National Institute of Dental and Craniofacial Research

Tool Revision History:

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Number	**Date**	**Summary of Revisions Made:**
5.0	1/20/21	Removed PCR testing as Rutgers DHCW do saliva PCR testing weekly so logistics do not need to be determined and window for End-of-Study visit has been expanded to +/-14 days as POC test expire 2/8/21
6.0	11/3/2021	Removed Dr. Amy Davidow and Priyanka Unnam from the study as they are no longer at the institution

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Rutgers Pilot for Dental Health Care Worker SARS-CoV-2 Testing (PREDICT-DHCW)

Document Approval Date: 11/11/2021

Pragmatic Return to Effective Dental Infection Control through Triage and Testing

(PREDICT)

Rutgers Single Site

Dental Health Care Worker Subjects

NIDCR Protocol Number: TBD

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Principal Investigator: Cecile A. Feldman, DMD, MBA

Grantee Institution: Rutgers University, School of Dental Medicine

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November 3, 2021

National Institute of Dental and Craniofacial Research

STATEMENT OF COMPLIANCE

The study will be conducted in accordance with the International Council for Harmonisation guidelines for Good Clinical Practice (GCP) (ICH E6) and the Code of Federal Regulations on the Protection of Human Subjects (45 CFR Part 46). National Institutes of Health (NIH)-funded investigators and clinical trial site staff who are responsible for the conduct, management, or oversight of NIH-funded clinical trials have completed Human Subjects Protection and ICH GCP Training.

SIGNATURE PAGE

The signature below constitutes the approval of this protocol and the attachments, and provides the necessary assurances that this study will be conducted according to all stipulations of the protocol, including all statements regarding confidentiality, and according to local legal and regulatory requirements and applicable US federal regulations and ICH guidelines.

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LIST OF ABBREVIATIONS

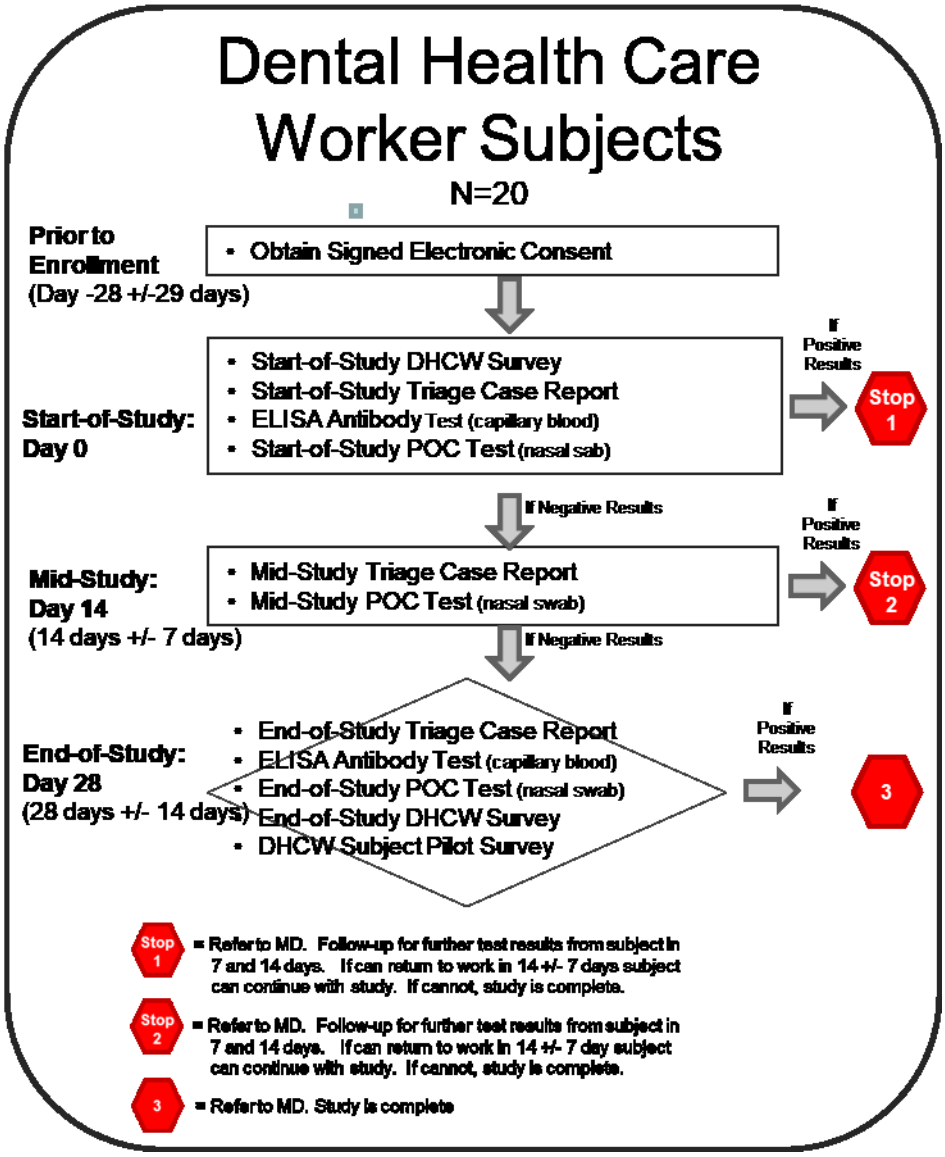
AE	Adverse Event/Adverse Experience
PBRN	Practice Based Research Network
CFR	Code of Federal Regulations
CSI	Clinical Site Investigator
CIOMS	Council for International Organizations of Medical Sciences
CONSORT	Consolidated Standards of Reporting Trials
CRF	Case Report Form
CRO	Contract Research Organization
DCC	Data Coordinating Center
DHCW	Dental Health Care Workers
DHHS	Department of Health and Human Services
DMFS	Decayed, missing, and filled tooth surfaces
DSMB	Data and Safety Monitoring Board
eCRF	Electronic Case Report Form
FDA	Food and Drug Administration
FFR	Federal Financial Report
FWA	Federalwide Assurance
GCP	Good Clinical Practice
HIPAA	Health Insurance Portability and Accountability Act
ICF	Informed Consent Form
ICH	International Council for Harmonisation
ICMJE	International Committee of Medical Journal Editors
IRB	Institutional Review Board
ISM	Independent Safety Monitor
LAB	Laboratory Based Saliva-Based COVID-19 Test
MOP	Manual of Procedures
N	Number (typically refers to participants)
NIDCR	National Institute of Dental and Craniofacial Research, NIH, DHHS
NIH	National Institutes of Health
OCTOM	Office of Clinical Trials Operations and Management, NIDCR, NIH
OHRP	Office for Human Research Protections
PHI	Protected Health Information
PI	Principal Investigator

PO	Program Official, NIDCR, NIH
POC	Point-of-Care Veritor COVID-19 Test
PREDICT	Pragmatic Return to Effective Dental Infection Control through Triage and Testing
PS	Project Scientist, NIDCR, NIH
QA	Quality Assurance
QC	Quality Control
QoL	Quality of Life
SAE	Serious Adverse Event/Serious Adverse Experience
SOP	Standard Operating Procedure
UP	Unanticipated Problem
US	United States
WHO	World Health Organization

PROTOCOL SUMMARY

Title:	Pragmatic Return to Effective Dental Infection Control through Triage and Testing
Précis:	We will conduct a feasibility study to develop and test out procedures for improved triage and COVID-19 testing in dental practices so as to improve the safety of Dental Health Care Workers (DHCW.) This is one of several feasibility studies to be conducted in Rutgers dental clinics and in dental offices which participate in the National Dental Practice Based Research Network (PBRN). These studies will assess the feasibility of implementing COVID-related procedures in the dental setting and may provide preliminary data to inform a larger network-wide study grant application.
Objectives:	**Primary:** The primary objective of this study is to determine willingness of dental health care workers to participate in a study and to test survey instruments and logistics developed for a NIH clinical study evaluating the impact of COVID-19 testing and enhanced triage in dental offices.
Population:	This study will take place at Rutgers University School of Dental Medicine. Up to twenty (20) DHCW (faculty and staff) will be recruited in the Rutgers School of Dental Medicine's dental clinics. Only adults will be recruited.
Number of Sites:	One (1)
Description of Intervention:	Viral, antigen and antibody COVID-19 tests will be administered to Dental Care Health Workers (DCHW). In addition, the use of pulse oximeters will be added to the dental health care worker triage protocol.
Study Duration:	8 months (6 months for data collection; 2 months for analysis)
Subject Participation Duration:	DHCW subjects will participate in the study for one month with up to an additional four weeks from time of signed consent to start-of-study timepoint.
Estimated Time to Complete Enrollment:	Six (6) months

Schematic of Study Design for Dental Health Care Worker Subjects:



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2 INTRODUCTION: BACKGROUND INFORMATION AND SCIENTIFIC RATIONALE

2.1 Background Information

Description of Problem:

The COVID-19 pandemic: COVID-19 has created serious concerns about the safety of patients and dental professionals as they return to a practice environment. The spread of this ubiquitous virus was first thought to be through droplets but soon it became clear that the virus could be spread by aerosols [5,6]. Many dental procedures require the mechanical preparation of hard and soft tissue using high speed handpieces which are water cooled and generate significant aerosolized sprays. The extent to which dentally-generated aerosols linger within operatories has not been clearly tested but it is certain that both dentists, dental assistants and hygienists will be exposed to significant aerosol sprays derived from patients' oral cavities [7]. As we learn more about COVID-19 and viral transmission we understand that infection and spread of the virus is due to the viral load (or dose) and the time of contact [8,9].

Uniqueness of Dental Practice: Unlike many procedures in medicine, dental/patient contact is eye to eye and the close proximity between patient and dental professionals is unavoidable [10]. Furthermore, a dental procedure can often take as long as 1 hour and prolonged close contact between dentist and patient is inevitable. Despite personal protective equipment (PPE) that includes N95 masks, face shields, gowns, and high-speed suction, viral spread from infected patients is unavoidable. This suggests that the only safe solution for maintaining the health and well-being of dental professionals in the time of COVID-19 pandemic is removing virus infected patients from their offices [11].

Waiting Rooms and Airflow: Obvious issues confronting dental practices have been discussed, however, waiting rooms with patients, bathrooms and passageways are all additional areas within offices that can be of concern. Further, the airflow in confined office spaces where patients can be waiting for 30 minutes or more can be hazardous if an asymptomatic but SARS-CoV-2 infected patient is in close proximity to a susceptible patient. Patients in a dental office can be at risk for infection that can have varied presentation and severity, and may be life threatening especially in patients with pre-existing conditions [21-23].

Solutions: One way of providing the security that dental offices are safe for both the dental professional and patient is by excluding anyone who harbors the SARS-CoV-2 virus. This of course would necessitate testing every patient at every visit or by establishing the fact that patients are safe if they have neutralizing antibody to the SARS-CoV-2 virus. These solutions, at this moment, appear to be impractical particularly if the virus affects a very small percentage of the population and testing is inaccurate. A solution to this problem is imperative both for the safety and security both the patient and dental professional. But what's to be done? How do we achieve our goal of providing a safe and secure environment that allows for routine dental care?

Several challenges exist to routine and comprehensive testing: the costs, turnaround time (maximum practical utility is perhaps derived from a simple, rapid, accurate, inexpensive point-of-care test that is not technically demanding, such a test has not yet been validated). This proposal compares the use of one such candidate POC test with the current screening gold-standard.

Conclusions*:* Every day that goes by, patients are not receiving dental services because of a SARS-CoV-2 transmission concern. Understanding risk associated with SARS-CoV-2 transmission in a dental practice and the effective use of testing and other practice modifications could dramatically reduce the risk, making both dental health care providers and patients comfortable with seeking/providing essential dental services. This proposal is designed to develop procedures that address this serious problem and test the feasibility of these procedures in a pragmatic manner to address with this existing insurmountable problem that can affect the future of dental practice and the dental health we have come to expect.

2.2 Rationale

Typical dental protocols recommend twice yearly visits to dentists for prevention and maintenance of oral health [12,13]. Dental patients who may be asymptomatic for medical problems are seen routinely in dental offices and can be screened for the early phases of medical disease during routine dental visits. For example, blood pressure monitoring and simple blood test for glycosylated hemoglobin (HbA1c) levels can be performed in dental offices for referral to physicians for further assessment [18,19]. This ready access to vulnerable patients can be considered as value-added should dental health professionals provide augmented diagnostic benefit to patients who are unaware of their need for medical intervention. However, in this time of uncertainty dentistry has been impacted by fear and poorly defined strategies to mitigate COVID-19, that can compromise the willingness of dental professionals to open their dental practices [20].

Little is Known Regarding the Effectiveness COVID-19 Triage in Dental Practice*:* Little is known about the effectiveness of triage protocols which have been recommended by the CDC. For example, most offices are using temporal thermometers, yet many are uncalibrated. In addition, screening questions continue to evolve, and the veracity of patient responses remains unverified.

Little is Known Regarding the Impact of COVID-19 Testing in Dental Practice: Little is known about the value of testing and about the willingness of DHCW to implement SARS-CoV-2 testing in a dental office or the most effective use of such testing.

The following questions need to be answered:

- Perception of safety and comfort: Will patients and DHCW in an office with testing feel safer and be more comfortable delivering care during a COVID-19 or other infectious disease pandemic?
- Testing preference: Do DHCW and patients prefer POC testing rather than testing that requires laboratory processing?
- Effectiveness of triage: Is the triage protocol being followed today effective or do patients and DHCW respond negatively to COVID-19 symptoms because of the fear of not being seen or being turned away from work?
- Effectiveness of triage methods: Are objective measures such as temperature and pulse oximeter readings effective in identifying “asymptomatic” cases?

2.2.1 Potential Risks

This research involves testing procedures with varying degrees of risk to the study participants.

- Saliva Test- minimal risk. The saliva test is non-invasive, requires spitting into a tube, and is completed independently, without interaction with a member of the healthcare team.
- Nasal swab- minimal risk. The nasal swab involves insertion of a swab into the forward part of the nasal cavity by a member of the healthcare team, which may cause slight discomfort to the participant.
- Tongue swab – minimal risk. The tongue swab involves running a tongue cell collector across the top of the tongue which may cause slight discomfort to the participant.
- Finger prick- minimal risk. A finger prick test is a procedure in which a finger is pricked with a lancet to obtain a small quantity of capillary blood for testing. The site, free of surface arterial flow, where the blood is to be collected is sterilized with a topical germicide, and the skin is pierced with a sterile lancet. There is a slight risk of discomfort from the lancet stick and irritation or infection in the area the lancet punctured the skin.

In addition, different SARS-CoV-2 test types have varying degrees of sensitivity and specificity, which may result in false negative and false positive test results. While a false negative result may give a participant a false sense of security, this would not pose additional risks to patients or DHCW, as they would have been treated with each office’s infection control protocol regardless of participation in the

study. On the other hand, a false positive result will prompt the DHCW or patient to undergo additional testing by their primary health care provider. Should they test positive again, they would need to follow their local health department recommendations which may require quarantine.

There is a risk of loss of confidentiality for all study participants. Precautions will be in place to minimize this risk, such as collecting only minimal identifying information, using unique study codes for participants, collecting data using encrypted computers, and maintaining electronic data files on a password-protected computer drive, and storing data on encrypted computers or in locked cabinets (located in locked offices). Individual identifier numbers that are linked to participant contact information will be stored separately from the data. Compliance with all IRB regulations concerning data collection, data analysis, data storage, and data destruction will be strictly observed.

2.2.2 Potential Benefits

There is no benefit to DHCW and patients participating in this study beyond the fact that DHCW and patients would receive the results of the free SARS-CoV-2 tests they undergo.

3 OBJECTIVES AND OUTCOME MEASURES

3.0 Rutgers DHCW Feasibility Study Outcomes

PILOT Objectives	Brief Description/Justification of Outcome Measure	Outcome Measured By	Time Frame
To Determine DHCW Willingness to Participate	Willingness to participate is important in determining whether dental offices, DHCW would be willing to participate in a large-scale study	• Ratio of DHCW agreeing to participate as compared to all DHCW asked to participate • Thoroughness of consent process and ability to ask questions	***Willingness to Participate:*** • DHCW – at time of consent by DHCW consent
To Determine DHCW and Willingness/Ability to follow through with Triage, Testing and Survey Administration Procedures	Determining willingness and ability to follow thru with triage, testing and survey administration procedures is important for refining the survey procedures	• % who complete the study • % who complete surveys o Start-of-Study DHCW Survey o End-Of-Study DHCW Survey • % who feel testing (Saliva, PCR, POC, and ELISA Antibody) procedure was easy to comply with o Specimen collection o Specimen preparation for shipping o Specimen storage (till assay) o Timeliness of results o Reporting of results	***% Complete Study:*** • For DHCW - At time End-of-Study (Day 28) ***% All Surveys Completed:*** • For DHCW - At time End-of-Study (Day 28) ***% Feel Testing Protocol was Easy to Comply With:*** • For DHCW - At time End-of-Study (Day 28)
To Determine Ease of Use with REDCap Survey Instruments • Dental Health Care Worker Subject o Start-of-Study Survey o End-of-Study Survey o Triage Survey	Determining the ease of use and completeness of the REDCap instruments enables refinement of the system	• % who feel surveys are easy to complete due to administration method: o Start-of-Study DHCW Survey o End-of-Study DHCW Survey o Triage Case Report • % who feel survey questions were understandable: o Start-of-Study DHCW Survey o End-of-Study DHCW Survey o Triage Case Report • % completed surveys: o Start-of-Study DHCW Survey o End-of-Study DHCW Survey o Triage Case Report	***% indicating surveys were easy to complete due to administration method:*** • For DHCW - At time End-of-Study (Day 28) ***% indicating survey questions were easy to understand:*** • For DHCW - At time End-of-Study (Day 28) ***% Surveys Completed:*** • For DHCW - At time End-of-Study (Day 28)

3.1 Primary Outcomes for Full Study (Data Collection is Being Performed to Determine Instrument Feasibility)

Full Study Objective	Brief Description/Justification of Outcome Measure	Outcome Measured By	Time Frame
Objective 1 – Dental health care personnel feel safe in the dental office	***Safety Culture Evaluation Survey*** for DHCW is a 6-item survey using a 4 point Likert scale seeking the agreement with 6 criteria associated high performing safety organization characteristics. ***Willingness to Come to Work*** reflects a DHCW's safety in the workplace. ***Willingness to Refer Other Patients*** reflects DHCW's safety of the dental practice.	***DHCW - Safety Culture Evaluation Survey:*** 6 item survey. Numeric responses to each item using a four-point Likert Scale are summed for a score which reflects the level of safety in the organization. (1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree.) ***DHCW- Safety:*** How safe to do feel coming to work? 5 Point Likert scale ***DHCW Willingness to Refer Other Patients:*** How likely would you refer a family or friend to this dental office? 5 Point Likert Scale ***DHCW Willingness to Come to Work:*** how comfortable are you coming to work each day? 5 Point Likert Scale	***Sense of Safety for Dental Health Personnel:*** • Start of study • End of study ***Willingness to Refer Other Patients:*** • DHCW – Start of study • DHCW – End of study ***Willingness to Come to Work:*** • Start of study • End of study

3.2 Secondary Outcomes for Full Study (Data Collection is Being Performed to Determine Instrument Feasibility)

Objective	Brief Description/ Justification of Outcome Measure	Outcome Measured By	Time Frame
Objective 2: Determine the Efficiency and Effectiveness of: • **Efficiency of DHCW Triage Protocols** • **Efficiency of Patient Triage Protocols** • **Effectiveness Patient Testing Protocols**	***Efficiency of Triage Protocols:*** • Acceptability of triage protocols is based upon resources (time and effort and facilities) required to implement the protocol ***Effectiveness of Triage Protocols*** • Dentist's willingness to continue use of triage protocols is based upon the usefulness/outcomes of the triage. ***Efficiency of Testing Protocols:*** • Acceptability of testing protocols is based upon resources (time and effort and facilities) required to implement the protocol ***Effectiveness of Testing Protocols*** • Dentist's willingness to implement testing protocols is likely to be based upon testing's ability to identify asymptomatic DHCW and patients.	***Efficiency of Triage Protocols:*** • Time needed to complete triage survey ***Effectiveness of Triage Protocols*** • Comparison of number of DHCW not able to report to work due to LAB or POC test results • Comparison of Triage Survey to Medical History consistent with COVID-19 symptoms for DHCW ***Efficiency of Testing Protocols:*** • Time and supplies needed to conduct LAB vs. POC test ***Effectiveness of Testing Protocols*** • Comparison of number of DHCW not able to report to work • Comparison of number of patients not able to report for their patient visits	***Efficiency of Triage Protocols:*** • End of study ***Effectiveness of Triage Protocols*** • End of study ***Efficiency of Testing Protocols:*** • End-of-Study ***Effectiveness of Testing Protocols*** • End-of-Study

3.3 Tertiary/Exploratory Outcomes for Full Study (Data Collection is Being Performed to Determine Instrument Feasibility)

Objective	Brief Description/Justification of Outcome Measure	Outcome Measured By	Time Frame
Objective 3 (exploratory): Examine SARS-CoV-2 Positivity Rate and Immuno-Conversion Rate • **DHCW positivity rate** • **DHCWs with IgG** • **DHCWs with IgM** • **DHCWs who immune-convert**	***Positivity Rate:*** • POC antigen with a nasal swab • PCR with a saliva or tongue scraping specimen ***Immuno-conversion Rate*** • ELISA with Capillary Blood specimen	***DHCW Positivity Rate:*** • POC antigen • PCR viral test ***DHCW Immuno-conversion Rate*** • ELISA antibody	***DHCW Positivity Rate:*** • Start of Study • Every 2 weeks • End of Study ***DHCW Immuno-conversion Rate*** • Start-of-Study • Every 2 Weeks • End-of-Study

4 STUDY DESIGN

Description: This study will assess the feasibility of implementing SARS-CoV-2 testing-related procedures and instruments in the dental setting to ensure the safety of DHCWs and patients. Results from this study may provide preliminary data to inform a larger network-wide study grant application.

Two patient SARS-CoV-2 testing protocols will be assessed for feasibly along with one dental health care worker protocol.

Study Population: The study population for this study will be dentists, hygienists, dental assistants and dental office staff at the Rutgers School of Dental Medicine.

Important Outcomes:

For this study, important outcomes include percent of DHCW willing to participate and percent completing the protocol.

Single or Multicenter: Single- this study will utilize the Rutgers School of Dental Medicine's Newark facility.

Number of Study Groups/Arms: There are one (1) study group of Dental Health Care Workers (DHCW).

Expected Duration of Subject Participation: Up to 4 weeks might elapse between signing of consent forms and start of study (in order to batch data collection for feasibility and ease). However, data collection from the initial visit to the final visit will take 4 weeks to complete. Hence, while subject participation in study will last 4 weeks, the total duration that the subject is involved in the study (from being on study (consent form signature) to completion of data collection may take up to 8 weeks (two months).

Sequence of Procedures and Duration of Study Period:

Consent Process for DHCW Participants
DHCWs who indicate interest will complete the consent process. The consent will clearly outline participant expectations and offer the opportunity for potential participants to contact the office for more information as needed. Participants who fully understand the study and elect to participate will affirm their willingness to participate by signing the consent form. Consent will be registered electronically on REDCap at enrollment. The participants will be provided an iPad to register their consent directly on to REDCap. REDCap is a HIPAA-compliant database that is password protected and secure.

Study Procedures for DHCW Participants
Prior to study initiation (Up to 4 weeks prior)

- Complete consent

Day 1

- Complete an electronic survey: *DHCW Start of Study Survey*
  - Questions include demographics, PPE used in the office, work practice controls used in the office, importance of triage and testing, importance of PPE measures, perceptions of safety and comfort in the workplace, safety culture in the office, SARS-CoV-2 testing preferences, dentists role in SARS-CoV-2 testing, and willingness to test in the office
  - 20 questions
- Undergo a three-part COVID-19 triage screening*
  - Symptom questions
    - Presence or absence of:

- fever or chills
- cough
- shortness of breath or difficulty breathing
- fatigue
- muscle and body aches
- headache
- loss of taste
- loss of smell
- sore throat
- congestion or runny nose
- nausea or vomiting
- diarrhea

  - Temperature check
  - Pulse oximeter reading
- Complete two COVID-19 related tests**
  - SARS-CoV-2 POC test
    - A nasal swab will sweep the inside of the participant's nose to collect your specimen for the SARS-CoV-2 test
    - The office staff will process the specimen
  - ELISA Antibody test
    - A small lancet will create a finger prick to collect a small blood sample
    - The sample will be processed by the Public Health Research Institute PHRI lab

Mid-Study- Day 14 (+/- 7 days)

- Undergo a COVID-19 triage screening in the office*
- Complete a SARS-CoV-2 POC test**
  - A nasal swab will sweep the inside of the participant's nose to collect your specimen for the SARS-CoV-2 test
  - The office staff will process the specimen

End of Study- Day 28 (+/- 14 days)

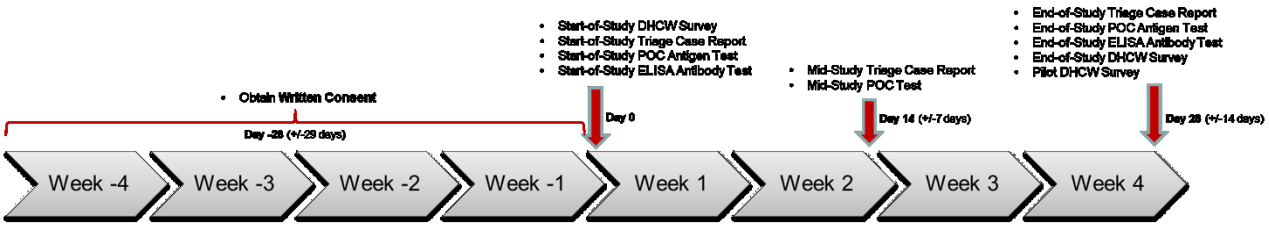
- Undergo a three-part COVID-19 triage screening*
  - Symptom questions
  - Temperature check
  - Pulse oximeter reading
- Complete two SARS-CoV-2 tests**
  - SARS-CoV-2 POC test
    - A nasal swab will sweep the inside of the participant's nose to collect your specimen for the SARS-CoV-2 test
    - The office staff will process the specimen
  - ELISA Antibody test
    - A small lancet will create a finger prick to collect a small blood sample
    - The sample will be sent to and processed by the PHRI lab
- Complete two electronic surveys:
  - *DHCW End of Study Survey*- Questions include importance of triage and testing, importance of PPE measures, perceptions of safety and comfort in the workplace, safety culture in the office, SARS-CoV-2 testing preferences, dentists role in SARS-CoV-2 testing, willingness to test in the office, and vaccinations
  - *DHCW Participation Survey*- Questions explore perceptions related to study participation including survey and testing logistics
  - 29 questions in the two surveys put-together

If any aspect of the COVID-19 triage screening is positive, the DHCW will be excused from work and referred to their primary care physician for further testing.

- Positive screening include having one or more symptoms
- A positive temperature is considered greater than 100.4 degrees F
- A positive pulse oximeter is considered when the blood oxygen saturation level is below 95%

The results of the POC test and the lab processed SARS-CoV-2 antibody test will be recorded in the *Testing Case Report* form in REDCap.

- If **POSITVE**: The Clinic Director or one of the co-investigators will communicate positive results to the participant upon receipt. Positive participants will be dismissed from duties and instructed to consult with their primary care provider for further testing.
- If **NEGATIVE**: The Clinic Director or one of the co-investigators will communicate negative results to the participant.



5 STUDY POPULATION

5.1 Participant Inclusion Criteria

A ***Dental Health Care Worker*** must meet all of the following criteria to be eligible to participate in the study:

- Work at the Rutgers School of Dental Medicine
- Be 18 years or older
- Be able to understand the informed consent.
- Provide signed and dated informed consent form
- Be able to understand all instructions for data collection instruments in English
- Be willing and able to comply with all study procedures and be available for the duration of the study

5.2 Participant Exclusion Criteria

Participants would be excluded if they participated in the feasibility study previously or if they are unwilling to have their de-identified data made available to other researchers.

5.3 Strategies for Recruitment and Retention

Target Sample Size: 20 dental care health workers.

Target Sample Size by Gender, Race, Ethnicity, and Age: Study population will be drawn from faculty and staff at the Rutgers School of Dental Medicine. All will be English speaking. Age range will be between 18 and 100 years of age. Racial and ethnicity background will be reflective of the respective populations at the Rutgers Schools of Dental Medicine with about 52% being African American and 33% Hispanic.

Study Population: The DHCW study population will be residents, faculty and staff working at the Rutgers School of Dental Medicine.

Inclusion of Women and Minorities and Individuals of All Ages:

Women: Women will be included in this study. Pregnant women are not excluded from participating.

Minorities: Minorities will be included in this study.

Recruitment Strategies: All the DHCWs participating in this pilot feasibility study are staff/faculty at Rutgers School of Dental Medicine- mirroring the future design where the dental director of the participating practice-based research network will reach out to his staff to enroll study subjects, here too, the clinic director (GS) and coinvestigators (SA and RF) will reach out staff/faculty in the same clinic to invite study participants. The study aspects will be discussed in department clinical discussions- there are some overlapping aspects with adaptations to the ongoing pandemic. If DHCWs express interest, copies of the consent form will be handed for them to review and questions will be answered. Co-investigators GS, SA and RF as well as the research staff, PU are all in the same department and are approachable for any clarifications. In addition, flyers will be displayed in the department office and clinic space. Enrollment and study participation will be strictly voluntary.

If 20 dental health care workers cannot be recruited in the Oral Medicine clinic, recruitment will expand to the school's other clinics. It is not anticipated that there will be difficulties recruiting sufficient dental health care workers and patients.

Participants will be batched in groups of 5-10 and scheduled for study start at a convenient time in the clinic (in a manner that does not disrupt patient care). Thus, at that time itself, it will be feasible to identify

and communicate every time point in the study. Because the enrolled participants are expected to be present at work otherwise (unless scheduled out, in which case, the flexibility in scheduling the time points will allow re-scheduling a particular missed time-point), contacting a subject to schedule/remind of a study visit will be convenient.

Retention: In order to minimize loss of study participants and/or incomplete data collection, the following activities will take place:

- The Research Clinical Director will work with the Research Assistants responsible for enrolling subjects and enable completion of surveys on REDCap. Both the director, coinvestigators (GS, SA and RF) and research staff (PU) are part of the same clinic and hence are optimally situated to discuss about the study. 2 iPads and 'crayons' are available for use by the study participants. The coinvestigators and research staff will provide iPads for collecting survey responses. Each participant will be able to log their responses in REDCap under the appropriate subject ID.
- Participants will receive compensation.

Compensation and Scheduled Payments: Dental Health Care Workers who complete the protocol, including the end-of-study survey will receive $125 each. Compensation depends on completing all of the time-points of the study- both assessments and surveys. Given the 7 day flexibility for each time-point, any study participant who may test positive for COVID-19 may still be able to complete study time-point even if required to self-isolate per his/her physician's advice. If not the testing, at least the surveys can be completed at return to work. Completion of all study-related surveys will enable full compensation.

Additional Plans to Minimize Loss of Follow-up and Missing Data: The following will minimize loss of follow-up and/or missing data:

- When appropriate, REDCap survey data fields are set to "required".
- REDCAP validation rules on data fields to limit responses to valid responses

5.4 Participant Withdrawal or Discontinuation from Study Procedures/Intervention

5.4.1 Reasons for Participant Withdrawal or Discontinuation from Study Procedures/Intervention

Participants are free to withdraw from participation in the study at any time upon request.

An investigator may discontinue an individual's participation in an intervention or withdraw an individual from the study if:

- The participant has a serious adverse event requiring hospitalization.
- Any clinical adverse event (AE), laboratory abnormality, or other medical condition or situation occurs such that continued participation in the study would not be in the best interest of the participant.
- The participant meets an exclusion criterion (either newly developed or not previously recognized) that precludes further study participation.

5.4.2 Handling of Participant Withdrawals from Study

Participants may withdraw participation consent at any time, either verbally or in writing. Participants who further withdraw their consent for the use of data already collected must do so in writing. The Research Clinical Director or Research Assistant will interview the participant and document the withdrawal of consent using the Consent Withdrawn Received Form in the REDCap system. Participants who withdraw will not be replaced.

Documentation includes the date, the reason for participant withdrawal, as well as, the upload of any written withdrawal request. Upon withdrawal, all study procedures would cease, however, the participant would be offered continued care as part of the normal standard of care.

5.5 Premature Termination or Suspension of Study

This study may be suspended or prematurely terminated if there is sufficient reasonable cause. Written notification, documenting the reason for study suspension or termination, will be provided by the suspending or terminating party to Dr. Cecile Feldman and the funding agency (NIDCR). The principal investigator will also promptly inform the IRB and NIDCR and will provide the reason(s) for the termination or suspension.

Circumstances that may warrant termination include, but are not limited to:

- Determination of unexpected, significant, or unacceptable risk to participants.
- Insufficient adherence to protocol requirements.
- Data that are not sufficiently complete and/or evaluable.
- Determination of futility.

6 STUDY SCHEDULE

6.1 Dental Health Care Worker Subjects

The following is the schedule of events for Dental Health Care Worker Subjects

Visit	Day	Dental Health Care Worker Subjects Activities Performed
Enrollment	Day -28 (+/- 29 days)	• Obtain written Informed Consent
Start-of-Study	Day 0	• Complete Start-of-Study Survey • Complete Start-of-Study Triage Case Report • Undergo POC (antigen) COVID-19 test • Provide specimen for ELISA (antibody) test
Mid-Study	Day 14 (+/- 7 days)	• Complete Mid-Study Triage Case Report • Undergo POC Covid-19 Test
End-of-Study	Day 28 (+/- 14 days)	• Complete End-of-Study Triage Case Report • Undergo POC COVID-19 Test • Provide specimen for ELISA (antibody) test • Complete End-of-Study Survey • Complete DHCW Participation Questionnaire

6.2 Withdrawal Visit

Not applicable. If a subject withdraws early, there is no withdrawal visit.

6.3 Unscheduled Visit

Not applicable.

7 STUDY PROCEDURES/EVALUATIONS

As part of this study, COVID-19 triage case report will be completed, SARS-CoV-2 testing will be performed and perception and attitude surveys will be administered. The DHCS Start-of-Visit, Mid-Visit and End-of-Visit will include recording of temperatures and pulse oximeter reading.

For the purpose of this study, a SARS-CoV-2 positive result is not considered an adverse event though results of this test will be recorded.

Dental Health Care Worker subjects who test antigen positive or who triage positive without any preexisting medical condition will be instructed to speak to their physicians for a definitive diagnosis and follow-up. If a dental health care worker is back to work in-time for the mid-study testing, the mid-study protocol will be followed. Similarly, if a dental health worker can return to work in time for the end-of-study testing, the end-of-study protocol will be followed. In either case, a follow-up call will be made 1 week after (and 2 weeks after if necessary,) learning of the research study protocol call viral or antigen positive test results to record any confirmatory tests which were obtained based upon the advice of the worker's physician.

7.1 Study Procedures/Evaluations

The following study procedures will be completed

Dental Health Care Worker Subjects

Procedure and Evaluations	Purpose	Completed as Part of Study	When Completed	Who Completes
Complete Consent	Complete informed consent	Yes	**Prior to Enrollment**	Study investigators meet with subjects and document consent in REDCap
Start-of-study DHCW Survey • PPE used • Environmental Controls Used • Perception of Importance • Comfort • Safety • SARS-CoV-2 Testing Preferences • Vaccination Opinions	Collect baseline Outcomes measures	Yes	**Start-of-Study** (day 0)	Data entered via REDCap self-administered survey.
Triage Case Reports	Collect COVID-19 screening data	Yes	**Start-of-Study** (Day 0) **Mid-Study** (Day 14) **End of Study** (Day 28)	Data entered into REDCap via eCRF by Research Clinical Director who interviews subject
Testing Case Reports	Collect information on outcomes of SARS-CoV-2 testing	Yes	**Start-of-Study** (Day 0) **Mid-Study** (Day 14) **End of Study** (Day 28)	**POC Test -** Data entered into REDCap via eCRF by Research Clinical Director **Eliza Ab test –** Data entered into REDCap eCRF by Research Clinical Director or Laboratory Technicians running ELISA procedures. If positive, PI or Research Co-Investigator calls DHCW. DHCS will be referred to their primary care MD.
End-of-Study DHCW Survey	Collect payment information	Yes	**End-of-Study** (Day 28)	Data entered via REDCap self-administered survey.
Dental Health Care Participation Questionnaire	Collect feasibility	Yes	**End-of-Study** (Day 28)	Data entered via REDCap self-administered survey.

	information on surveys and logistics			

7.2 Laboratory Procedures/Evaluations

7.2.1 Clinical Laboratory Evaluations

Dental health care worker subjects (dentists, hygienist, assistants and front desk personnel) will be tested for SARS-CoV-2. DHCW will be administered POC and ELISA Antibody Test.

	POC Test (Antigen)	DHCW ELISA Antibody Test
Test Description		
Company	BD Veritor System COVID-19 Test Kits	Rutgers
Sample collected via	Nasal swab via BD Veritor nasal collection system	Capillary blood sample via Neoteryx Mitra Cartridge
What is being Tested	SARS-CoV-2 Nucleocapsid Antigen	IgG and IgM
Test Administration (specimen collection)	Nasal swab performed by Research Clinical Director or co-investigator	Capillary blood collection performed by Research Clinical Director or co-investigator
Test Administration (specimen processing)	Veritor test performed by Research Clinical Director in dental clinic	Mitra Cartridge is processed at ICPH-PHRI center, New Jersey Medical School, Newark, NJ
Results	Dichotomous (+ or -)	Quantitative

With regard to the quality of the SARS-CoV-2 test specimen, the following will be used to assess the quality of the specimen.

	POC Test	ELISA Antibody Test
Indication of Proper Processing	The Veritor instrument will report if a sample is not able to be processed. This feedback will be used to identify insufficient training or unanticipated problems.	ICPH will report if a sample is not able to be processed. This feedback will be used to identify insufficient training or unanticipated problems.

Compliance with study protocols will be based upon the PI and the co-investigators following the REDCap dashboard. The dashboard exhibits red indicators for instruments which have been started and not completed, yellow indicators for instruments which have been completed and not verified and green indicators for instruments which have been completed and reviewed. The PI or Chief of Clinical Protocol will be responsible for reviewing each instrument and changing the status from unverified to verified. Any issues with compliance with the study protocol identified by the PI or Chief of Clinical Protocol will be reviewed with the co-investigators and be used to identify any unanticipated problems and develop/implement any necessary corrective action plans.

7.2.2 Specimen Preparation, Handling, and Storage

The following details specimen preparation, handling and storage.

	POC Test	ELISA Antibody Test
Sample Collection & Shipping		
Sample Collection Materials	Becton Dickenson via Henry Schein -- Nasal swab	Capillary blood sample via Mitra Cartridge

	included in BD Veritor system	
Storage of Specimen Collection Supplies and POC Test Kits	Clinical Research Center (D level of Dental School) and dental clinic dispensaries in the dental school	ICPH-PHRI center, 2nd floor enhanced BSL2 facility.
Transport Media	Not applicable (POC Test)	Sponge with capillary blood is transported with desiccant)
Packaging Specimen for Shipping/Transport	Not applicable (POC Test)	Post sampling, Mitra Cartridges are inserted into specimen bag which contain a dry card that absorbs moistures, sealed the bag shut, and stored in a secure container
Sample Processing (Performing the Test)		
Processing Supplies	Included in point-of-care BD Veritor kit	96 well plate, ELISA reagents
Processing Time	15 minutes	Overnight extraction at 4C, followed by automated ELISA
Conditions for Stability and Transport Condition		
Stability prior to Use	No special storage conditions required	No special storage conditions required Dry blood on Mitra Cartridge stable at room temperature for 28 days.
Stability during shipping	Not applicable (POC Test)	Yes due to desiccant
Storage prior to processing	Not applicable (POC Test)	PHRI Laboratory
Stability prior to processing	Stable at room temperature	Stable at room temperature
Tracking		
Labeling	Not applicable (POC Test)	Specimen ID (bar code) Subject ID (bar code) Subject Name Date of Specimen
Tracking of Specimen Collection Kits	Not applicable (POC Test)	REDCap System and/or Excel Worksheet
Tracking of Tests Administered	Completion of REDCap SARS-CoV-2 Test Order and Results Form (which enables the generation of a Specimen Tracking Log)	Completion of REDCap SARS-CoV-2 Test Order and Results Form (which enables the generation of a Specimen Tracking Log)
Reporting of Results		
Time from specimen collection to reporting of results	15 minutes	Results are available within 1 week
Results Reporting	Via posting in REDCap by Research Coordintor	Via secure e-mail and then posted into REDCap via Research Clinical Director

7.2.3 Specimen Shipment/Transport

The Mitra Cartridge includes a desiccant or sample preservation. All can be stored at room temperature for at least one week. For the purposes of Rutgers DHCW study, the specimen will not be mailed but will be picked up by PHRI lab personnel on the day of collection.

	POC Test	ELISA Antibody Test
Shipment Method and Frequency	Not applicable	Specimens will be despatched to PHRI for processing.
Packaging Specimen for Shipping	Not applicable (POC Test)	Post sampling, Mitra Cartridges are inserted into specimen bag which contain

		a dry card that absorbs moisture, seal the bag shut, and insert into a shipping envelope.
Shipping Address	Not applicable	Rutgers University New Jersey Medical School ICPH-PHRI 225 Warren Street Newark, NJ 07103
Contact Information for Laboratory Personnel	Not applicable	Dr. Maria Gennaro Phone: (973) 854-=3210 Marila.gennaro@rutgers.edu
Days and Times shipments/Trnasport are allowed	Not applicable	Monday thru Thursday 9:00 am to 5:00 pm
Labeling Requirements for Specimen Shipping	Not applicable	Subject Number, Subject Name and Mitra Cartridge ID/Bar Code
Special Instruction for Specimen Collection	No special instructions	Clean area for finger prick with alcohol gauze prior to pricking finger
Special Instructions for Specimens for Shipment/Transport (i.e. dry ice, wet ice)	Not applicable	No special instructions
Completion of Specimen-Tracking Log	Completion of REDCap COVID-19 Test Order and Results Form (which enables the generation of a Specimen Tracking Log)	Completion of REDCap COVID-19 Test Order and Results Form (which enables the generation of a Specimen Tracking Log)

8 ASSESSMENT OF SAFETY

8.1 Definitions and Specifications of Safety Parameters

Safety monitoring for this study will focus on unanticipated problems involving risks to participants, including unanticipated problems that meet the definition of a serious adverse event.

Event	Definition	Form	Who completes REDCap form	Time Frame For Reporting to IRB	Additional Reports to
Unanticipated Problems	Any problem or event which in the opinion of the local investigator was unanticipated, reflects new or increased risk to the subjects and was possibly related to the research procedures. This includes any serious adverse event that is defined as an event which requires hospitalization and/or causes mortality	Unanticipated Problem Form	Site Director or Clinical Research Clinical Director	5 business days from the date of discovery 24 hours for hospitalization 24 hours for fatalities	**Rutgers IRB**
Protocol Deviations	Any change, divergence, or departure from the study design or procedures of a research protocol that is under the investigator's control and that has not been approved by the IRB.	Protocol Deviation/ Violation Form	Site Director or Clinical Research Clinical Director	5 business days from the date of discovery	**Rutgers IRB**
Protocol Violation	Any deviation from the IRB approved protocol that may affect the subject's rights, safety, or well-being and/or the completeness, accuracy and reliability of the study data	Protocol Deviation/ Violation Form	Site Director or Clinical Research Clinical Director	5 business days from the date of discovery	**Rutgers IRB**

Study procedures are limited to surveys and collecting samples. We therefore expect few, if any study related serious adverse events. In the rare event that a serious adverse event were to occur, an Unanticipated Problem form would be completed and SAE reporting timelines would be followed.

8.1.1 Unanticipated Problems

The Office for Human Research Protections (OHRP) considers unanticipated problems involving risks to subjects or others to include, in general, any incident, experience, or outcome that meets **all** of the following criteria:

- unexpected in terms of nature, severity, or frequency given (a) the research procedures that are described in the protocol-related documents, such as the IRB-approved research protocol and informed consent document; and (b) the characteristics of the subject population being studied;
- related or possibly related to participation in the research ("possibly related" means there is a reasonable possibility that the incident, experience, or outcome may have been caused by the procedures involved in the research); and
- suggests that the research places subjects or others at a greater risk of harm (including physical, psychological, economic, or social harm) than was previously known or recognized.

8.1.2 Serious Adverse Events

A serious adverse event (SAE) is one that meets one or more of the following criteria:

- Results in death
- Is life-threatening (places the subject at immediate risk of death from the event as it occurred)
- Results in inpatient hospitalization or prolongation of existing hospitalization
- Results in a persistent or significant disability or incapacity
- Results in a congenital anomaly or birth defect

- An important medical event that may not result in death, be life threatening, or require hospitalization may be considered an SAE when, based upon appropriate medical judgment, the event may jeopardize the subject and may require medical or surgical intervention to prevent one of the outcomes listed in this definition.

If a SAE becomes known, the Research Clinical Director will immediately notify the study PI. The Research Clinical Director will record the event in the REDCap Unanticipated Problem Form based upon information obtained.

8.2 Reporting Procedures

8.2.1 Unanticipated Problem Reporting

Incidents or events that meet the Office of Human Research Protection (OHRP) criteria for UPs require the creation and completion of a UP report form.

OHRP recommends that investigators include the following information when reporting an adverse event, or any other incident, experience, or outcome as an unanticipated problem to the IRB:

- appropriate identifying information for the research protocol, such as the title, investigator's name, and the IRB project number;
- a detailed description of the adverse event, incident, experience, or outcome;
- an explanation of the basis for determining that the adverse event, incident, experience, or outcome represents an unanticipated problem;
- a description of any changes to the protocol or other corrective actions that have been taken or are proposed in response to the unanticipated problem.

To satisfy the requirement for prompt reporting, UPs will be reported that are not SAEs will be reported using the following timeline:

- Unanticipated problems that are SAEs will be reported to the IRB as soon as possible, and no later than within 24 hours of the investigator becoming aware of the event.
- Any other UP will be reported to the IRB within 5 business days of the investigator becoming aware of the problem.
- All UPs should be reported to appropriate institutional officials (as required by an institution's written reporting procedures), the supporting agency head (or designee), and OHRP within one month of the IRB's receipt of the report of the problem from the investigator.

. All unanticipated problems will be reported to NIDCR concurrently with reporting to the IRB. These reports will be made to NIDCR's centralized reporting system via the Clinical Research Operations and Management Support (CROMS) contractor.

9 STUDY OVERSIGHT

The investigator will be responsible for study oversight, including monitoring safety, ensuring that the study is conducted according to the protocol and ensuring data integrity. The PI will review the data for safety concerns and data trends at regular intervals, and will promptly submit reportable events to the IRB and NIDCR that arise during the conduct of the study.

10 CLINICAL SITE MONITORING

No outside clinical site monitoring will be employed for this study. The Principal Investigator(s) and staff will closely monitor the subjects as they progress through the study. They will monitor and evaluate study processes and documentation based on the International Council for Harmonisation (ICH), E6: Good Clinical Practice guidelines (GCP), and internal quality management plans. The NIDCR reserves the right to conduct independent clinical site monitoring as necessary.

11 STATISTICAL CONSIDERATIONS

11.1 Study Hypotheses.

For th**is study,** we hypothesize:

- Dental health care workers will be willing to participate
- Surveys will be easy to complete
- Testing protocols will be easy to complete

Analyses will be performed to test these hypotheses.

11.2 Sample Size Considerations

This is a feasibility study to refine trial logistics. No sample size calculations are being performed.

11.3 Final Analysis Plan

Data to be collected includes:

Item	Type of Variable
Willingness to Participate • Dentist, Hygienist, Assistant and Front Desk personnel willing to participate	• Willingness to participate (Binary – Yes/No)
Triage Survey	• Ease of Administration (3 point Likert Scale) ○ Very easy to complete survey due to administration method ○ Easy to administer complete survey due to administration method ○ Not easy to complete survey due to survey administration method • Completeness (Binary – Yes/No) • Question understandability (3 point Likert Scale) ○ Very clear to understand ○ Understandable with some clarification provided by the administrator ○ Not clear to understand
Safety Perception Survey • Start-of-Study DHCW Survey • End-of-Study DHCW Survey	• Administration method (3 point Likert Scale) ○ Very easy to complete survey due to administration method ○ Easy to complete survey due to administration method ○ Not easy to complete survey due to administration method • Completeness (Binary – Yes/No) • Question understandability (3 point Likert Scale) ○ Very clear to understand ○ Understandable with some clarification provided by the administrator ○ Not clear to understand
Testing Logistics • POC – BD Veritor SARS-CoV-2 antigen test • ELISA antibody SARS-CoV-2 test	• Specimen Collection (3 point Likert Scale) ○ Very easy to collect ○ Easy to collect ○ Not easy to collect • Specimen preparation for shipping (3 point Likert Scale) ○ Very easy to prepare ○ Easy to prepare ○ Not easy to prepare • Specimen storage until processing (Binary – Easy/Not Easy) ○ Easy to Store

	○ Not easy to store • Timeliness of results (3 point Likert Scale) ○ Very timeless access to results ○ Timely access to results ○ Access to results not timely • Reporting of results (3 point Likert Scale) ○ Very easy to access results ○ Easy to access results ○ Not easy to access results
Testing Case Report	• Completeness (Binary – Yes/No)

Descriptive statistics (frequencies) for all variables will be analyzed.

12 SOURCE DOCUMENTS AND ACCESS TO SOURCE DATA/DOCUMENTS

All study survey information will be captured electronically and stored on secure, encrypted Rutgers University servers.

- Consents will be captured and recorded directly into the REDCap system.
- All DHCW surveys will be recorded directly into REDCap via the following REDCap forms:

DHCW Participants
Start-of-Study DHCW Survey
Triage Survey Case Report
End-of-Study DHCW Survey
DHCW Participation Questionnaire
Testing Case Report

- Testing results will be captured in the REDCap Testing Case Report in the following ways:

	POC	ELISA
Original Source Document	N/A – Results appear on BD Veritor Screen and directly recorded into REDCap	Excel Spreadsheet posted onto SDM PREDICT box drive
Storage of Original Source Document	Not Applicable	Electronically stored on Rutgers server
Responsibility for Entering into REDCap	Research Clinical Director Or Research Assistant	Research Clinical Director or Research Assistant
Verification of Correct Entry into REDCap	Not Applicable	PI or Chief of Clinical Protocol

All paper based study source documents will be maintained in the Rutgers School of Dental Medicine Clinical Research Center which is located on the D Level of the Dental School Building. All documents will be secured in a locked file cabinet in the center. Access to the Clinical Research Center is limited to research center personnel via a card reader.

Study staff will maintain appropriate medical and research records for this study, in compliance with ICH E6, Section 4.9 and regulatory and institutional requirements for the protection of confidentiality of participants. Study staff will permit authorized representatives of NIDCR and regulatory agencies to examine (and when required by applicable law, to copy) research records for the purposes of quality assurance reviews, audits, and evaluation of the study safety, progress, and data validity.

13 QUALITY CONTROL AND QUALITY ASSURANCE

Quality Management (QM) measures will occur throughout this study to ensure adherence to protocol and collection of high quality data. QM activities include those measures done as part of daily standard operating procedures by staff at each site and by the data management controls built into the PREDICT REDCap to ensure adherence to the protocol and collection of complete and accurate data. QM activities will include activities undertaken at defined intervals to check that QM activities are taking place and study-related documents are up-to-date.

Staff Training

Training of all staff will be conducted and recorded in training logs. Each staff member has been identified by role. Records of completed training will be maintained in each study member's study personnel file kept on the SDM PREDICT box drive, Personnel Qualifications folder.

Training Modules	Who Will be Trained
Human Subjects, HIPAA	• All Study Personnel
General Clinical Research Training (Human Subjects, HIPAA)	• PI, Chief of Clinical Protocol
General Overall (Study Purpose, Goals and Protocol)	• All Study Personnel
REDCap System Training	• Research Clinical Directors and Research Assistants

Daily Operating Procedures

Quality management measures have been built into Clinical Protocol Core and site procedures.

Subject Completion Review

As this is a feasibility study, reviews of surveys and case reports to ensure completeness will not be completed, rather the number/percentage of incomplete survey's and forms will be analyzed as an outcome measure. Consent forms will be reviewed for completeness at the mid-study visit for DHCW subjects and as part of the end-of-visit survey for patient subjects.

Data Management Controls

REDCap is a rich system which enables privileging, required data element entry and required data validation to be embedded into daily operations.

- **Privileging:** Every study staff member will be assigned a role which carries specific read/write/edit/delete privileges. Staff member will be assigned a role providing minimal rights sufficient to perform his/her responsibilities.
- **Structured Data:** Whenever possible, data will be collected via structured data responses rather than free-text. Structured data requires a respondent to check a valid response.
- **Data Validation:** Data fields will be established limiting responses to those that are reasonable. For example, year of birth would have a range of 2002 (corresponding to age 18 – the youngest eligible) to 1920 (corresponding to age 100 – more than sufficient to cover the age range of individuals having impacted 3rd molars extracted.)
- **Required Fields:** Whenever appropriate, fields have been made required so as to ensure completed forms and questionnaires.

Structured responses are required for the CRFs so only valid responses can be recorded. In addition, REDCap has been programmed with all responses being required at time of completion. Validation rules are employed where possible.

14 ETHICS/PROTECTION OF HUMAN SUBJECTS

14.1 Ethical Standard

The investigator will ensure that this study is conducted in full conformity with the principles set forth in The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research, as drafted by the US National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (April 18, 1979) and codified in 45 CFR Part 46 and/or the ICH E6.

14.2 Institutional Review Board

The protocol, informed consent form(s), recruitment materials, and all participant materials will be submitted to the IRB for review and approval. Approval of both the protocol and the consent form(s) must be obtained before any participant is enrolled. Any amendment to the protocol will require review and approval by the IRB before the changes are implemented in the study.

14.3 Informed Consent Process

Informed consent is a process that is initiated prior to the individual agreeing to participate in the study and continues throughout study participation. Extensive discussion of risks and possible benefits of study participation will be provided to participants and their families, if applicable. A consent form describing in detail the study procedures and risks will be given to the participant. Consent forms will be IRB-approved, and the participant is required to read and review the document or have the document read to him or her. The investigator or designee will explain the research study to the participant and answer any questions that may arise.

All DHCWs participants will review and sign the informed consent document prior to any study-related assessments or procedures. Prior to any other research activity, written consent will be obtained upon arrival at the clinic prior to any other study-related assessments or procedures.

Participants will be given the opportunity to think about participating prior to agreeing to participate. They may withdraw consent at any time throughout the course of the study. A copy of the signed informed consent document will be given to participants for their records. The rights and welfare of the participants will be protected by emphasizing to them that the quality of their clinical care will not be adversely affected if they decline to participate in this study.

The consent process will be documented in the REDCap research record.

14.4 Exclusion of Women, Minorities, and Children (Special Populations)

Women and minorities will be eligible to participate. Children less than 18 years will not be able participate.

14.5 Subject Confidentiality

Subject confidentiality is strictly held in trust by the investigators, study staff, and the study sponsor(s) and their agents. This confidentiality is extended to cover testing of biological samples and genetic tests in addition to any study information relating to participants.

The study protocol, documentation, data, and all other information generated will be held in strict confidence. No information concerning the study or the data will be released to any unauthorized third party without prior written approval of the study sponsor.

The study monitor or other authorized representatives of NIDCR may inspect all study documents and records required to be maintained by the investigator, including but not limited to, medical records (office, clinic, or hospital) for the study participants. The clinical study site will permit access to such records.

Certificate of Confidentiality

To further protect the privacy of study participants, the Secretary, Health and Human Services (HHS), has issued a Certificate of Confidentiality (CoC) to all researchers engaged in biomedical, behavioral, clinical, or other human subjects research funded wholly or in part by the federal government. Recipients of NIH funding for human subjects research are required to protect identifiable research information from forced disclosure per the terms of the NIH Policy (https://humansubjects.nih.gov/coc/index - Certificates of Confidentiality (CoC) – Human Subjects). As set forth in 45 CFR Part 75.303(a) and NIHGPS Chapter 8.3, recipients conducting NIH-supported research covered by this Policy are required to establish and maintain effective internal controls (e.g., policies and procedures) that provide reasonable assurance that the award is managed in compliance with Federal statutes, regulations, and the terms and conditions of award. It is the NIH policy that investigators and others who have access to research records will not disclose identifying information except when the participant consents or in certain instances when federal, state, or local law or regulation requires disclosure. NIH expects investigators to inform research participants of the protections and the limits to protections provided by a Certificate issued by this Policy.

NIH Data Sharing Policies

As described in section 17, it is NIH policy that the results and accomplishments of the activities that it funds should be made available to the public (see https://grants.nih.gov/policy/shring.htm - NIH Sharing Policies and Related Guidance on NIH-Funded Research Resources). PIs and funding recipient institutions will ensure that all mechanisms used to share data include proper plans and safeguards to protect the rights and privacy of individuals who participate in NIH-sponsored research.

14.6 Future Use of Stored Specimens and Other Identifiable Data

No residual specimens will be maintained after this project is completed. All Identifiable data will be destroyed 6 years after the study is completed.

15 DATA HANDLING AND RECORD KEEPING

The Research Clinical Director and Research Assistant is responsible for ensuring the accuracy, completeness, legibility, and timeliness of the data reported. All source documents should be completed in a neat, legible manner to ensure accurate interpretation of data. The investigators will maintain adequate case histories of study participants, including accurate case report forms (CRFs), and source documentation.

15.1 Data Management Responsibilities

Data collection and accurate documentation are the responsibility of Research Clinical Director and Research Assistant.

15.2 Data Capture Methods

Other than the Testing Case Report, all data for the study be electronically captured. Various devices will be used including:

- Laptop and desktop computers to complete surveys and forms directly into REDCap, the electronic data capture system for the study
- iPads to complete surveys, forms and capture electronic signatures directly into REDCap
- Bar code scanner to label study specimens

All study data will be centrally stored on the Rutgers REDCap data management system, and study-related documentation will be maintained on RSDM PREDICT Box drive. REDCap is a secure web application which is password protected and compliant with 21 CFR Part 11. Study data and documentation will be available to the study PI and core personnel in real time, per allowable permissions.

15.3 Types of Data

Types of data to be collected include DHCW and patient perceptions and attitudes, medical history, COVID-19 like symptoms, temperature, pulse oximeter readings and COVID-19 test results.

15.4 Schedule and Content of Reports

The following reports/dashboards will be developed:

Report/ Dashboard	Frequency	Purpose	Content	Reviewed by
Unanticipated Problem (including Serious Adverse events and protocol deviations) Report	End of Study	To review unanticipated problems and provide an opportunity to refine protocol	• Listing of unanticipated problem reports • Frequency of types of UP's	• PI • Chief of Clinical Protocol • Study Co-Investigators • Research Assistant

There will be no interim analysis performed. Data analysis is detailed in Section 12.4.

15.5 Study Records Retention

Per Rutgers Research Regulatory Affairs, research that involves collection of protected health information (PHI) is subject to the HIPAA regulations. Research records including signed consent forms that contain

the HIPAA authorization must be retained for 6 years after the date on which the subject signed the consent form or the date when it last was in effect, whichever is later.

15.6 Protocol Deviations

A protocol deviation is any change, divergence, or departure from the study design or procedures of a research protocol that is under the investigator's control and that has not been approved by the IRB. Upon discovery, the Principal Investigator is responsible for reporting protocol deviations to the IRB.

A protocol violation is a deviation from the IRB approved protocol that may affect the subject's rights, safety, or well-being and/or the completeness, accuracy and reliability of the study data. Protocol Violations must be submitted for Full Board IRB review. If the deviation meets any of the following criteria, it is considered a protocol violation.

Protocol deviations and protocol violations can be broken down into the following two categories: Minor deviation or violation OR Major deviation or violation.

- Minor Deviations and/or Minor Violations: A minor deviation or minor violation is viewed by the IRB as an event that does not impact subject safety, compromise the integrity of study data and/or affect a subject's willingness to participate in the study. Minor deviations or violations will be reviewed under expedited procedures by a single reviewer. The reviewer will determine whether the event is accepted as a minor deviation/violation and can recommend a corrective course of action. The deviation will be sent to the fully convened IRB meeting where the board will discuss and determine if any additional actions are required, where applicable and as necessary. If the event meets any of the following criteria, it is considered a minor deviation or minor violation: Examples (Minor)
- Major Deviations and/or Major Violations: A major deviation or violation is viewed by the IRB as an event that may impact subject safety, affect the integrity of study data and/or affect a subject's willingness to participate in the study. Major protocol deviations/violations are treated as noncompliance. These reports will be reviewed at the fully convened IRB meeting where the board will discuss the major deviations and/or major violations and determine of the appropriate course of action. If the event meets any of the following criteria, it is considered a major deviation or major violation: Examples (Major)

All deviations and violations from the protocol will be recorded on the Protocol Deviation/Violation Reporting Form no later than 5 business days after study staff become aware of the deviation and forwarded to the study PI for review and reported promptly to the IRB. All protocol deviations and violations will be reviewed monthly during the PREDICT Steering Committee Meeting.

16 PUBLICATION/DATA SHARING

This study will comply with all applicable NIH Data Sharing Policies. See *https://grants.nih.gov/policy/sharing.htm* for policies and resources.

Dissemination at Scientific Meetings: Presentations at scientific meetings will be delivered to assist in dissemination of results as soon as possible when final results pertaining to the primary variables are available. Meetings at which presentations will be made include, but will not be limited to, American and International Association of Dental Research (AADR and IADR), the American Dental Association (ADA), and International Association for the Study of Pain (IASP) and addiction meetings. NIH grant support will be acknowledged during all presentations.

Publication and Authorship Policies:
Findings will be published in peer-reviewed journals. Journals selected will be indexed in PubMed. Accepted manuscripts will be submitted to PubMed Central as per NIH policy. Examples of journals in which final results may be published include the Journal of Dental Research and the Journal of the American Dental Association. Other medical journals, including journals on pain and addiction will be considered for manuscript publications. Final versions of the peer reviewed manuscripts will be made available to the public, generally within 3 months but no later than 12 months after the official date of publication. NIH grant support will be acknowledged in all publications.

Proposals from study investigators for writing and submitting abstracts and manuscripts for publication will be presented to a committee for approval, comprised of the study PI, chief clinical officer, and chief pharmacology officer Included in the proposal is data needed for the publication, analyses to be performed, proposed authorship and order of authorship, and/or journal in which the manuscript will be published. If a submission for an approved proposal is not completed within 11 months of approval, other authors can submit a similar proposal to the committee for approval.

The following ICMJE guidelines will be adopted and followed in determining authorship:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- Drafting the work or revising it critically for important intellectual content; AND
- Final approval of the version to be published; AND
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

NIH Public Access Policy
The NIH *Public Access Policy* requires scientists to submit final peer-reviewed journal manuscripts that arise from NIH funds to *PubMed Central* immediately upon acceptance for publication. This ensures that the public has access to the published results of NIH funded research.

The PI will share the individual non-identified subject data no later than acceptance for the publication's main findings from the final data analysis or 18 months after completion of the study, whichever is earlier. As NIDCR does not have a data repository at the initiation of this feasibility study, data will be provided to the PBRN resource center who will have the responsibility for posting the data. All study data will be collected in REDCAP with the REDCap project along with all non-identified data collected. The PBRN resource center will convert the data into both SAS and ASCII formats for posting. Data to be posted will include the study protocol and the data set in both SAS and ASCII formats, and data dictionary.

Upon written request to the PI, survey instruments or other materials developed for use during the clinical trial will be made electronically available to other researchers.

17 LITERATURE REFERENCES

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SUPPLEMENTAL MATERIALS

None

APPENDICES

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APPENDIX A: SCHEDULE OF EVENTS

Dental Health Care Workers

Procedures	Prior to Enrollment Day -28 (+/- 29 days)	Start-of-Study (Baseline) Day 0	Mid-Study Day 14 (+/- 7 days)	End-of-Study Day 28 (+/- 7 days)
Obtain Written Consent	X			
Start-of-Study Survey		X		
Triage Survey		X	X	X
End-of-Study Survey				X
DHCW Participation Questionnaire				X
POC Antigen Test		X	X	X
ELISA Antibody Test		X		X