The MUHA Board of Trustees convened April 2, 2020, with the following board members present via web conference: Charles Schulze, Chair; Dr. James Lemon, Vice-Chair; Terri Barnes; Jim Battle; Bill Bingham; Dr. Melvin Brown; Dr. Fritz Butehorn; Dr. Guy Castles; Dr. Richard Christian; Dr. Paul Davis; Dr. Don Johnson; Barbara Johnson-Williams; Dr. Murrell Smith; Michael Stavrinakis; Tom Stephenson and Dr. Bart Witherspoon. MUSC administrative officials attending either in person or via web conference: Dr. David Cole; Dr. Patrick Cawley; Annette Drachman; Lisa Montgomery; Dr. Ray DuBois; Dr. Lisa Saladin; and Mark Sweatman.

REGULAR AGENDA

Item 1. Call to Order.

There being a quorum present, Chairman Schulze called the meeting to order.

Chairman Schulze requested a moment of silence in memory of Dr. Stanley C. Baker, Jr., who passed away March 30, 2020. Dr. Baker served on the MUSC Board of Trustees for over thirty-years.

In addition, Mr. Schulze made a few remarks regarding CO-VID 19. He recalled when was notified by Dr. Cole of the first SC cases being announced by DHEC and since then has witnessed the remarkable work of MUSC’s leaders, clinicians and staff. The Board’s duty during this time is to provide support to the fullest so MUSC can continue to administer patient care. He also stated that the enterprise needs to keep financially viable and this is not going to be easy and can’t be done without making some tough immediate decisions. He thanked the board members for the countless hours they give to provide leadership to this institution.

Item 2. Roll Call for the MUHA and MUSC Board of Trustees.

Jane Scutt called the roll and announced, “In compliance with FOIA, notice of meetings and agendas were furnished to all news media and persons requesting notification.”

Item 3. Date of Next Meeting.

The date of the next regular meeting is scheduled for Friday, May 15, 2020.


Chairman Schulze called for a motion to the approve the minutes.

Board Action: A motion to approve was made by Dr. Lemon, the motion was seconded, voted on and unanimously carried.

RECOMMENDATIONS AND INFORMATIONAL REPORTS OF THE PRESIDENT

Item 5. General Informational Report of the President.

Presentations related to CO-VID 19 were giving by Dr. David Cole, MUSC President, and Dr. Cassie Salgado, Director, Division of Infection Diseases and Medical Director, Infection
Prevention and Hospital Epidemiology. Due to the considerable amount of data and information included in these reports, they are attached for reference and inclusion in the minutes record.

Dr. David Cole
- Tracking and Communication: MUSC experts and senior leadership begin tracking and working with local, state and federal government to understand the potential threat.
- Prevention: Business continuity planning including telework options are discussed. Early clinical preparations begin. Broader communications begin.
- Preparation and Response: Plan and launch of virtual screening, testing, telework, e-learning, clinical rotation and graduation adjustments. This includes transitioning clinics to telehealth, triaging ORs, supply chain management, and workforce plans.
- Action and Next Steps: Maximize impact with partners, maintain economic viability; protect workforce wellness; manage system needs and capacity to prepare for surge. Strengthen supplies and manage finances. Continue work with state, federal and community leadership.

Dr. Cassie Salgado
- Background on the CO-VID 19 Pandemic including information on its source and spread leading up to when all the conditions of a global pandemic were met.
- Current case counts: Globally, within the United State and South Carolina using CO-VID 19 map for Johns Hopkins Coronavirus Resource Center were presented.
- Spread, transmission, and mitigating risk: How the coronavirus spreads; key transmission questions; how the virus interacts with air and surfaces; how the virus was initially detected; and preliminary conclusions and mitigation.
- Disease symptoms, testing, and outcomes: Illness and severity of the virus; different types of test for detecting the virus and how infectious is the virus.
- Modeling of Pandemic: Preparing for “what might happen” and how MUSC will respond.

Board Action: Report received as information.

**Item 6. Other Business.** None.

**AUTHORITY OPERATIONS, QUALITY & FINANCE COMMITTEE. CHAIR: DR. MURRELL SMITH, SR.**

**Item 7. Appointment of CEO, MUSC Health-Charleston Division.**

Approval was requested for the appointment of Dr. David Zaas as CEO, MUSC Health-Charleston Division, and an amendment to the MUHA Board of Trustees Bylaws to reflect this title change.

Board Action: A roll call vote was taken and by unanimous vote, the appointment of Dr. David Zaas and the amendment to the MUHA Board of Trustees Bylaws were approved.

**Item 8. Item removed.**

**Item 9. MUHA Financial Report.**

Lisa Goodlett, CFO, MUSC Health, reported on financial performance through February 2020 for MUHA consolidated and each of three markets. MUHA consolidated operating margin reflects a miss from budget of $5.9M driven largely by the unexpected pension hit funding; low volumes and under expectations. She reported a $5M opportunity in Charleston with its specialty pharmacy revenue driven by IT, pharmacy and medical supplies. Florence market came very
close to getting back on budget with a $500K miss. Seeing strong revenue in the Florence market and some opportunity for some expense management. Lancaster continues to be below performance due to low volumes. They are heavily engaged in strengthening physician recruitment opportunities as well as operating expense mitigation opportunities.

**Board Action:** Report received as information.

**Item 10.** Item removed.

**Item 11.** Legislative Update.

Mark Sweatman reported that they have in constant communication with the Governor’s office and legislative leadership. The General Assembly will come back 4/8 to consider a “Sine Die” resolution allowing state government to continue operating. If adopted, MUSC’s last year $84M base budget would be adopted for this fiscal year. Allan Stalvey, EVP, SCHA, reported that SCHA has activated an incident command with teams in place. Advocacy team is communicating with the general assembly and federal delegation. Communications team is getting daily updates to hospitals. Clinical team developed a clinical resource guide with input from physicians and clinicians from SC hospitals. Workforce team’s initial focus was childcare and agreements were made with YMCA’s and Boys and Girls Club; now focusing on potential staff shortages due to laid-off clinical staff who leave to work in hotspot areas. Committee also in place to focus on surge and surge capacity. Christian Soura is leading the finance/reimbursement team that is working with the federal delegation. Mr. Stalvey gave a brief update on the CARES Act, the $2T stimulus package that includes $100B going to health care providers. There is potential for relief for some small hospitals in the passed bill and SCHA is working with delegation to try and get government hospitals included in the fourth version.

**Board Action:** Received as information.

**Item 12.** Other Committee Business. None.

**MUHA AND MUSC PHYSICAL FACILITIES COMMITTEE. CHAIR: MR. BILL BINGHAM**

**Item 13.** MUHA Facilities Procurements/Contracts Proposed.

Greg Weigle requested approval of the following MUHA facilities procurements/contracts:

- Lease renewal of 8,981 SF of clinical space at 4480 Leeds Place West, North Charleston for MUSC Speech Pathology, Sleep Center, Pediatric OT/PT. Total cost will be $280,350.90.
- Lease renewal of 8,097 SF of office space at 162 Ashley Avenue, Charleston for space for Hospital Transplant Administration for one additional year. Total cost will be $246,229.77.
- Lease renewal of 9,940 SF of office space at 261 Calhoun Street, Charleston, for space for Hospital Finance, Supply Chain and others to accommodate on-campus moves related to renovation projects for one additional year. Total lease cost will be $89,810.00.

**Board Action:** Mr. Bingham made a motion to approve, the motion was seconded, voted on and unanimously carried.

**Item 14.** MUSC Facilities Procurement/Contract Proposed.

Greg Weigle requested approval of the following MUSC facilities procurements/contracts:
• Renovation of approximately 2500 SF of space previously occupied by the MUSC Bookstore into additional classroom space for the College of Health Professions to convert space to include 5 exam rooms, a Wet Lab/Classroom, a Procedure Simulation room, and storage room. Total cost of project will be $625,000.

Board Action: Mr. Bingham made a motion to approve, the motion was seconded, voted on and unanimously carried.

Item 15. Other Committee Business.

None.

MUHA AND MUSC AUDIT COMMITTEE. CHAIR: MR. THOMAS L. STEPHENSON

Item 16. Other Committee Business. None.

OTHER BUSINESS FOR THE BOARD OF TRUSTEES

Item 17. Approval of Consent Agenda.

Approval of the consent agenda was requested.

Board Action: Mr. Schulze called for motion to approve the consent agenda in its entirety. The motion was made by Dr. Lemon, voted on and unanimously carried.

Item 18. Executive Session.

Mr. Michael Stavrinakis made a motion for the Board of Trustees to move into closed session to discuss the following items pursuant to sections 30-4-70(a) of the South Carolina Code:
• Appointment of the CEO for MUSC Health Charleston;
• COVID related mitigation strategies related to personnel and possible renegotiation of contracts; and
• Contracts related to proposed clinical affiliations and expansion of clinical services.

Board Action: The motion made by Mr. Stavrinakis was seconded, voted on and unanimously carried. Chairman Schulze announced that the Board of Trustees will move into closed session following the conclusion of the MUSC Board of Trustees Regular Agenda.

Item 19. New Business for the Board of Trustees. None.

Item 20. Report from the Chairman. None.

CONSENT AGENDA

AUTHORITY OPERATIONS, QUALITY & FINANCE COMMITTEE.


Approval was sought for the appointments, reappointments and delineation of privileges of the Medical and Allied Health Staff.
Board Action: The motion made by Dr. Smith was seconded, voted on and unanimously carried.

Item 22. **Medical Executive Committee Minutes.**

Medical Executive Committee minutes were presented for information.

**Board Action: Received as information.**

Item 23. **Contracts and Agreements.**

Contracts and agreements signed since the last board meeting were presented for information.

**Board Action: Received as information.**

**MUHA AND MUSC PHYSICAL FACILITIES COMMITTEE**

Item 24. **MUHA and MUSC FY2020 Active Projects >$250,000.**

MUHA and MUSC active projects exceeding $250,000 were presented for information.

**Board Action: Received as information.**

Item 25. **MUSC Facilities Contracts Awarded.**

Facilities contracts awarded were presented for information.

**Board Action: Received as information.**

**MUHA AND MUSC AUDIT COMMITTEE**

Item 26. **KPMG 2020 External Audit Plan.**

The KPMG FY2020 External Audit Plan was presented for information.

**Board Action: Received as information.**

There being no further business, the meeting of the MUHA Board of Trustees was adjourned.

Respectfully submitted,

[Signature]

Mark C. Sweatman, Secretary
President’s Report
David J. Cole, M.D., FACS
April 2, 2020

Coronavirus Timeline

Dec 31: Influx of pneumonia cases for unknown cause in Wuhan, China

Jan 20: First confirmed case in US
Jan 27: First MUSC Health communication sent
Jan 30: WHO declares global health emergency

Feb 23: Surge in cases in Italy
Feb 29: US records first death; additional travel restrictions

Mar 3: CDC lifts testing restrictions
Mar 7: MUSC virtual screening launched
Mar 13: US National emergency declared
Mar 16: MUSC specimen collection site launched

Apr 2:
US cases: 186,101
US deaths: 3,603
SC cases: 1,293
SC deaths: 26

Tracking and Communication
Prevention
Preparation and Response
Action and Next Steps
**Prevention**

Business continuity planning including telework options are discussed. Early clinical preparations begin. Broader communications begin.

**Tracking and Communication**

MUSC experts and senior leadership team begin tracking the disease and working with local, state and federal government to understand potential threat.

**Preparation and Response**

Plan and launch of virtual screening, testing, telework, e-learning, clinical rotation and graduation adjustments. For MUSC Health, this includes transitioning clinics to telehealth, triaging ORs, supply chain management, and workforce plans.

**Action and Next Steps**

Interface with external stakeholders and partners continue. Readiness increases for potential influx of patients. Next steps and priorities are being evaluated.

**MUSC Action**

**Deep Dive Prevention**

Implemented “Divert and Funnel” strategy to provide testing and keep potential COVID-19 patients out of Emergency Departments and Ambulatory Clinics:

- **Divert**: Virtual screening on musc.care launched 3/7
- **Funnel**: Drive-thru Specimen Collection Site launched 3/10
  - MUSC was first-in-nation to combine virtual screening and drive-thru specimen collection
- **Test**: FDA waiver enabled MUSC-based COVID-19 testing capability on 3/14

Initiated MUSC Health Operational Threat Assessments: Capacity, Staffing, Supplies.

Initiated ongoing interface with DHEC, Governor’s Office, federal, state and local leadership.
Deep Dive Preparation and Response

**February**

- Preparation and Response
  - Plan and launch of virtual screening, testing, telework, e-learning, clinical rotation and graduation adjustments. For MUSC Health, this includes transitioning clinics to telehealth, triaging ORs, supply chain management, and workforce plans.

**March**

- Telework deployed where possible
- E-learning deployed across all six colleges
- Clinical rotations adjusted/cancelled
- May graduation cancelled
- Transition of clinics to telehealth wherever possible
- Workforce and bed capacity planning

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Deep Dive Preparation and Response

**February**

- Added drive-thru specimen collection sites in Florence and Lancaster
- Internal test developed and testing capacity ramped up
- Launched process to accept in-kind donations of supplies and food for frontline health care professionals
- Launched MUSC COVID-19 emergency relief fund and received anonymous $500k gift
- Epidemiologic data monitoring and initial analysis team deployed
- Collaborated with external stakeholders on planning and communication
- Launched #FlattenTheCurveSC public awareness campaign

**March**

- Preparation and Response
  - Plan and launch of virtual screening, testing, telework, e-learning, clinical rotation and graduation adjustments. For MUSC Health, this includes transitioning clinics to telehealth, triaging ORs, supply chain management, and workforce plans.
Current Status Screening and Testing

Virtual screening (musc.care):
› 23,000 patients total
› 18,000 patients screened for COVID-19 testing
› Average 1,000+ patients per day

Specimen collection sites – average volume per day:
› West Ashley: 450 per day
› Florence: 100 per day
› Lancaster: 45 per day

Current Status Screening and Testing

Where are we now?
› Prioritization: high-risk patients, health care workers, first responders
› Developing serologic point-of-care capability in partnership between MUSC and Clemson

Next Steps
› Community prevalence
› Enhanced testing and tracking
**Current Status Transition to Telehealth**

- West Ashley and North Charleston office clinics are closed.
- Primary care has consolidated to 7 sites.
- Currently still seeing patients at MUSC Health East Cooper, R. Keith Summey Pediatric Medical Pavilion, Regional Pediatric Urgent Care/Primary Care/OBGYN practices, and on-campus locations.
- Anticipate 80% of ambulatory clinics will transition to Telehealth platform
- CMS Telehealth payor parity advocated for and waiver occurred.

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**Current Status Research**

**Clinical Trials**
- Outreach to NIH, academia, industry
- 13 trials under consideration at present
- HERO trial – prophylaxis for health care workers begin 4/22

**Laboratory Testing**
- COVID-19 biobank
- Rapid SARS-CoV-2 IgG Antibody Testing – protocol under development

**Data Development**
- Registry for patients and health care workers in progress
- Remote home monitoring system deployed
**Current Status Capacity**

- Surgical procedures triaged level of urgency based on local/national/state requirements.
- Scaling back on surgical procedures helps with capacity and supply chain management. Surgical volumes are down 70-80% over the past week.
- Developed a tiered ramp-up plan for capacity with the goal to increase our 820 bed capacity by an additional 150 beds.
- Working with National Guard and Army Corps of Engineers under State direction to assess and develop an extraordinary surge capacity plan that could allow for up to 270 more beds.
- Training and redeployment of clinic staff as appropriate. Looking daily at staffing needs and staff wellness opportunities.
- Working with HR on option for flexibility and mitigation of potential for limited hours for some staff.

**Current Status Supply Chain Management**

Daily ground-level calls being held with various relevant leaders and teams.

Operational threat assessment conducted daily to allow for cross-walking for “like” supplies when levels are low.
  - Sharing among divisions or the triggering of operational decisions

More than 300 individuals, companies and organizations have offered to donate supplies, including personal protective equipment, food for care team members, and items to meet other needs.

**Next Steps:**
- Measure the supply chain burn rate and make forecasted and real-time operational decisions that proactively keep out patients and care team members safe.
Current Status Collaboration

External Stakeholders Engaged to Date:
- SCDHEC
- Governor’s office
- Legislative leadership - State and Federal
- Local leaders
- School districts
- National Guard
- Army Corps of Engineers
- Community
- Donors and Alumni
- Suppliers
- Private sector partners
- Colleges and universities (Clemson, UofSC)
- Other health systems (SCHA, affiliates, Prisma)

Prioritizing high impact topics across all domains: make it happen on the ground

Current Status Clinical Data (4/2)

MUSC Health Census (Charleston, Lancaster, Florence)

<table>
<thead>
<tr>
<th>Confirmed COVID-19 Cases</th>
<th>Suspected COVID-19 Patients</th>
<th>Non-COVID-19 Inpatients</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 (5 ICU)</td>
<td>29</td>
<td>820</td>
</tr>
</tbody>
</table>

Testing Lab Results

<table>
<thead>
<tr>
<th>Positive</th>
<th>Total Tests</th>
<th>% of Pos out of Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>262</td>
<td>4,200</td>
<td>6.2%</td>
</tr>
</tbody>
</table>
Modeling Using the Data to Gauge What’s Ahead

<table>
<thead>
<tr>
<th>Tri-County Region</th>
<th>Symptomatic Infections</th>
<th>Hospital Admissions</th>
<th>Critical Care Beds Initiation</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% prevalence</td>
<td>73,045</td>
<td>5,026</td>
<td>1,482</td>
<td>733</td>
</tr>
<tr>
<td>5% prevalence</td>
<td>14,609</td>
<td>1,005</td>
<td>296</td>
<td>147</td>
</tr>
</tbody>
</table>

What’s Next? Upcoming Priorities

Resiliency: maximize our impact with partners, maintain economic viability/vitality, protect our workforce wellness

Preparation: Actively manage our system needs and system capacity (i.e., staffing and bed capacity in preparation for surge). Strengthen supplies. Manage our Finances.

Moving Forward: Continuing work with state, federal and community leadership to help navigate this wave, and the subsequent economic wave which will hit.
- Testing
- Tracking
- Mitigation while returning to normal
- More than $800k committed toward COVID-19 emergency relief efforts
Coronavirus Update

CASSANDRA SALGADO, MD, MS, FIDSA, FSHEA
PROFESSOR OF MEDICINE AND PUBLIC HEALTH
DIRECTOR, DIVISION OF INFECTION DISEASES
MEDICAL DIRECTOR, INFECTION PREVENTION AND HOSPITAL EPIDEMIOLOGY
MEDICAL UNIVERSITY OF SOUTH CAROLINA

Objectives

- The COVID-19 Pandemic
  - Current case counts
  - Spread, transmission, and mitigating risk
  - Disease symptoms, testing, and outcomes
  - Modeling of pandemic - “what might happen”
  - MUSC response
Background

- An outbreak of respiratory disease caused by a novel (new) coronavirus that was first detected in Wuhan City, Hubei Province, China
- The virus has been named “SARS-CoV-2” and the disease it causes has been named “coronavirus disease 2019” (abbreviated “COVID-19”)
- On January 30, 2020, the International Health Regulations Emergency Committee of the World Health Organization declared the outbreak a public health emergency of international concern


Source and Spread

- Coronaviruses are a large family of viruses that are common in many different species of animals, including camels, cattle, cats, and bats. Rarely, animal coronaviruses can infect people and then spread between people
  - SARS-CoV, MERS-CoV, SARS-CoV-2
- Early on, many of the patients in the COVID-19 outbreak in Wuhan, China had a link to a large seafood and live animal market, suggesting animal-to-person spread. Later, a growing number of patients reportedly did not have exposure to animal markets, indicating person-to-person spread
- Finally, sustained person-to-person spread occurred inside China, then, the cycle repeated outside China and eventually in other countries. Over time all conditions of a global pandemic were met

Current understanding about how SARS-CoV-2 spreads is largely based on what is known about similar coronaviruses.

- The virus is thought to spread **mainly from person-to-person**
  - Between people who are in close contact with one another (within about 6 feet)
  - Through respiratory droplets produced when an infected person coughs or sneezes (droplets are inhaled)
- The virus may spread from contact with infected surfaces or objects (touching own mouth, nose, or eyes), but this is not thought to be the main way the virus spreads
- Can someone spread the virus without being very sick?
  - People are thought to be most contagious when they are most symptomatic
  - Some spread might be possible before people show overt symptoms; but this is not thought to be the main way the virus spreads
- How easily does the virus spread?
  - SARS-CoV-2 seems to be spreading easily and sustainably in the community ("community spread") in affected geographic areas

Key Transmission Questions

- How long does SARS-CoV-2 survive on surfaces?
- Can SARS-CoV-2 be transmitted via the airborne route?
- Can asymptomatic people transmit SARS-CoV-2 (when does someone become infectious)?
- How long is someone infectious?

SARS-CoV-2: air and surfaces

- Analyzed the aerosol and surface stability of SARS-CoV-2 and compared to SARS-CoV-1.
- Aerosols of SARS-CoV-2 or SARS-CoV-1 were nebulized into a drum.
  - Inoculum similar to samples obtained from the respiratory tract of virus in humans.
- SARS-CoV-2 aerosols viable for up to 3 hours.
- SARS-CoV-2 more stable on plastic and stainless steel than on copper and cardboard, and viable up to 72 hours.
- Stability of SARS-CoV-2 similar to SARS-CoV-1.
- Differences in the epidemiologic characteristics may arise from other factors.
  - High viral loads in the upper respiratory tract and the potential for persons infected with SARS-CoV-2 to transmit while asymptomatic.

March 17, 2020 DOI: 10.1056/NEJMc2004973
Viral load detected in nasal and throat swabs from 14 COVID-19 patients in Guangdong Province, China

- Lower Ct values correlate with higher levels of virus
- Virus is detectable early and rises appropriately when most symptomatic
- Few have detectable virus past 14 days

Preliminary conclusions and mitigation

- COVID-19 is not likely spread by airborne route in the traditional sense; however, can be spread with aerosol generating procedures
- Surface contamination related to aerosols and droplets are widespread in patient rooms
- Prolonged RNA shedding detectable by PCR after recovery is likely uncommon
- Risk to HCWs most likely from:
  - fomite contamination
  - errors in doffing
  - inoculation of mucus membranes (eye protection)
  - inhalation of infectious virions during AGP and during prolonged times in the patient room
Illness and Severity

- The complete clinical picture with regard to COVID-19 is not fully understood.
- **Median Incubation period remains short** (3 to 5 days) but symptoms may appear 2 to 14 days after exposure.
- Illness has ranged from mild (80%) to severe, including illness resulting in death.
  - Mortality rate for COVID-19 has been <1% to 11.0%, with higher risks among the elderly and those with chronic medical conditions. US mortality rate has been ~2.0%. SC mortality rate has been ~2%.
  - MERS-CoV mortality 30%, SARS-CoV mortality 10%, Influenza mortality <1%


Testing for COVID-19

- **CDC based Real-Time Reverse Transcriptase (RT)-PCR Diagnostic Panel**
  - This test is intended for use with upper and lower respiratory specimens.
  - Traditional RT-PCR methodology.
  - Takes 8 hours to do the test.
- Cepheid rapid molecular test, utilizing their GeneXpert platform for SARS-CoV-2
  - This test is intended for use with upper and lower respiratory specimens.
  - Targets multiple regions of the viral genome.
  - Detection time of approximately 45 minutes.
- Serology test in development that will look for the presence of antibodies.
  - Identify immune individuals.
  - Identify potential therapeutic targets.
How Infectious is Coronavirus?

- R₀ describes the **average number of new infections that an infectious person can generate** in a population that was not previously exposed to the virus.
  - R₀ estimates, however, can vary depending on numerous biologic, social behavioral, and environmental factors, and must be interpreted with caution.
  - WHO estimates the global R₀ associated with **Coronavirus at 1.4 to 2.5**
    - Early pandemic R₀ 2.5, with mild social distancing R₀ 2.0, with moderate social distancing R₀ 1.0
  - WHO estimates the annual epidemic R₀ for **Influenza is 1.3**
  - WHO estimates MERS-CoV R₀ ranges from 0.45 (Saudi Arabia) to 8.1 (South Korea)
  - WHO estimates SARS-Co-V R₀ ranged from 2.0 to 4.0

Questions