



**The Corona Virus Tidal
Wave Is Here**

COVID-19: UPDATE

Wolf D. Kutter and Jim Petros
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COVID-19 FACTS Update

- **Current US COVID Status: 165,392 Cases in 50 States, Seven hotspots, 3,000 Deaths as of, 11AM 31 March; (Globally 806,080; Deaths 39,577; Recovered 172,436; Source worldometers.info)**
- Ratio of Identified versus actual COVID-19 cases: 1 to 6-10.
- COVID 19 Incubation Period (Includes Silent Spread 2-21 days)
- COVID 19 Spread from Person to Person Factor: Ratio is 1-3.5
- Severity of Disease Statistics: 81% Mild; 13.8% Severe; 4.7% Critical. (data from China)
- Hospitalization Planning Rate 20%, ICU 5%, Respirators 3-5%; **Actual US Death-rate 1.51%:**
- Death Rate Statistics by Age Group: **80+ years old 14.8% 70-79 years old 8.0% 60-69 years old 3.6% 50-59 years old 1.3%** (based on Chinese data)
- Key Mitigation Approaches from Singapore, Hong Kong, Taiwan: Testing, quarantine, social distancing, **personal sanitation and surface scrubbing**
- **South Carolina Status: 925 Cases in 41 Counties, 18 deaths (per DHEC, as of AM 31 MARCH)**

Persistence of Coronavirus on Surfaces

Persistence of Coronaviruses on Surfaces



Source: *J. Hosp. Infect.* DOI: <https://doi.org/10.1016/j.jhin.2020.01.022>

Note: Coronavirus activity may be impacted by temperatures higher than 86°F (30°C). Authors also confirm that coronavirus may be effectively killed away by household disinfectant. COVID-19 virus NOT included in this study.

Medscape



Cleaning products that kill COVID-19, if used properly

- Disinfect high-touch areas such as faucet handles, doorknobs, stair rails and countertops.
- Best practice is to disinfect these surfaces several times a day.
 - Soap and water works. The soap removes the viral particles that have attached themselves to surfaces — whether it's your hands, face or countertops — and suspends them in the water, so they can be washed away
 - Bleach is very effective at killing the coronavirus, as well as virtually every other germ on the face of the planet. The CDC formula for making a diluted bleach solution: Use 5 tablespoons (1/3 cup) of bleach in one gallon of water or 4 teaspoons of bleach in one quart of water.
 - Hydrogen peroxide is not as strong as bleach, use it straight. Hydrogen peroxide decomposes into water and oxygen.
 - Rubbing alcohol products that are at least 70 percent alcohol will kill the coronavirus with less potential for damage than bleach.
 - Distilled white vinegar or vodka - no evidence that they are effective against coronavirus."

Source: <https://www.nbcnews.com/better/lifestyle/many-common-household-cleaning-products-can-kill-coronavirus-if-you-ncna1160271>

COVID-19 Drug Trials and Research - Overview

- **Remdesivir:** Remdesivir is an experimental broad-spectrum antiviral drug originally designed to target Ebola. Researchers have found that remdesivir is highly effective at fighting the novel coronavirus in isolated cells.
- Two clinical trials for this drug have been implemented in China. One clinical trial was recently also approved by the FDA in the United States.
- **Hydroxychloroquine and azithromycin** In a small study commissioned by the French government, 20 patients with COVID-19 were treated with a combination of the anti-malaria drug hydroxychloroquine and the macrolide antibacterial drug azithromycin (Zithromax).
- Results showed that all patients taking the combination were virologically cured within 6 days of treatment. Note: a 1100 Person Clinical Trial ongoing in New York since last week

FEEDBACK from Butch Barfield, City of N Charleston Emergency Management Coordinator.

**Tri-county-City Focus on seven critical FEMA “Steps”/Lines Of Effort
(Containment to mitigation)**

- **1. Mitigation Guiding principles; (Primary-Ongoing)**
- **2. Integrate Public Health into OUR Planning/Operations. (Primary-This Week)**
- **3. Track Hospital Bed Capacity Data: NC:GIS. (DHEC/Healthcare Ad-min.)**
- **4. Actively Prepare for Alternate Care Sites. (DHEC/Healthcare Ad-min.)**
- **5. Maintain Situational Awareness of Ventilators (DHEC/Healthcare Ad-min.)**
- **6. Identify all Sources to Surge Medical Professional. (DHEC/Healthcare Ad-min.)**
- **7. Manage Personal Protective Equipment (PPE). (Primary-Ongoing)**

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1. Mitigation Guiding principles Considerations; (Primary-Ongoing)

- Each community is unique, and appropriate mitigation strategies will vary based on the level of community transmission, characteristics of the community and their populations, and the local capacity to implement strategies.
- Consider all aspects of a community that might be impacted, including populations most vulnerable to severe illness and those that may be more impacted socially or economically, and select appropriate actions.
- Mitigation strategies can be scaled up or down depending on the evolving local situation.
- When developing mitigation plans, communities should identify ways to ensure the safety and social well-being of groups that may be especially impacted by mitigation strategies, including individuals at increased risk for severe illness.
- Activation of community emergency plans is critical for the implementation of mitigation strategies. These plans may provide additional authorities and coordination needed for interventions to be implemented.
- The level of activities implemented may vary across the settings from minimal/ moderate level for one setting and at a substantial level for another setting in order to meet community response needs.
- Depending on the level of community spread, local and state public health departments may need to implement mitigation strategies for public health functions to identify cases and conduct contact tracing (GIS). For more information: www.cdc.gov/COVID19



Concluding Thought

- We are a community and caring for each other is most important as this crisis continues to develop. Be patient, be calm. We Americans are known for grit, determination, and resilience.

Backup

- Easiest US Government site to get clear COVID-19 Guidance:
<https://www.coronavirus.gov/>
- CDC details on:
 - Remdesivir,
 - Hydroxychloroquine and Chloroquine

COVID-19 Medications (Source <https://www.cdc.gov/coronavirus/2019-ncov/hcp/therapeutic-options.html>)

• Remdesivir

- Remdesivir is an investigational intravenous drug with broad antiviral activity that inhibits viral replication through premature termination of RNA transcription and has in-vitro activity against SARS-CoV-2 and in-vitro and in-vivo activity against related betacoronaviruses [1-3].
- There are currently four options for obtaining remdesivir for treatment of hospitalized patients with COVID-19 and pneumonia in the United States:
- A National Institutes of Health (NIH)-sponsored adaptive double-blinded, placebo-controlled trial of remdesivir versus placebo in COVID-19 patients with pneumonia and hypoxia is enrolling non-pregnant persons aged 18 years and older with oxygen saturation of $\leq 94\%$ on room air or requiring supplemental oxygen or mechanical ventilation (<https://clinicaltrials.gov/ct2/show/NCT04280705>external icon). Exclusion criteria include alanine aminotransaminase or aspartate aminotransaminase levels >5 times the upper limit of normal, stage 4 severe chronic kidney disease or a requirement for dialysis (i.e., estimated glomerular filtration rate (eGFR) <30);
- Two phase 3 randomized open-label trials of remdesivir (5-days versus 10-days versus standard of care) are open to enrollment in persons aged 18 years and older with COVID-19, radiographic evidence of pneumonia and oxygen saturation of $\leq 94\%$ on room air (severe disease <https://clinicaltrials.gov/ct2/show/NCT04292899>external icon) or $>94\%$ on room air (moderate disease <https://clinicaltrials.gov/ct2/show/NCT04292730>external icon). Exclusion criteria include alanine aminotransaminase or aspartate aminotransaminase levels >5 times the upper limit of normal, participation in another clinical trial of an experimental treatment for COVID-19, requirement for mechanical ventilation, or creatinine clearance <50 mL/min; and
- Finally, in areas without clinical trials, COVID-19 patients in the United States and other countries have been treated with remdesivir on an uncontrolled compassionate use basis. The manufacturer is currently transitioning the provision of emergency access to remdesivir from individual compassionate use requests to an expanded access program. The expanded access program for the United States is under rapid development. Further information is available at: <https://rdvcu.gilead.com/>external icon

COVID-19 Medications (Source <https://www.cdc.gov/coronavirus/2019-ncov/hcp/therapeutic-options.html>)

- **Hydroxychloroquine and Chloroquine**

- Hydroxychloroquine and chloroquine are oral prescription drugs that have been used for treatment of malaria and certain inflammatory conditions. Chloroquine has been used for malaria treatment and chemoprophylaxis, and hydroxychloroquine is used for treatment of rheumatoid arthritis, systemic lupus erythematosus and porphyria cutanea tarda. Both drugs have in-vitro activity against SARS-CoV, SARS-CoV-2, and other coronaviruses, with hydroxychloroquine having relatively higher potency against SARS-CoV-2 [1,4,5]. A study in China reported that chloroquine treatment of COVID-19 patients had clinical and virologic benefit versus a comparison group, and chloroquine was added as a recommended antiviral for treatment of COVID-19 in China [6]. Based upon limited in-vitro and anecdotal data, chloroquine or hydroxychloroquine are currently recommended for treatment of hospitalized COVID-19 patients in several countries. Both chloroquine and hydroxychloroquine have known safety profiles with the main concerns being cardiotoxicity (prolonged QT syndrome) with prolonged use in patients with hepatic or renal dysfunction and immunosuppression but have been reportedly well-tolerated in COVID-19 patients.
- Due to higher in-vitro activity against SARS-CoV-2 and its wider availability in the United States compared with chloroquine, hydroxychloroquine has been administered to hospitalized COVID-19 patients on an uncontrolled basis in multiple countries, including in the United States. One small study reported that hydroxychloroquine alone or in combination with azithromycin reduced detection of SARS-CoV-2 RNA in upper respiratory tract specimens compared with a non-randomized control group but did not assess clinical benefit [7]. Hydroxychloroquine and azithromycin are associated with QT prolongation and caution is advised when considering these drugs in patients with chronic medical conditions (e.g. renal failure, hepatic disease) or who are receiving medications that might interact to cause arrhythmias.
- Hydroxychloroquine is currently under investigation in clinical trials for pre-exposure or post-exposure prophylaxis of SARS-CoV-2 infection, and treatment of patients with mild, moderate, and severe COVID-19. In the United States, several clinical trials of hydroxychloroquine for prophylaxis or treatment of SARS-CoV-2 infection are planned or will be enrolling soon. More information on trials can be found at: <https://clinicaltrials.gov/external/icon>.
- There are no currently available data from Randomized Clinical Trials (RCTs) to inform clinical guidance on the use, dosing, or duration of hydroxychloroquine for prophylaxis or treatment of SARS-CoV-2 infection. Although optimal dosing and duration of hydroxychloroquine for treatment of COVID-19 are unknown, some U.S. clinicians have reported anecdotally different hydroxychloroquine dosing such as: 400mg BID on day one, then daily for 5 days; 400 mg BID on day one, then 200mg BID for 4 days; 600 mg BID on day one, then 400mg daily on days 2-5.