date is printed on the outer package and is one year from the date of manufacturing. Therefore, the kit’s expiration date will be one year from the date of manufacture of the swab and is displayed on the swab sheath and the back of the collection kit box. A specific accessioning criterion is to ensure that the kit’s expiration date has not been exceeded.

**4) Self-Collection Validation:**

a. Usability Study Conducted on Individuals 18 Years of Age and Older

A usability study was conducted to assess user comprehension of the Color COVID-19 Self-Swab Collection Kit, including both collection and packaging the dry anterior nasal swab for shipment. The study inclusion/exclusion criteria are detailed in Table 2. A demographic question was administered as part of the screening questionnaire to ensure recruitment of a user cohort reflective (or as closely as feasible) to that of the 2019 US population. Participants were also recruited to reflect a variety of ages and education levels, including participants with no high school diploma or equivalent, high school diploma or equivalent, and with higher education. Other demographics were also documented (See Table 3).

**Table 2. Inclusion and Exclusion Criteria for Usability Study on Adults Only (18 Years +)**

| Inclusion Criteria  | Exclusion Criteria  |
|---|---|
| <ol style="list-style-type: none"> <li>1. Participant has not received Covid-19 diagnostic testing.</li> <li>2. Participants are 18 years old or older.</li> <li>3. Participant resides in the United States.</li> <li>4. Participant speaks English.</li> <li>5. Participant is able to attend study information session.</li> <li>6. Participant has access to a working computer.</li> <li>7. Participant has access to a stable internet</li> </ol> | <ol style="list-style-type: none"> <li>1. Participant has no access to a computer or internet connection.</li> <li>2. Participant does not speak English.</li> <li>3. Participant has prior medical or laboratory training.</li> <li>4. Participant has prior experience with self-collection.</li> </ol> |

<sup>1</sup> <https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-gates-foundation-unitedhealth-group-quantigen-and-us-cotton>

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|   |  |
|---|--|
| <p>connection.</p> <p>8. Participant is willing to have the interview video recorded.</p> |  |
|---|--|

Usability studies were conducted with two cohorts of individuals; 30 participants in cohort one and 15 participants in cohort two. The interviewer observed the participant using the collection kit through videoconferencing with the participant in their home environment. A total of 45 adults completed the study of which 37.8% were  $\geq 51$  years of age, 13.3% were between 41-50 years, and 22.2% were between 31-40 years old, 26.7% were between 18-30; 60.0% of participants were female and 40.0% were male. Additional characteristics/demographics of study participants is provided in Table 3.

**Table 3. Usability Study Demographics on Adults Only (18 Years +)**

| Characteristics of Study Population |  | N / N45 (%) |
|-------------------------------------|--|-------------|
| <b>Gender</b>                       | Female                                 | 27 (60.0)   |
|                                     | Male                                   | 18 (40.0)   |
| <b>Age (Years)</b>                  | 18 - 30                                | 12 (26.7)   |
|                                     | 31 - 40                                | 10 (22.2)   |
|                                     | 41- 50                                 | 6 (13.3)    |
|                                     | $\geq 51$ years                        | 17 (37.8)   |
| <b>Ethnicity</b>                    | Hispanic or Latino/a                   | 8 (17.8)    |
| <b>Race</b>                         | Asian                                  | 7 (15.6)    |
|                                     | Black or African American              | 6 (13.3)    |
|                                     | White or Caucasian                     | 26 (57.8)   |
|                                     | Other                                  | 6 (13.3)    |
| <b>Marital Status</b>               | Divorced                               | 9 (20.0)    |
|                                     | Married                                | 24 (53.3)   |
|                                     | Never married                          | 12 (26.7)   |
| <b>Employment Status</b>            | A Homemaker                            | 5 (11.1)    |
|                                     | A Student                              | 1 (2.2)     |
|                                     | Employed for wages full time           | 25 (55.6)   |
|                                     | Employed for wages part-time           | 3 (6.7)     |
|                                     | Out of work for less than 1 year       | 3 (6.7)     |
|                                     | Retired                                | 5 (11.1)    |
|                                     | Self-employed                          | 2 (4.4)     |
|                                     | Unable to work                         | 1 (2.2)     |
| <b>Educational Level</b>            | Grade 12 or GED (High School graduate) | 4 (8.9)     |
|                                     | Some College, no degree                | 9 (20.0)    |

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| <b>Characteristics of Study Population</b> |                                 | <b>N / N45 (%)</b> |
|--|---------------------------------|--------------------|
|  | Associate degree                | 6 (13.3)           |
|  | Bachelor’s degree               | 20 (44.4)          |
|  | Graduate or professional degree | 6 (13.3)           |
| <b>Geographic Location</b>                 | Midwest                         | 7(15.6)            |
|  | Northeast                       | 11 (24.4)          |
|  | Southeast                       | 11 (24.4)          |
|  | Southwest                       | 5 (11.1)           |
|  | West                            | 11 (24.4)          |

Of the 30 kits that were shipped to study participants for self-collection in cohort one, 29/30 (97%) of the sample kits were received in acceptable condition for processing according to the laboratory accessioning SOP. One specimen was damaged due to incomplete closure of the collection tube and was not processed with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay. Of those collection kits that were tested with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay, RNase P was detected in 28/29 (96.7%) samples, indicating successful collection of human biological material that was extracted and amplified. There was no known reason or explanation for the lack of RNase P detection for one of the 29 tested samples.

During the actual use testing, staff observed users following the instructions included with the collection kit; however, some participants had challenges with identifying the kit components. Participants used a prototype kit that differed slightly in the labeling from the final kit. A few participants had difficulty identifying or using the rigid biohazard safety bag, which appeared different in the prototype from the drawing provided on the instructions card (lack of a biohazard sticker). Due to these challenges, one participant did not use the rigid biohazard safety bag, and one did not properly seal the bag for transport. No other deviations from the Instructions for Use were noted by staff observing the sample collection. Despite this challenge, this task did not affect the ability to properly receive and process the samples with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay. As noted previously, one participant did not properly secure the collection tube lid prior to shipping and was damaged during transport to the laboratory, possibly indicating that the participant did not completely understand the tube closure step of the instructions. The two samples that either did not use the biohazard bag or used the biohazard bag incorrectly were still successfully processed with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay.

Answers to the user 10-item questionnaire were also collected for the 30 sample kits that were received at Color for processing. Results of the usability testing were analyzed qualitatively to determine if the design of the kit and/or kit instructions needed to be modified to reduce the use-related risks to acceptable

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levels. Cognitive debriefing interviews were conducted following the actual-use testing to gather users' perspectives on each critical task or use scenario.

For the usability study cohort one, the overall participant pass-rate was 97% for the 10-item survey. Pass-rate was 100% for all questions except for two which had pass rates of 80% and 90%. The failure rates for these specific questions were attributed to slight differences between the kit prototype and final product and unclear survey questions. Color staff observed some users' difficulty in identifying the biohazard bag, and the participants mentioned the difference in appearance of the bag used in the prototype versus the depiction in the collection instructions during the interview that was conducted following the actual use observation. The feedback obtained from participants in the first study cohort was used to refine the survey questions to make them more understandable. Note that no changes or modifications to the current instructions needed to be made based on discussions with the participants. However, the kits used in the second cohort did include a biosafety bag that matched the appearance of the bag in the collection instructions included with the Color COVID-19 Self-Swab Collection Kit.

Of the 15 kits that were shipped to study participants for self-collection in cohort two, 15/15 (100%) of the sample kits were received in acceptable condition for processing at the Color lab according to the accessioning SOP. All 15 processed samples were positive for human RNase P (100%), indicating successful collection of human biological material that was extracted and amplified. 15/15 participants successfully answered all 10 questions of the post-study questionnaire and noted agree/strongly agree for understanding the instructions and finding them easy to follow and locate within the kit. Based on the usability study data and feedback, the collection instructions were understandable, and the Color COVID-19 Self-Swab Collection Kit was easy to use.

The results from the usability study indicate users 18 years of age and older are able to collect a dry anterior nasal swab specimen safely and appropriately with sufficient human biological material for downstream SARS-CoV-2 testing.

b. Usability Study Conducted on Minors (2-13 and 14-17 Year-Olds)

An additional usability study was completed to validate collection of a dry anterior nasal swab from minors. The usability study was conducted in a simulated environment using two cohorts of parent/minor pairs. The first cohort included parents with minors aged 2-13, where the parent collected the anterior nasal swab sample from the minor, packaged the specimen for shipping, and answered the post-collection questions. The second cohort included parents with minors aged 14-17, where the minor collected the sample from themselves, packaged the specimen for shipping, and answered the post-collection questions. Minors aged 14-17 could ask their parent for help with either the collection/shipping instructions or the post-collection survey questions if they desired.

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A demographic questionnaire was administered to the parents as part of the screening questionnaire to ensure the usability study included a diverse cross-section of the intended use population. The questionnaire included the parent’s gender, ethnicity, race, marital status, employment status, education level, and household income bracket. A subset of these demographics was collected for minors (2-17 years old), including age and gender.

Color personnel observed the participants using the collection kit in-person in a simulated environment. In total, 35 parent/minor pairs completed usability testing which consisted of 19 pairs in the 2-13 age group and 16 pairs in the 14-17 age group. The demographics of the parent participants for the 2-13 age category and 14-17 age category are shown in Table 4. The self-reported information from minors aged 2-13 and 14-17 years old including gender and age is shown in Table 5.

**Table 4. Participant Demographics for Parents Included in the 2-13 and 14-17 Age Groups**

| Participants – Adults Paired with 2-13 Year-Olds |   | N (%)     | Participants – Adults Paired with 14-17 Year-Olds |                                  | N (%)     |
|--|---|-----------|---|----------------------------------|-----------|
| Total  |   | N (N/19)  | Total   |                                  | N (N/16)  |
| <b>Gender</b>                                    | Female  | 10 (52.6) | <b>Gender</b>                                     | Female                           | 10 (62.5) |
|  | Male  | 9 (47.4)  |   | Male                             | 6 (37.5)  |
| <b>Ethnicity</b>                                 | Hispanic or Latino/a                                | 2 (10.5)  | <b>Ethnicity</b>                                  | Hispanic or Latino/a             | 2 (12.5)  |
|  | Non-Hispanic or Latino/a                            | 17 (89.5) |   | Non-Hispanic or Latino/a         | 14 (87.5) |
| <b>Race</b>                                      | Asian   | 3 (15.8)  | <b>Race</b>                                       | American Indian or Alaska Native | 1 (6.3)   |
|  | Black or African American                           | 5 (26.3)  |   | Asian                            | 4 (25.0)  |
|  | Pacific Islander                                    | 1 (5.3)   |   | Black or African American        | 1 (6.3)   |
|  | White or Caucasian                                  | 10 (52.6) |   | White or Caucasian               | 10 (62.5) |
| <b>Marital Status</b>                            | Married   | 17 (89.5) | <b>Marital Status</b>                             | Married                          | 14 (87.5) |
|  | Separated   | 1 (5.3)   |   | Divorced                         | 1 (6.3)   |
|  | Never married                                       | 1 (5.3)   |   | Separated                        | 1 (6.3)   |
| <b>Employment Status</b>                         | Employed for wages full time                        | 12 (63.2) | <b>Employment Status</b>                          | Employed for wages full time     | 11 (68.8) |
|  | Employed for wages part-time                        | 1 (5.3)   |   | Homemaker                        | 5 (31.3)  |
|  | Self-employed                                       | 1 (5.3)   | <b>Educational Level</b>                          | Some College, no degree          | 2 (12.5)  |
|  | Homemaker   | 4 (21.1)  |   | Associate degree                 | 1 (6.3)   |
|  | Retired   | 1 (5.3)   |   | Bachelor’s degree                | 5 (31.3)  |
| <b>Educational Level</b>                         | Never attended school or only attended kindergarten | 1 (5.3)   | Graduate or professional degree                   | 8 (50.0)                         |           |
|  | Some College, no degree                             | 1 (5.3)   | <b>Household Income Bracket</b>                   | 75,000-99,999                    | 4 (25.0)  |
|  | Associate degree                                    | 1 (5.3)   |   | 100,000-149,999                  | 4 (25.0)  |
|  | Bachelor’s degree                                   | 7 (36.8)  |   | 150,000-199,999                  | 5 (31.3)  |
| Graduate or professional degree                  | 9 (47.4)  | 200,000+  |   | 3 (18.8)                         |           |
| <b>Household Income Bracket</b>                  | 25,000-49,999                                       | 1 (5.3)   |   |                                  |           |
|  | 75,000-99,999                                       | 4 (21.1)  |   |                                  |           |
|  | 100,000-149,999                                     | 6 (21.1)  |   |                                  |           |
|  | 150,000-199,999                                     | 4 (21.1)  |   |                                  |           |
|  | 200,000+  | 4 (21.1)  |   |                                  |           |

**Table 5. Minor Participant Demographics in the 2-13 and 14-17 Age Groups**

| Participants – Minors Aged 14-17 Years Olds |        |           | Participants – Minors Aged 2-13 Years Old |        |           |
|---|--------|-----------|---|--------|-----------|
|   |        | N (%)     |   |        | N (%)     |
| Total                                       |        | N (N/16)  | Total                                     |        | N (N/19)  |
| Gender                                      | Female | 10 (62.5) | Gender                                    | Female | 12 (63.2) |
|   | Male   | 6 (37.5)  |   | Male   | 7 (36.8)  |
| Age (Years)                                 | 14     | 6 (37.5)  | Age (Years)                               | 2      | 1 (5.3)   |
|   | 15     | 3 (18.75) |   | 3      | 2 (10.5)  |
|   | 16     | 3 (18.75) |   | 5      | 3 (15.8)  |
|   | 17     | 4 (25.0)  |   | 6      | 2 (10.5)  |
|   |        |           |   | 7      | 2 (10.5)  |
|   |        |           |   | 9      | 1 (5.3)   |
|   |        |           |   | 10     | 1 (5.3)   |
|   |        |           |   | 11     | 2 (10.5)  |
|   |        |           |   | 12     | 3 (15.8)  |
|   |        |           |   | 13     | 2 (10.5)  |

Of the 35 collected anterior nasal swab specimens from both study cohorts, all 35 (100%) samples were received in acceptable condition as defined by Color’s accessioning standard operating procedure. Thirty-four of the 35 processed samples showed detection of human RNase P (97.1%), which indicated successful collection of human biological material. The sample that failed to amplify RNase P was likely due to specimen inadequacy, although the observer recorded no noticeable user errors associated with this specific sample.

During the usability study, staff observed participants (defined as “parents” in the 2-13 age group and “minors” in the 14-17 group) collecting an anterior nasal swab sample according to the collection kit instructions. Two of the children in the 2-13 age group touched the tip of the swab before their parents collected the sample, and four biohazard bags were improperly sealed (i.e., only partially sealed or not sealed at all) but found to be acceptable for processing. Touching the tip of the swab prior to swabbing each anterior naris invalidates the RNase P assay result. Therefore, Color incorporated an additional warning on the collection instructions emphasizing that the swab must only touch the inside of the nostrils and if compromised in any way, a new collection kit should be requested. No other deviations from the instructions were noted by research staff. None of the deviations noted above affected the accessioning and processing of the 35 samples with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay.

Following sample collection, participants completed an 8-item questionnaire. Results were analyzed qualitatively to determine if the design of the kit and/or instructions for use needed to be modified to reduce the use-related risks to acceptable levels. Cognitive debriefing interviews were conducted following the usability testing to gather users’ perspectives on each critical task.

In the 2-13 age group, where parents answered the post-collection questions, the rate of correct or positive responses was 98.7% (150/152). The rate was 100% for

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all eight questions except for one question to which the participant provided an unfavorable response and another question that a different participant answered incorrectly. The proportion of correct or positive responses for both these questions was 94.7% (18/19). Overall, the participants’ responses to the post-collection questions and the cognitive debriefing interviews provided evidence that the instructions were understandable.

In the 14-17 age group, where the minors answered the post-collection questions, the rate of correct or positive responses was 98.4% (126/128). The rate was 100% for all eight questions except for two, for which there was one unfavorable and one incorrect response (15/16 [93.4%] positive or correct responses in each case). Overall, the participants’ responses to the post-collection questions and the cognitive debriefing interviews provided evidence that the instructions were understandable, that parents were able to collect an adequate anterior nasal swab specimen from children as young as 2 years old and that minors aged 14-17 were able to self-collect an anterior nasal swab specimen successfully under adult supervision.

c. Additional Usability Study on 2-4 Year-Olds

Due to modifications made to the collection instructions pertaining to differences in the depth of insertion of the swabs between a young child and an adult (See note under step 5 in the IFU), a supplemental usability study was completed using 18 parent/minor pairs where the minors were 2-4 years old. Usability testing under observation by Color personnel was conducted in a simulated home environment in which the parent collected the anterior nasal swab sample from the minor child, packaged the specimen for shipping, and answered the post-collection questions.

A demographic questionnaire was administered to the parents as part of the screening questionnaire. The questionnaire included the parent’s gender, ethnicity, race, marital status, employment status, education level, and household income bracket. A subset of these demographics was collected for the minors including age and gender. In total, 18 parent/minor pairs completed usability testing. The demographics of the parents and the paired minors are shown in Table 6 and Table 7, respectively.

**Table 6. Participant Demographics for Parents Included in the 2-4 Age Group**

| Participants     |                          | N (%)           |
|------------------|--------------------------|-----------------|
| <b>Total</b>     |                          | <b>18 (100)</b> |
| <b>Gender</b>    | Female                   | 11 (61.1)       |
|                  | Male                     | 7 (38.9)        |
| <b>Ethnicity</b> | Hispanic or Latino/a     | 0 (0.0)         |
|                  | Non-Hispanic or Latino/a | 18 (100.0)      |
| <b>Race</b>      | Asian                    | 10 (55.6)       |
|                  | White or Caucasian       | 5 (27.8)        |
|                  | Other                    | 3 (16.7)        |

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|                                 |                                 |           |
|---------------------------------|---------------------------------|-----------|
| <b>Marital Status</b>           | Married                         | 16 (88.9) |
|                                 | Divorced                        | 1 (5.6)   |
|                                 | Never married                   | 1 (5.6)   |
| <b>Employment Status</b>        | Employed for wages full time    | 17 (94.4) |
|                                 | Homemaker                       | 1 (5.6)   |
| <b>Educational Level</b>        | Bachelor’s degree               | 7 (38.9)  |
|                                 | Graduate or professional degree | 11 (61.1) |
| <b>Household Income Bracket</b> | 75,000-99,999                   | 1 (5.6)   |
|                                 | 100,000-149,999                 | 1 (5.6)   |
|                                 | 150,000-199,999                 | 5 (27.8)  |
|                                 | 200,000+                        | 11 (61.1) |

**Table 7. Minor Participant Demographics in the 2-4 Age Group**

| <b>Participants</b> |        | <b>N (%)</b>    |
|---------------------|--------|-----------------|
| <b>Total</b>        |        | <b>18 (100)</b> |
| <b>Gender</b>       | Female | 5 (27.8)        |
|                     | Male   | 13 (72.2)       |
| <b>Age (Years)</b>  | 2      | 4 (22.2)        |
|                     | 3      | 9 (50.0)        |
|                     | 4      | 5 (27.8)        |

Of the anterior nasal swab specimens collected, 18/18 (100%) were received in acceptable condition as defined by Color’s accessioning standard operating procedure. Human RNase P nucleic acid was detected in all 18 samples (100%), which indicates successful collection of human biological material.

During the usability study, staff observed parent participants collecting a dry anterior nasal swab sample according to the updated collection kit instructions. No deviations from the instructions were noted by research staff and all 18 samples were processed with the Color SARS-CoV-2 RT-LAMP Diagnostic Assay.

Following sample collection, parent participants completed a 9-item questionnaire. Results were analyzed qualitatively to determine if the design of the kit and/or instructions for use needed to be modified to reduce the use-related risks to acceptable levels. Cognitive debriefing interviews were conducted following the usability testing to gather users’ perspectives on each critical task.

The overall rate of correct or positive responses provided by the parent participants was 98.1% (159/162). The rate was 100% for six of the nine questions. For three questions, the correct response rate was 94.4% (17/18) and in each case a different participant provided an incorrect response. Overall, the participants’ responses to the post-collection questions and the cognitive debriefing interviews provided evidence that the modified instructions pertaining to differences in the depth of swab insertion between very young children and older individuals were understandable. Additionally, the analysis of real-world

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data from a 30-day report for the Color COVID-19 Self-Swab Collection Kit and complaint history indicated that the collection kit is performing as expected.

**5) Additional Requirement:**

Color and designated laboratories will submit a report to the FDA (within 30 days of this revised EUA Summary) summarizing any testing performed with the Color COVID-19 Self-Swab Collection Kit including how many kits were requested, activated via the online portal, sent for home collection, or collected at a community-based site or distribution center from asymptomatic individuals. Designated laboratories will also document the number of kits that were shipped and returned to the laboratory according to the kit instructions, how many specimens were rejected during accessioning and the reasons for rejection, the ages of the patients, and the positivity rate.

**WARNINGS:**

- This product has not been FDA cleared or approved, but has been authorized for emergency use by FDA under an EUA;
- This product has been authorized only for the home collection and maintenance of anterior nasal swab specimens as an aid in detection of nucleic acid from SARS-CoV-2, not for any other viruses or pathogens; and,
- The emergency use of this product is only authorized for the duration of the declaration that circumstances exist justifying the authorization of emergency use of medical devices under Section 564(b)(1) of the Federal Food, Drug and Cosmetic Act, 21 U.S.C. § 360bbb-3(b)(1), unless the declaration is terminated or authorization is revoked sooner.