

# Broad River Rehab Reflections: CMS Data Review and COVID-19 Impact

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- Agenda:
    - CMS Quality Strategy
    - ResDAC Overview
    - COVID-19 and Clinical Presentation
    - Q1 2020 and Q2 2020 Data Review

# CMS Quality Strategy

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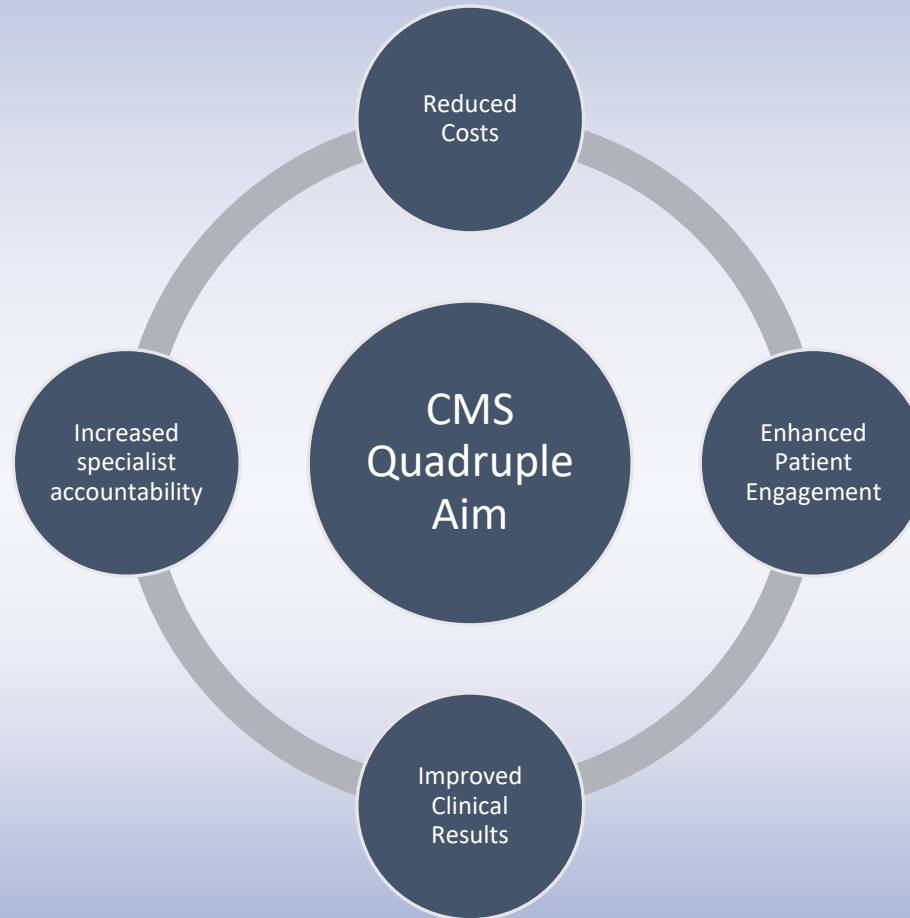
**Better Care:** Improve the overall quality of care by making health care more person-centered, reliable, accessible, and safe.

**Smarter Spending:** Reduce the cost of quality health care for individuals, families, employers, government, and communities.

**Healthier People, Healthier Communities:** Improve the health of Americans by supporting proven interventions to address behavioral, social, and environmental determinants of health, and deliver higher-quality care.

# CMS Quadruple Aim

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The Research Data Assistance Center (ResDAC) provides free assistance to academic and non-profit researchers interested in using Medicare, Medicaid, SCHIP, and Medicare Current Beneficiary Survey (MCBS) data for research. Primary funding for ResDAC comes from a CMS research contract. ResDAC is a consortium of faculty and staff from the University of Minnesota, Boston University, Dartmouth Medical School, and the Morehouse School of Medicine.

ResDAC offers a number of services for researchers with all levels of experience using or planning to use CMS data. Services include technical data assistance, information on available data resources, and training

# COVID-19 Medical Overview (JAMA)

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- **Coronavirus Infections—More Than Just the Common Cold, Journal of the American Medical Association**
- *Human coronaviruses (HCoVs) have long been considered inconsequential pathogens, causing the “common cold” in otherwise healthy people. However, in the 21st century, 2 highly pathogenic HCoVs—severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV)—emerged from animal reservoirs to cause global epidemics with alarming morbidity and mortality. In December 2019, yet another pathogenic HCoV, 2019 novel coronavirus (2019-nCoV), was recognized in Wuhan, China, and has caused serious illness and death.*
- *Common symptoms of SARS included fever, cough, dyspnea, and occasionally watery diarrhea.<sup>2</sup> Of infected patients, **20% to 30% required mechanical ventilation** and 10% died, with higher fatality rates in older patients and those with medical comorbidities.*

# COVID-19: Risk Factors for Severe Disease (CDC)

COVID-19 is a new disease and there is limited information regarding risk factors for severe disease. Based on currently available information and clinical expertise, **older adults** and **people of any age who have serious underlying medical conditions** might be at higher risk for severe illness from COVID-19.

• Based upon available information to date, those at high-risk for severe illness from COVID-19 include:

- People 65 years and older
- **People who live in a nursing home or long-term care facility**
- People of all ages with underlying medical conditions, particularly if not well controlled, including
- **People with chronic lung disease or moderate to severe asthma**
- **People who have serious heart conditions**

- People who are immunocompromised
- People with severe obesity (body mass index [BMI] of 40 or higher)
- People with diabetes
- People with chronic kidney disease undergoing dialysis
- People with liver disease

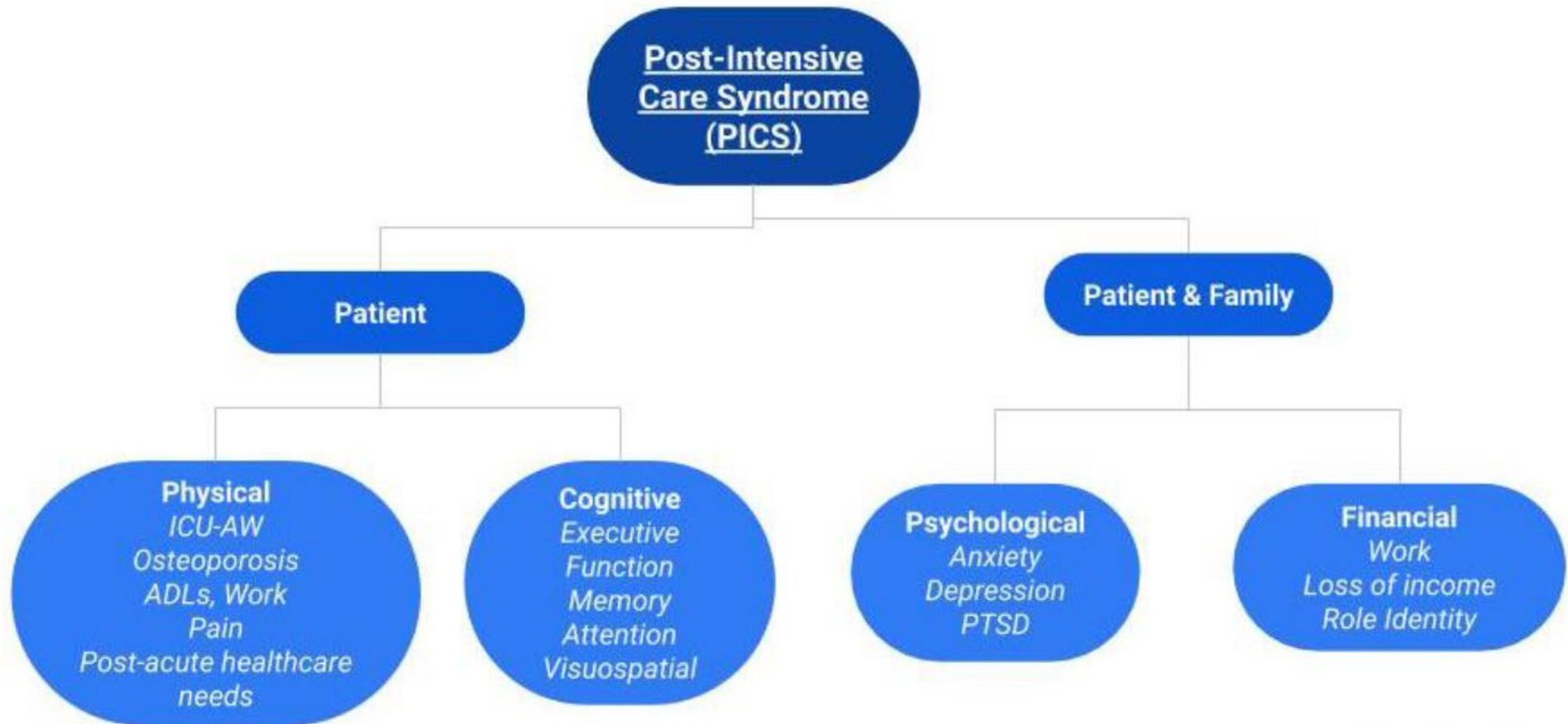
# Post Intensive Care Syndrome (PICS)

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- ***Post-intensive care syndrome*, or PICS, is made up of health problems that remain after critical illness. They are present when the patient is in the ICU and may persist after the patient returns home.**
- These problems can involve the patient's body, thoughts, feelings, or mind and may affect the family.
- PICS may show up as an easily noticed **drawn-out muscle weakness, known as *ICU-acquired weakness***; as problems with thinking and judgment, called ***cognitive (brain) dysfunction***; and as other mental health problems



# PICS: Considerations for SNF



# Cardiac Disease: Congestive Heart Failure

CHF is the inability of the heart to effectively deliver oxygen to the body as a result of impaired cardiac output. Cardiac output = amount of blood the heart pumps per minute.

**Heart failure is the most frequent cardiac diagnosis associated with hospital admission and re-admissions.**

Fatigue

Dyspnea

Orthopnea

Pulmonary edema

Peripheral edema

Fluid retention

From: **The Dilemma of Coronavirus Disease 2019, Aging, and Cardiovascular Disease: Insights From Cardiovascular Aging Science**

JAMA Cardiol. Published online April 03, 2020. doi:10.1001/jamacardio.2020.1329

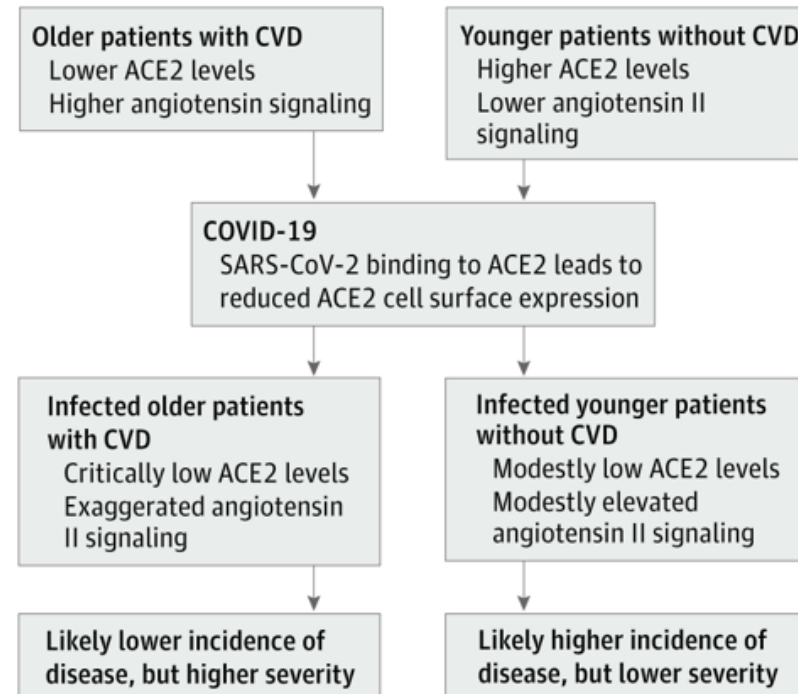
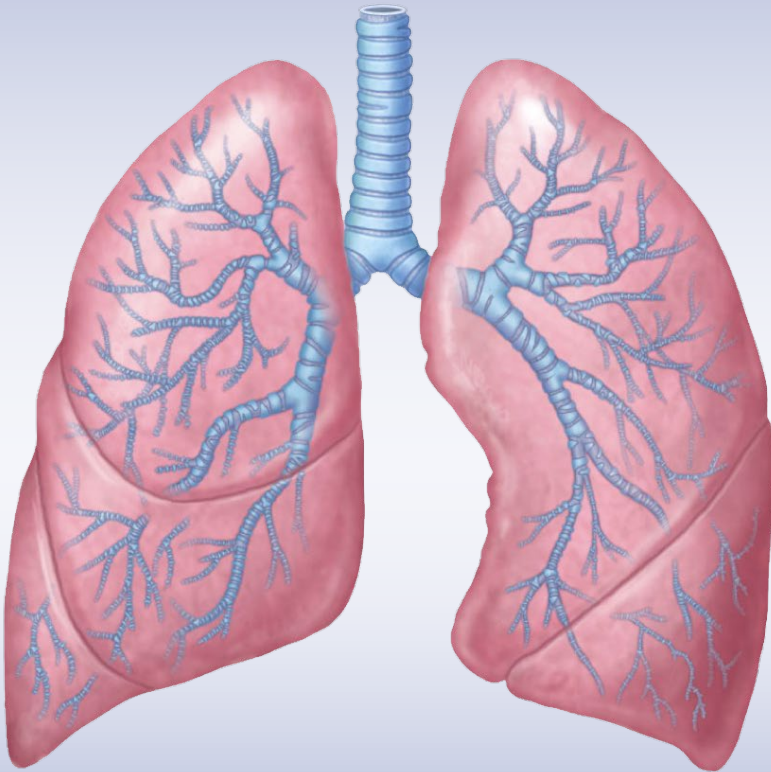


Figure Legend:

Schematic of Inflammatory Profile Before and After Coronavirus Disease 2019 (COVID-19) Infection. Simplified schematic of the preinfection inflammatory profile among predisposed older individuals vs their younger counterparts. ACE2 indicates angiotensin-converting enzyme 2; CVD, cardiovascular disease; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

# Respiratory Disease: COPD



**Chronic Obstructive Pulmonary Disease (COPD)** is a group of chronic inflammatory diseases of the lungs that block airflow within the lungs, making it difficult to breathe.

COPD includes the diagnoses of:

- Chronic Bronchitis- Characterized by excessive sputum production and chronic cough
- Emphysema- Characterized by loss of elastic recoil within the lungs, over-inflation of the alveoli, and impaired gas exchange

# Aging Respiratory System

**Diaphragm 25% weaker**

**Progressive disease due to exposure**

**Reduced chest wall, diaphragm muscle mass**

**Reduced alveolar and chest wall compliance**

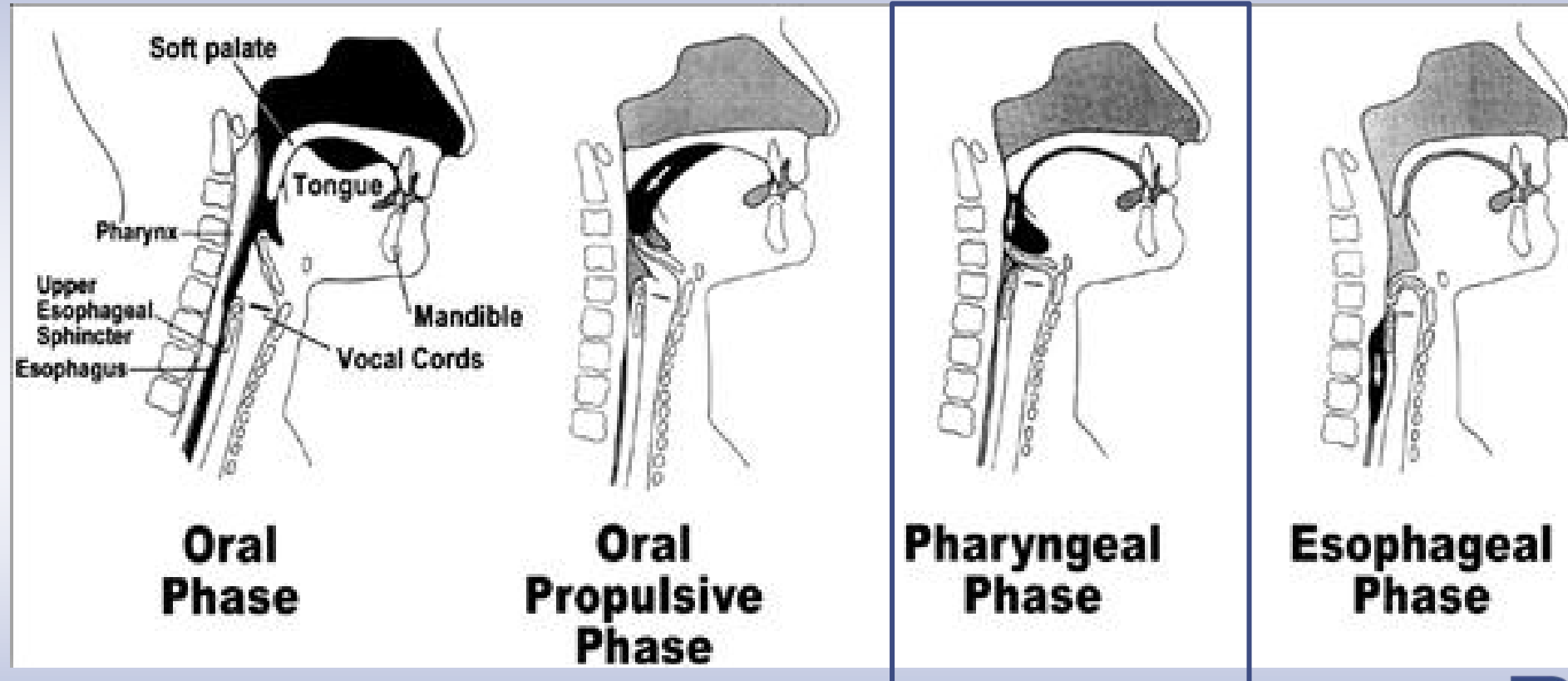
**Spinal-chest anatomical changes**

**Breathing workload doubles (age 20 to 70)**

**Ventilation stops with swallowing (apnea)**

**Laryngeal penetration occurs normally in elderly (bolus enters larynx).**

# Swallowing: Four Phases



# Pharyngeal Swallow/Extubation/COVID-19

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**Prolonged endotracheal intubation is a common cause of dysphagia swallowing disorders.**

COVID-19 patients present with many risk factors associated with requirement for mechanical ventilation through an artificial airway, making each case a complex and unique puzzle.

- **Endotracheal intubation** is defined as placement of an artificial airway tube into the trachea.
- **Translaryngeal, orotracheal (through the mouth and then through the larynx) intubation** is the most common means of securing a patent airway in controlled settings such as the operating room, emergency department and ICU, as well as in uncontrolled situations in the field.

# Respiratory Function & Swallow

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A **period of apnea** which occurs during the swallow in addition to changes in breath patterns which are present during intake, makes meal- time experience more challenging for individuals with reduced respiratory functions

Symptoms COPD include shortness of breath, decreased capacity for physical activity, presence of a chronic obstructive cough, **loss of appetite with possible weight loss**, and increased fatigue (Connell & Richman, 2009).

COPD can also result in a multitude of problems, including voice, communication, and swallowing disorders.



# Breathing and Swallowing Coordination

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Swallow respiratory coordination

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Exhale

Swallow

Exhale

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Respiratory Rate

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Young 16/min, elderly 20/min

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Swallow measures: total swallow duration, swallow apnea

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Increase with age

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Decrease with lower lung volumes

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# Section: K0100



## Swallow Phase

K0100A, loss of liquids/solids from mouth when eating or drinking.



Oral Prep (weak lips) or  
Oral Phase (weak tongue)

K0100B, holding food in mouth/cheeks or residual food in mouth after meals



Oral Prep (weak lip seal) or  
Oral Phase (decreased tongue ROM)

K0100C, coughing or choking during meals or when swallowing medications.

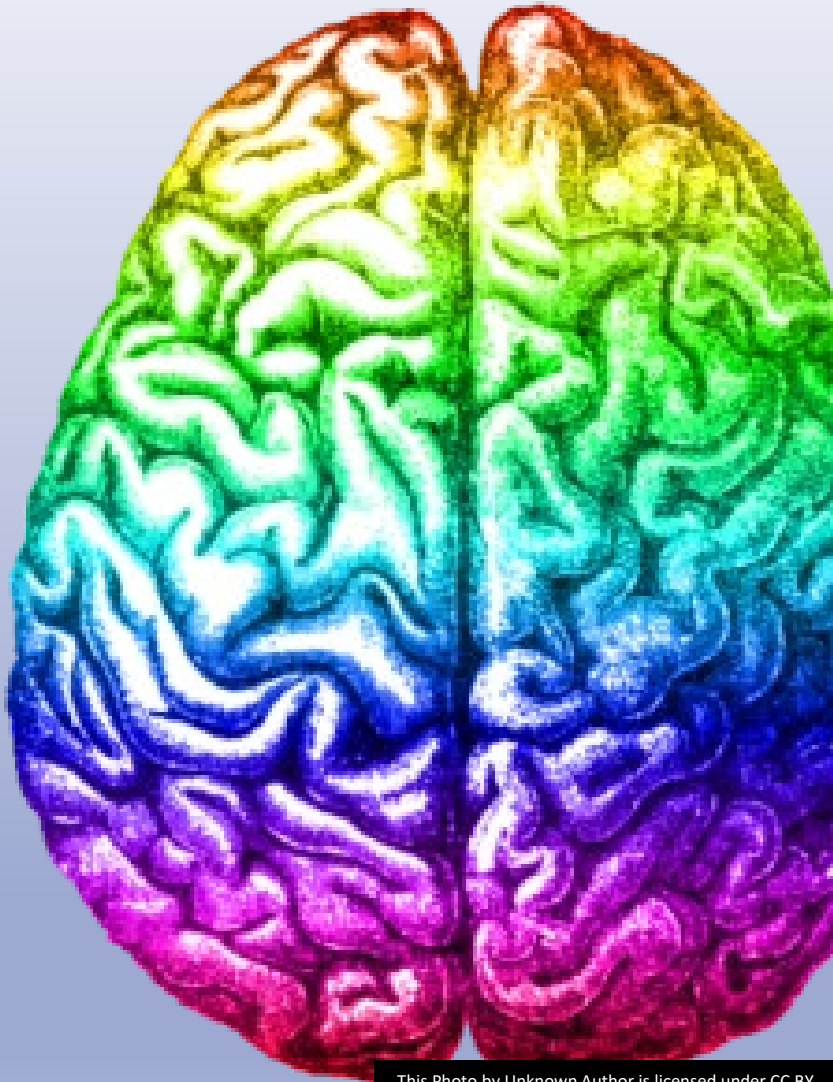


Oral Phase (base of tongue) or  
Pharyngeal Phase

K0100D, complaints of difficulty or pain with swallowing.



Pharyngeal Phase or  
Esophageal Phase (pain)



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# COVID-19 and Neurologic Disease

JAMA, Neurologic Manifestations of Hospitalized Patients With Coronavirus Disease 2019 in Wuhan, China

**Main Outcomes and Measures:** Clinical data were extracted from electronic medical records, and data of all neurologic symptoms were checked by 2 trained neurologists. Neurologic manifestations fell into 3 categories: central nervous system manifestations (dizziness, headache, impaired consciousness, acute cerebrovascular disease, ataxia, and seizure), peripheral nervous system manifestations (taste impairment, smell impairment, vision impairment, and nerve pain), and skeletal muscular injury manifestations

# COVID-19 and Neurologic Disease

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*JAMA- The Spectrum of Neurologic Disease in the Severe Acute Respiratory Syndrome Coronavirus 2 Pandemic Infection, Neurologists Move to the Frontlines*

## Findings:

- 5 of 206 patients with SARS in Singapore developed large-vessel strokes. Four of these patients had their strokes in the setting of critical illness owing to SARS, and 3 were associated with significant episodes of hypotension.
- These neurologic manifestations ranged from fairly specific symptoms (eg, loss of sense of smell or taste, myopathy, and stroke) to more nonspecific symptoms (eg, headache, depressed level of consciousness, dizziness, or seizure).
- Whether these more nonspecific symptoms are manifestations of the disease itself or consistent with a systemic inflammatory response in patients who were quite ill will need to be defined in future studies

# COVID-19 and Mental Health

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Frontline health care workers caring directly for patients with COVID-19 reported higher levels of severe mental health symptoms than those in secondary roles.

**Concern about protecting oneself** from the virus because they are at higher risk of serious illness.

**Concern that regular medical care or community services may be disrupted** due to facility closures or reductions in services and public transport closure.

**Feeling socially isolated**, especially if they live alone or are in a community setting that is not allowing visitors because of the outbreak.

**Guilt** if loved ones help them with activities of daily living.

**Increased levels of distress**

# Covid-19 Future thinking, an Interdisciplinary approach

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- Covid-19 has created new norms
- Specific risk factors and conditions contribute to and result from this disease.
- In the present crisis facilities are treating specific Covid-19 related issues
- Future thinking requires us to evaluate our capacity as interdisciplinary teams as we leverage the RAI to provide care (RAI – MDS, CAAs, Care Planning), be paid appropriately (PDPM) and achieve desired outcomes (Quality Measurement).

# Hospital Relationships and DRGs

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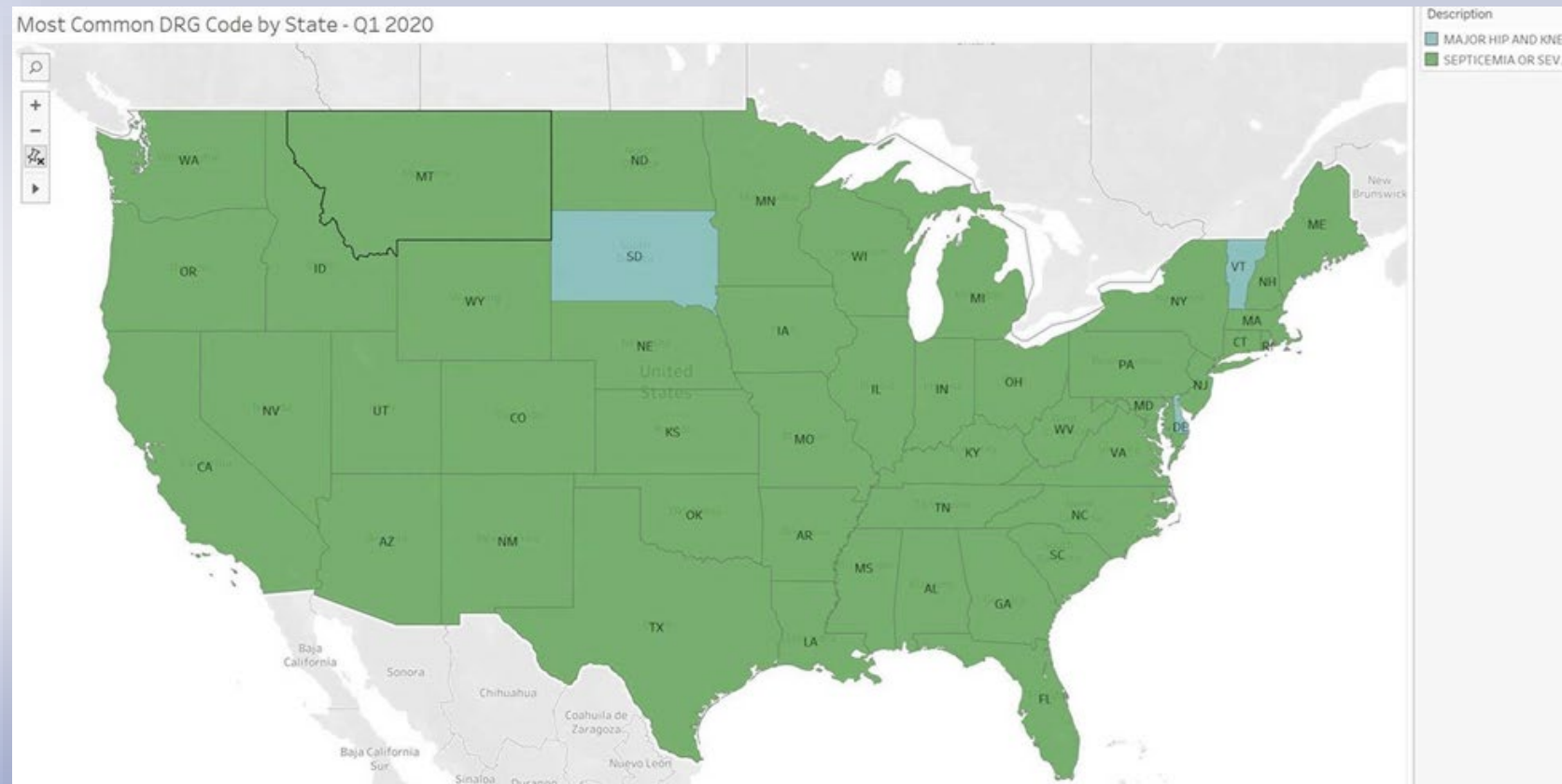
A DRG, or diagnostic related group, is how Medicare and some health insurance companies categorize hospitalization costs and determine how much to pay for a patient's hospital stay.

Rather than paying the hospital for each specific service that was provided, Medicare or a private insurer will pay the hospital a predetermined amount based on the patient's Diagnostic Related Group.

This encompasses a variety of metrics designed to classify the resources needed to care for a given patient based on diagnosis, prognosis, and various other factors.

# ResDAC and Hospital DRGs

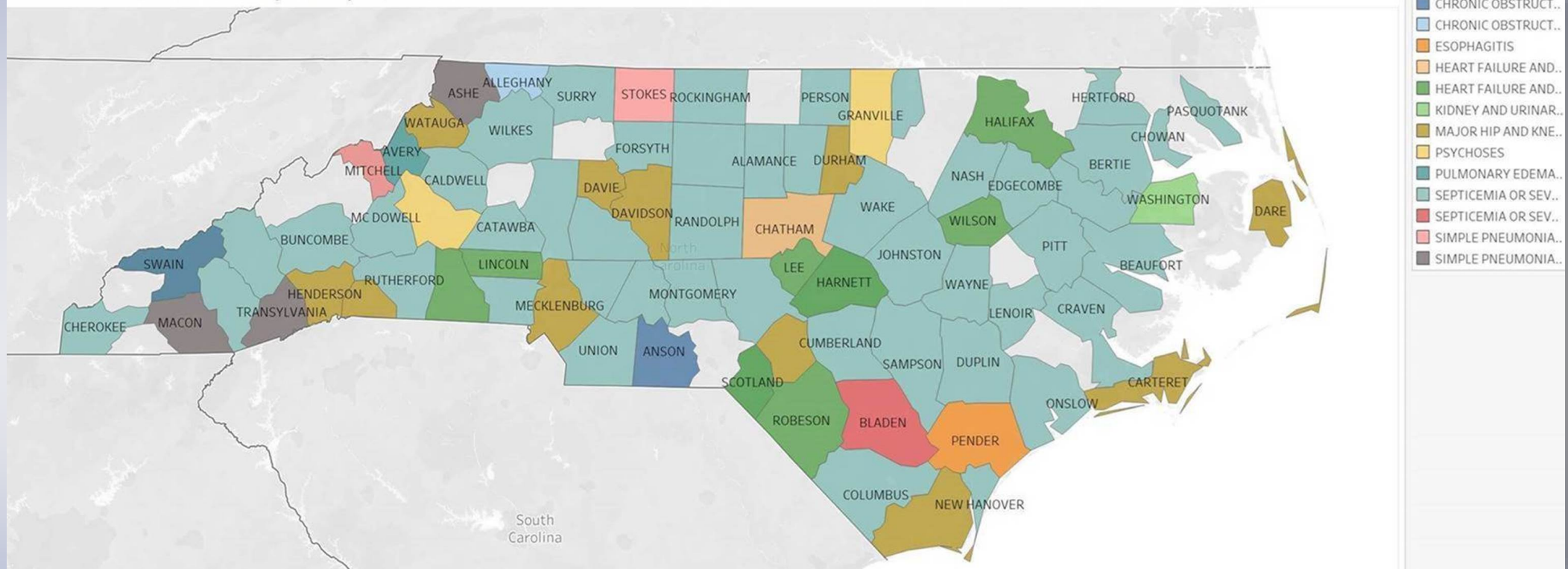
Nationwide, Septicemia is the number 1 hospital recorded DRG





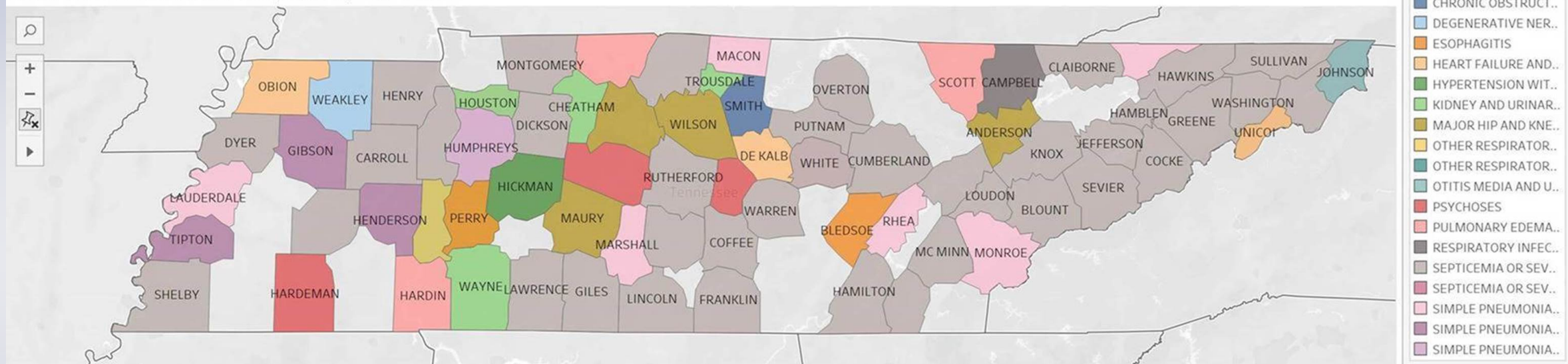
# ResDAC Hospital DRG

Most Common DRG Codes By County - Q1 2020



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Most Common DRG Codes by County - Q1 2020

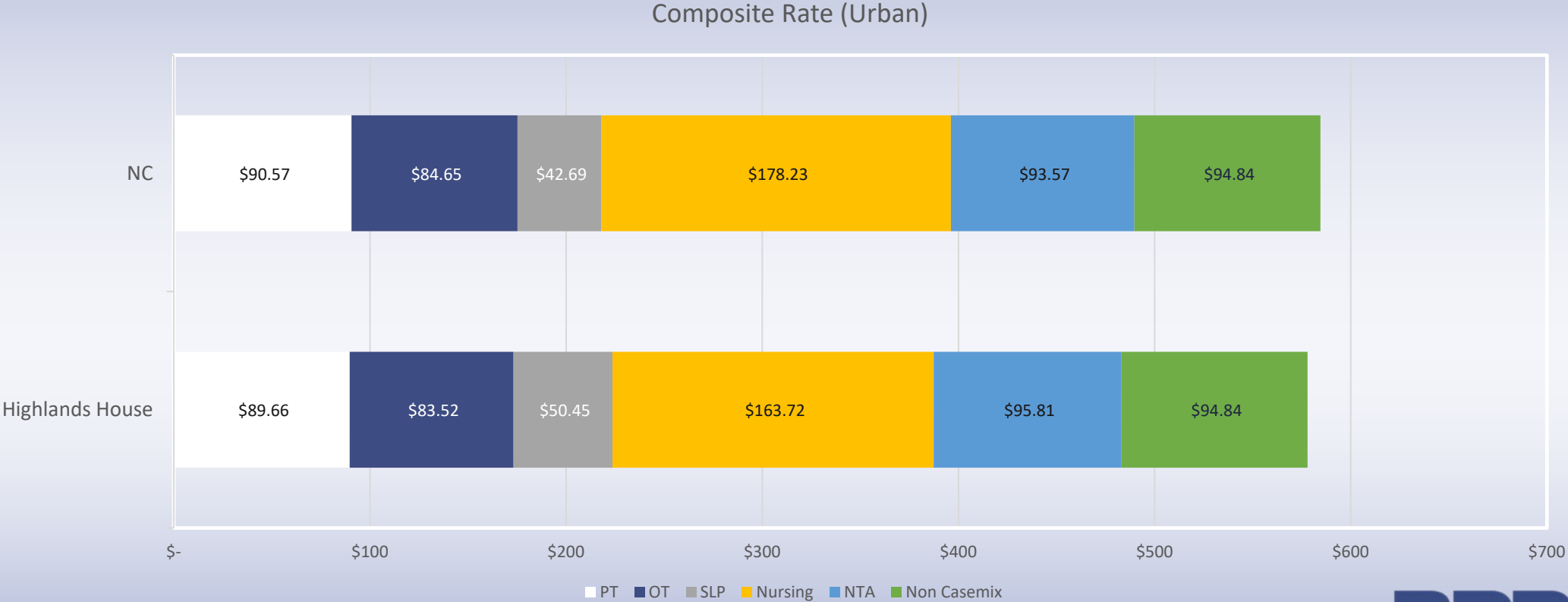


# ResDAC DRG and Re-admissions

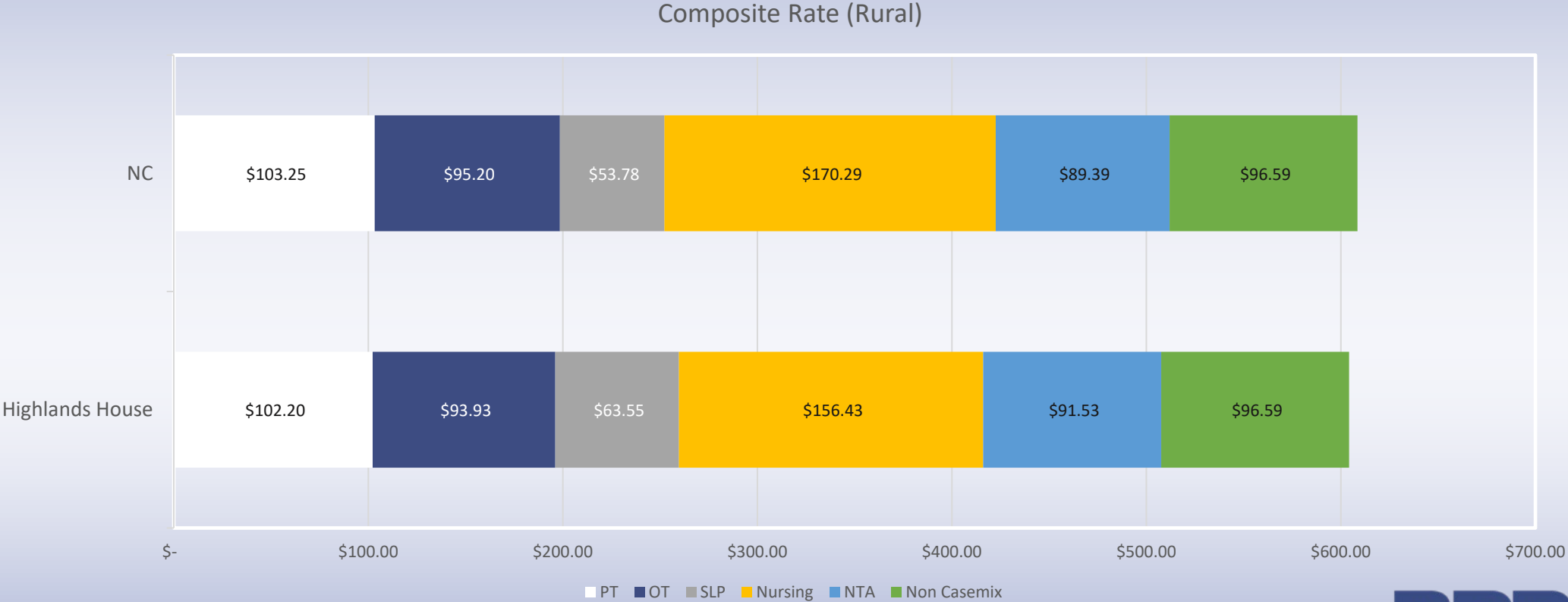
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- Interesting from ResDAC:
  - Nationally for residents that were admitted to SNFs, after a hospital stay for any diagnosis other than septicemia, and then readmitted to a hospital in that same episode with a diagnosis of septicemia;
    - In the top 25% of SNF primary diagnosis 13% were respiratory related, 6% were Renal Related, 4% were related to encephalopathy, 1% were surgical related and 1% related to arterial occlusion.
  - Facilities can use this data to facilitate processes to prevent residents from developing septicemia and partner with hospitals to create care flow pathways that help residents achieve their goals while limiting Healthcare-Acquired Infections and rehospitalizations.

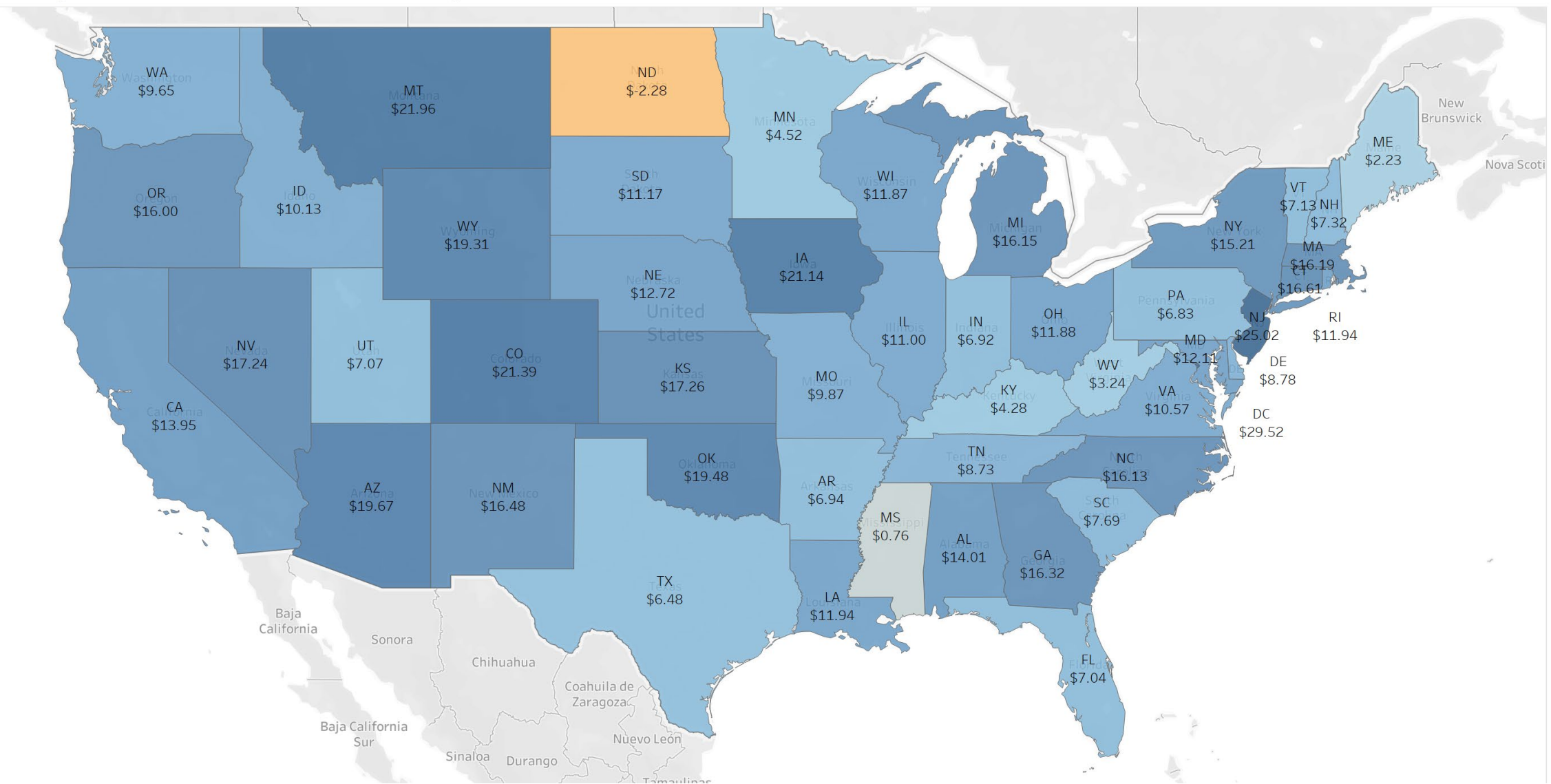
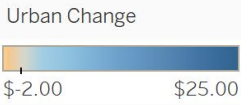
# SNF PDPM Data: Q2 2020



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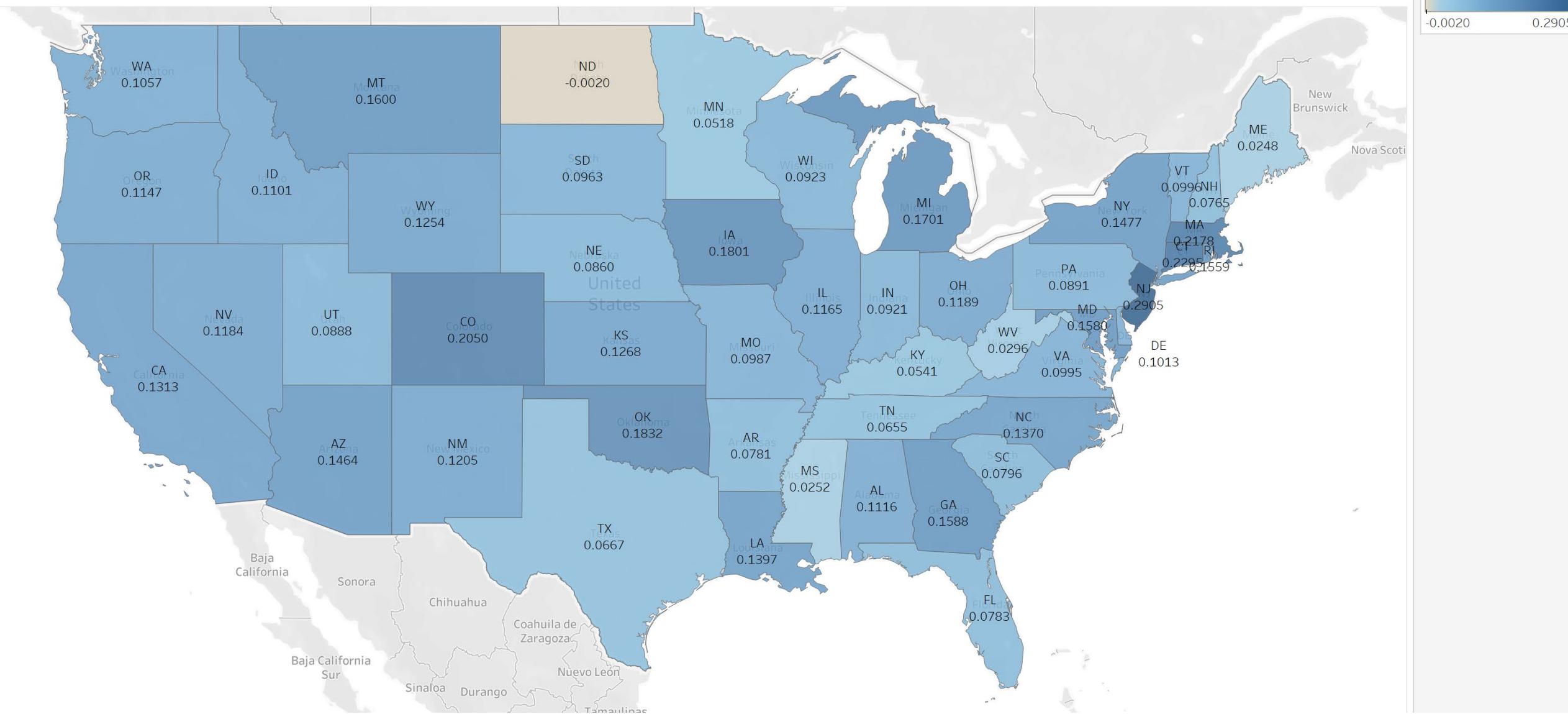


Change in Urban Rate from Q1 2020 through Q2 2020

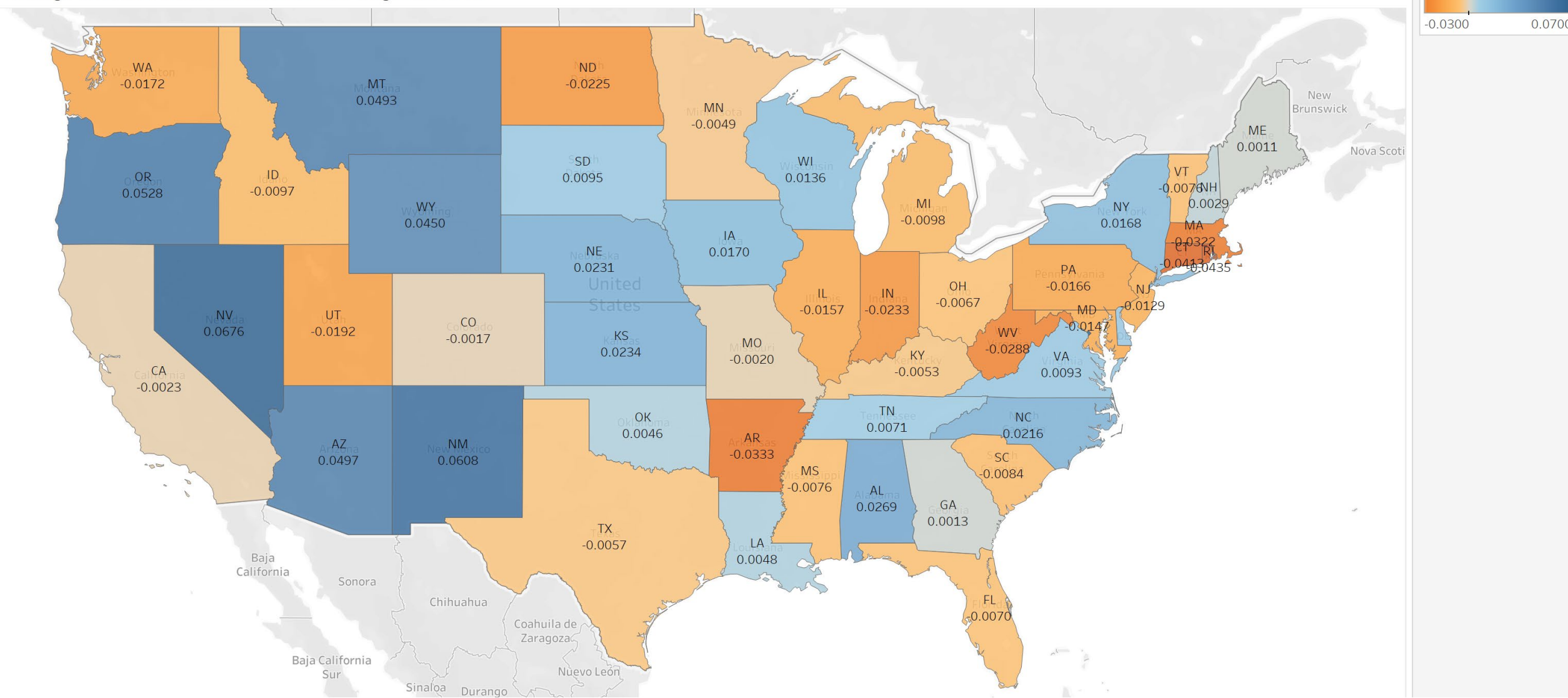




Change in Nursing CMI from Q1 2020 through Q2 2020

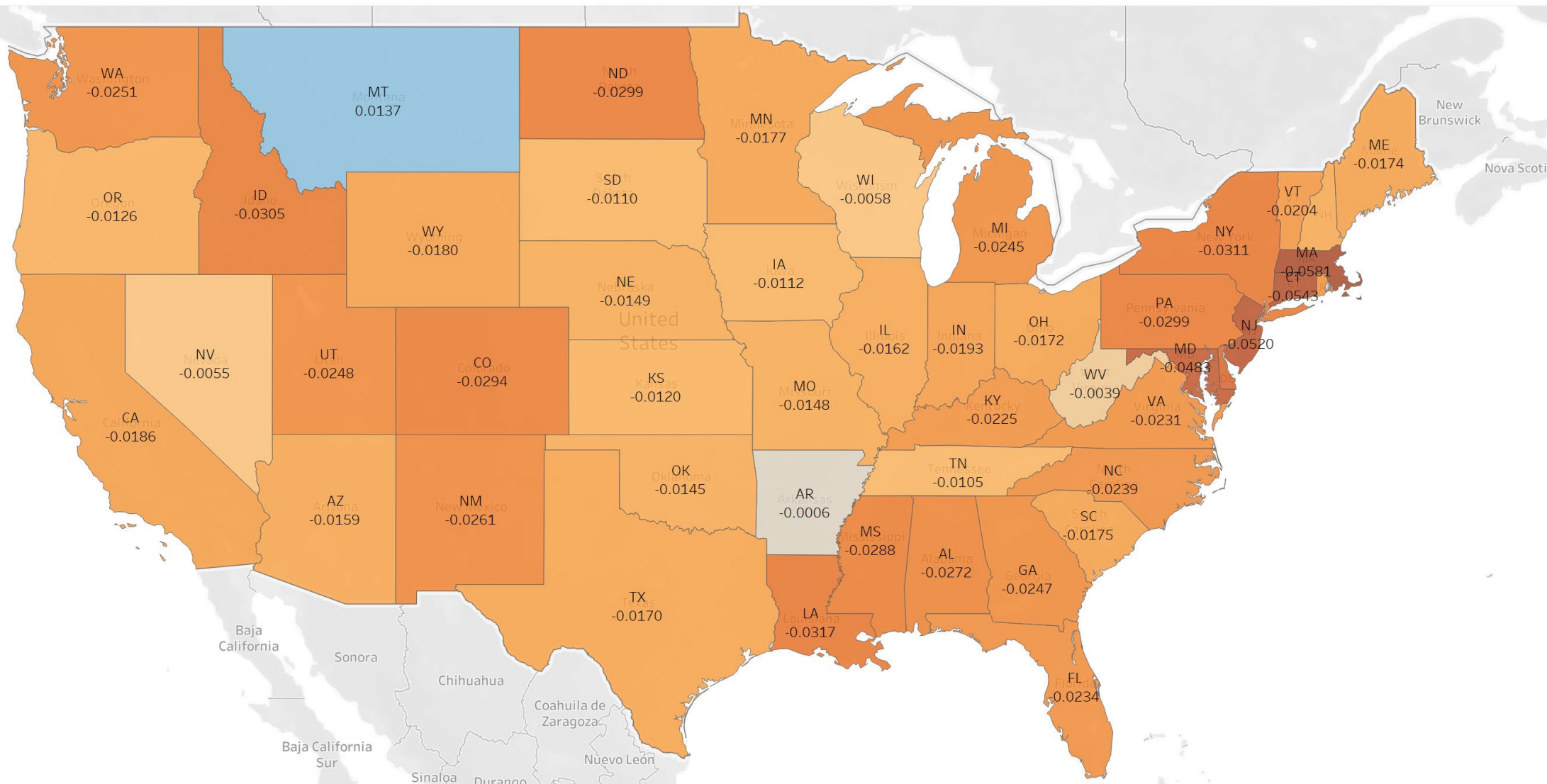
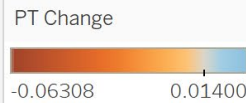


Change in NTA CMI from Q1 2020 through Q2 2020

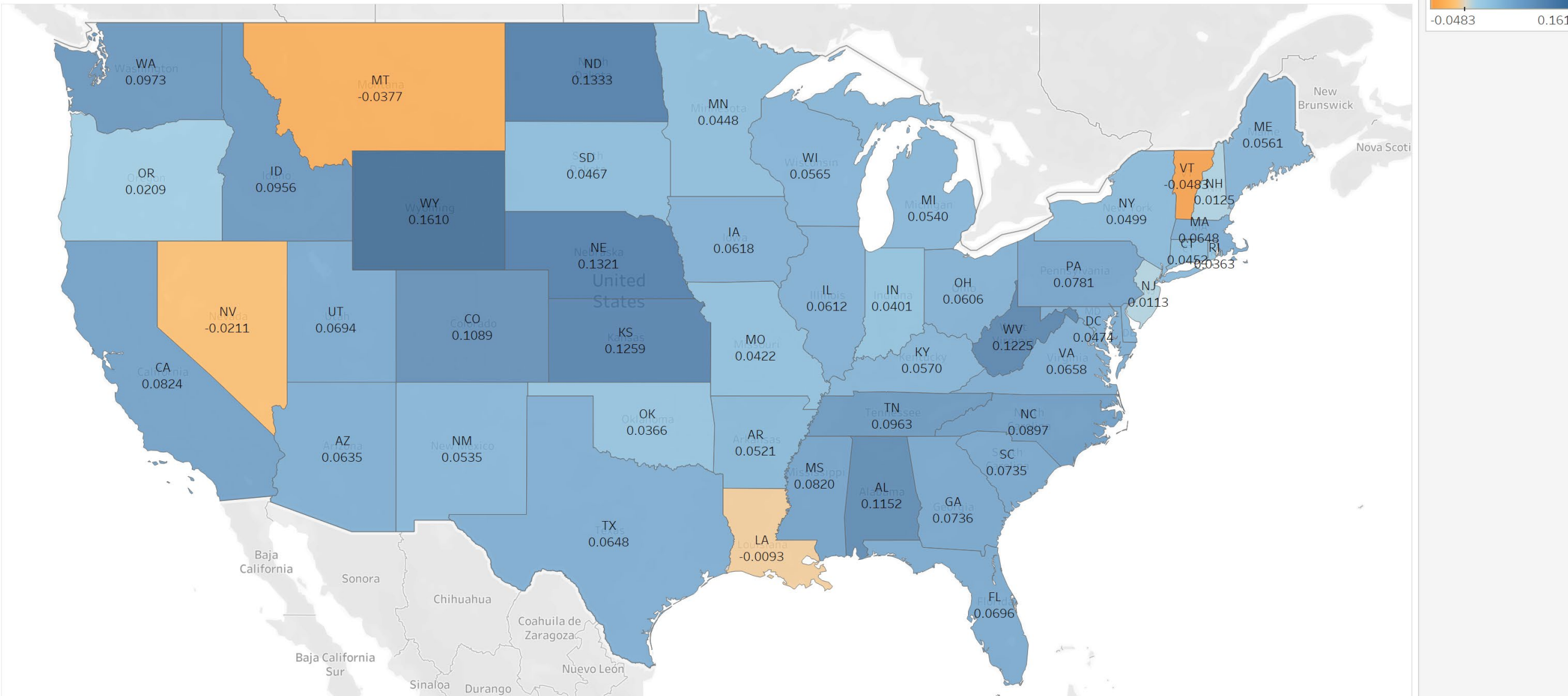




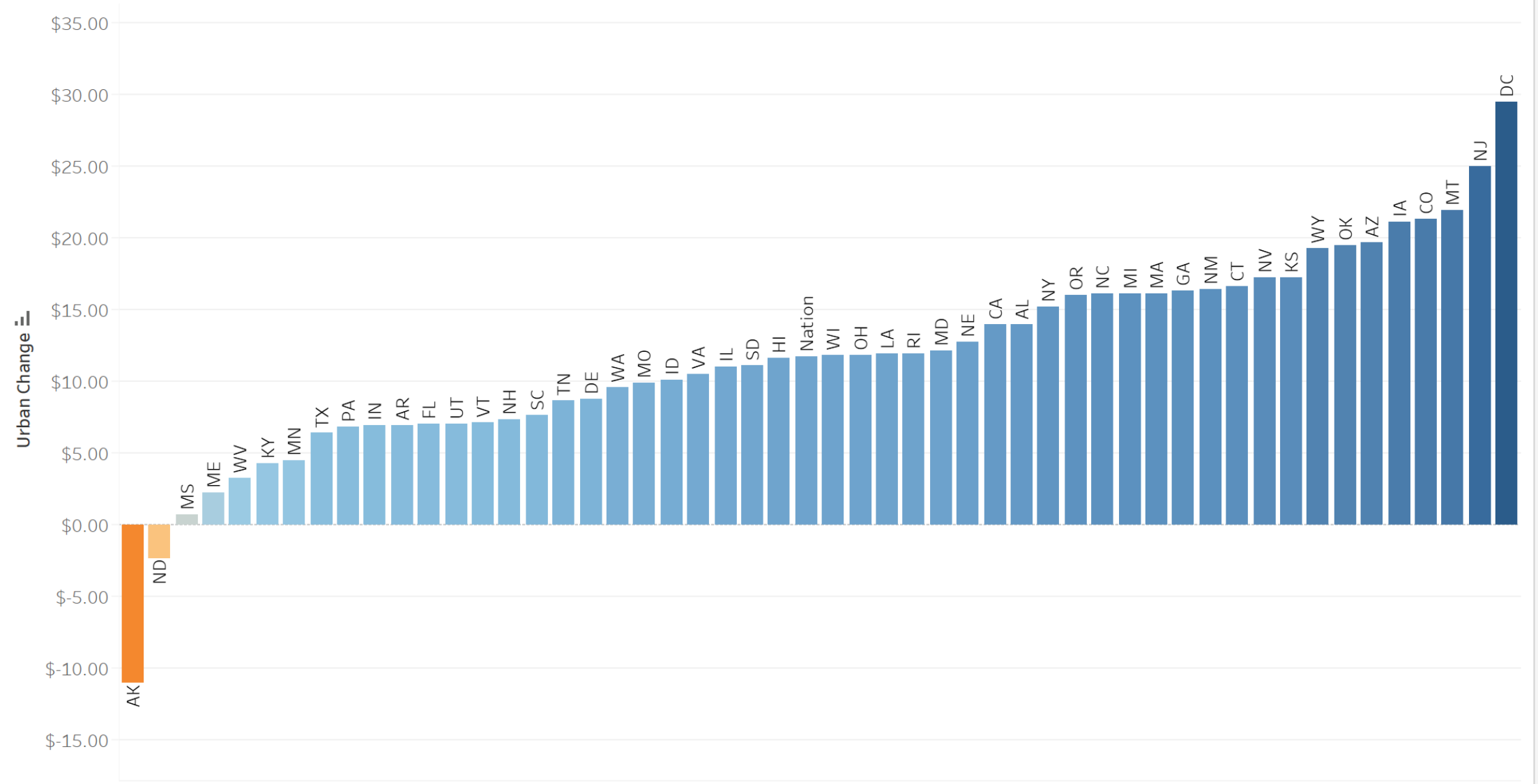
Change in PT CMI from Q1 2020 through Q2 2020



Change in SLP CMI from Q1 2020 through Q2 2020

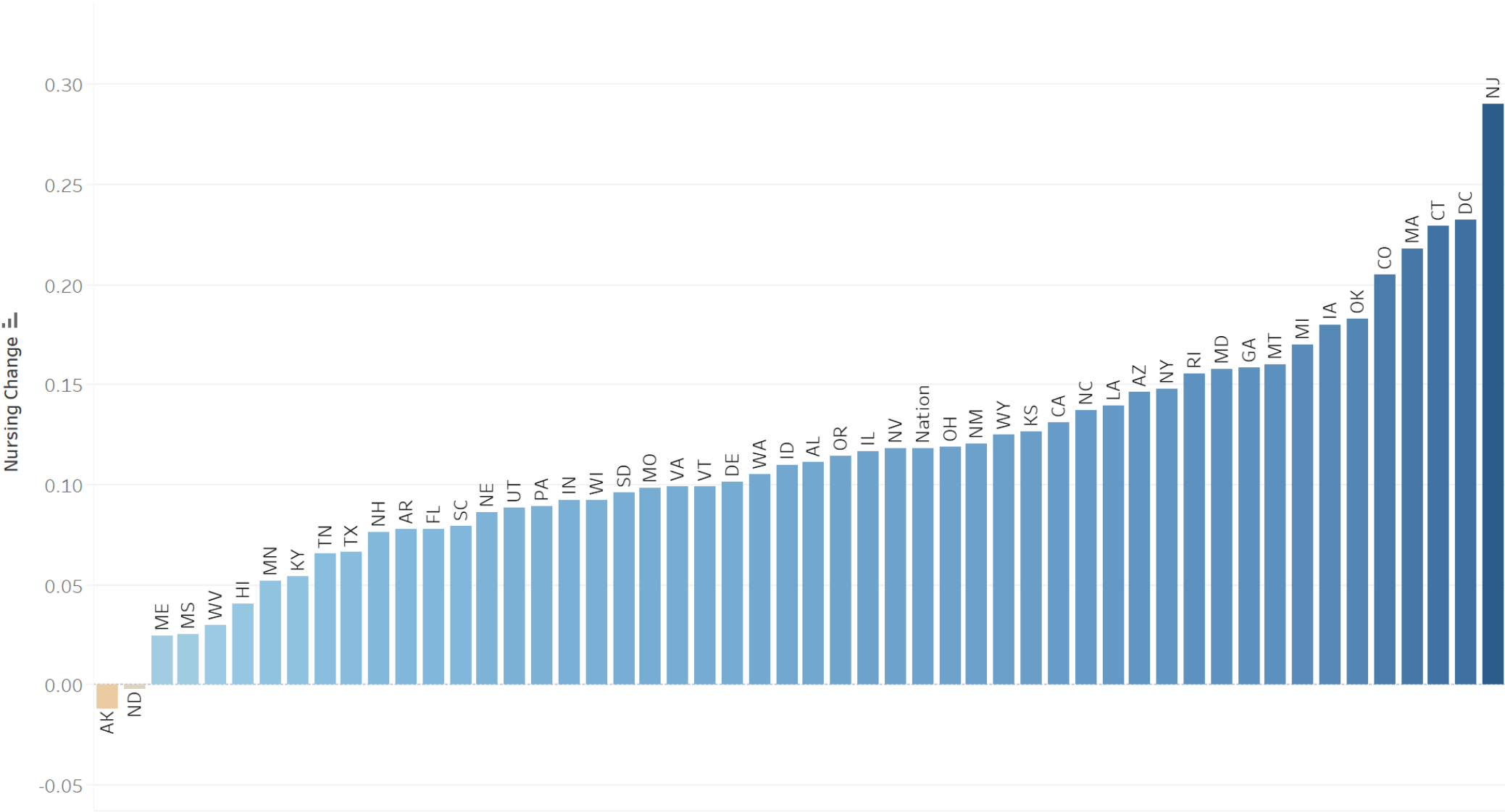


Change in Urban Rate Q1 to Q2 2020



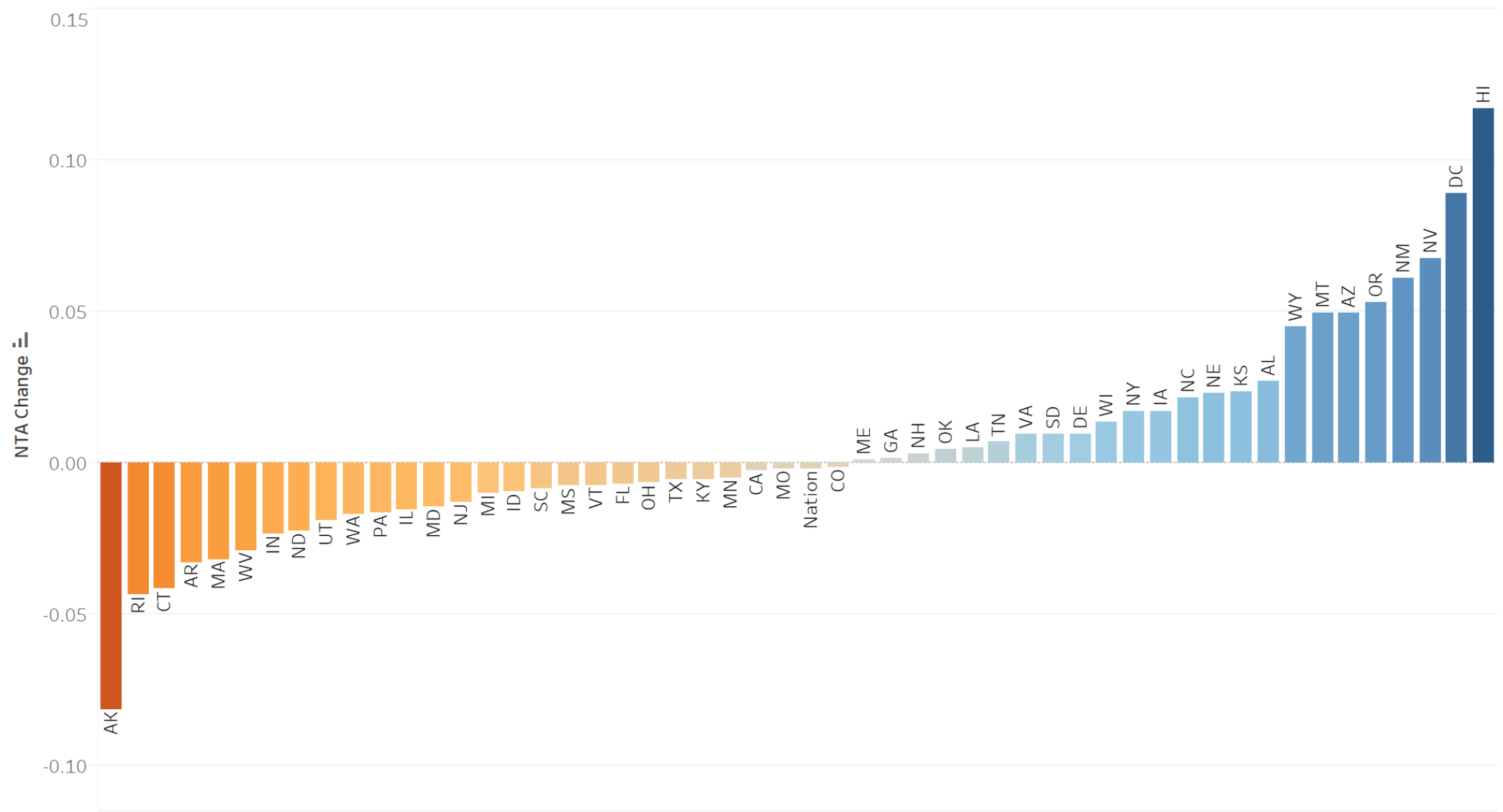
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Change in Nursing CMI Q1 to Q2 2020

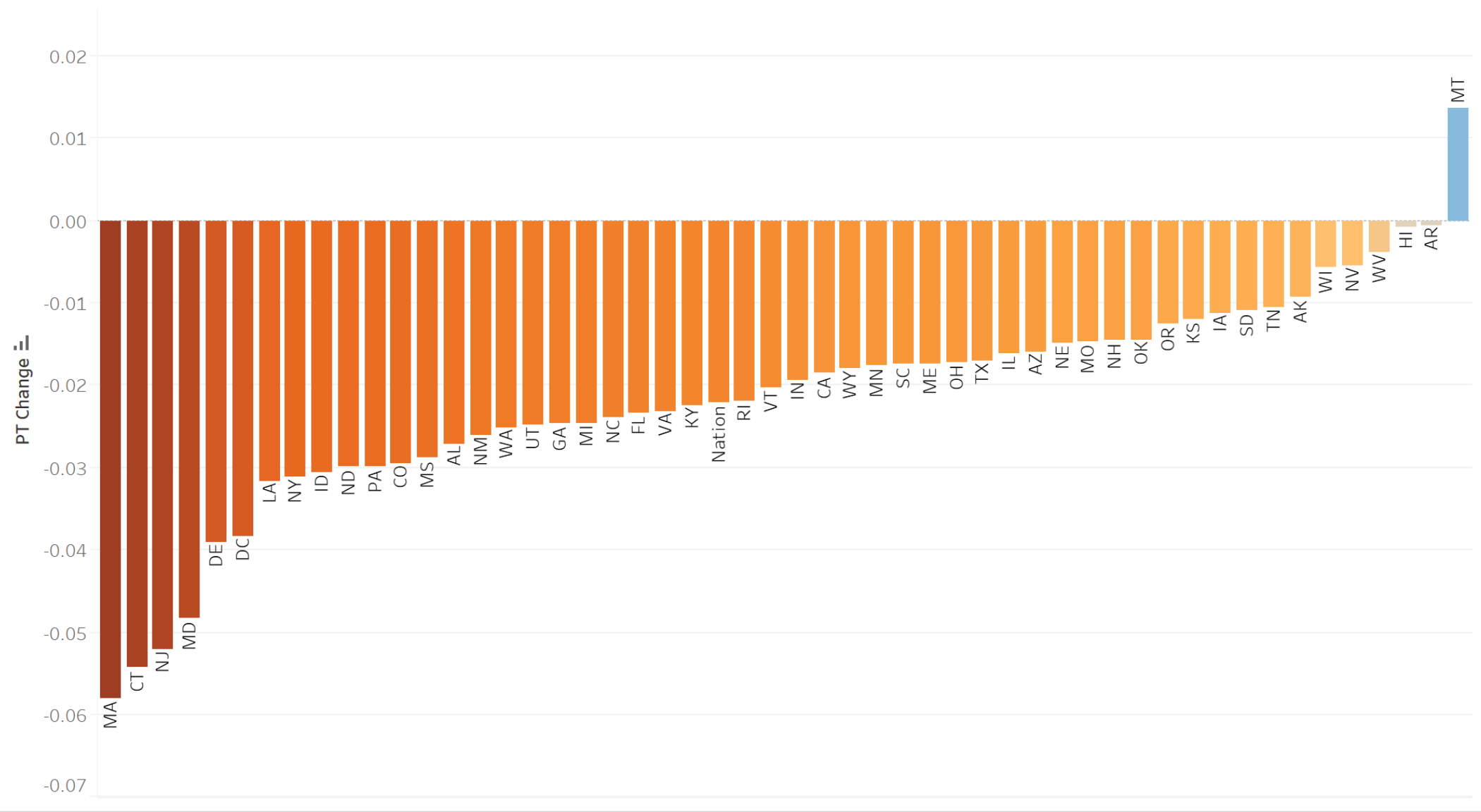


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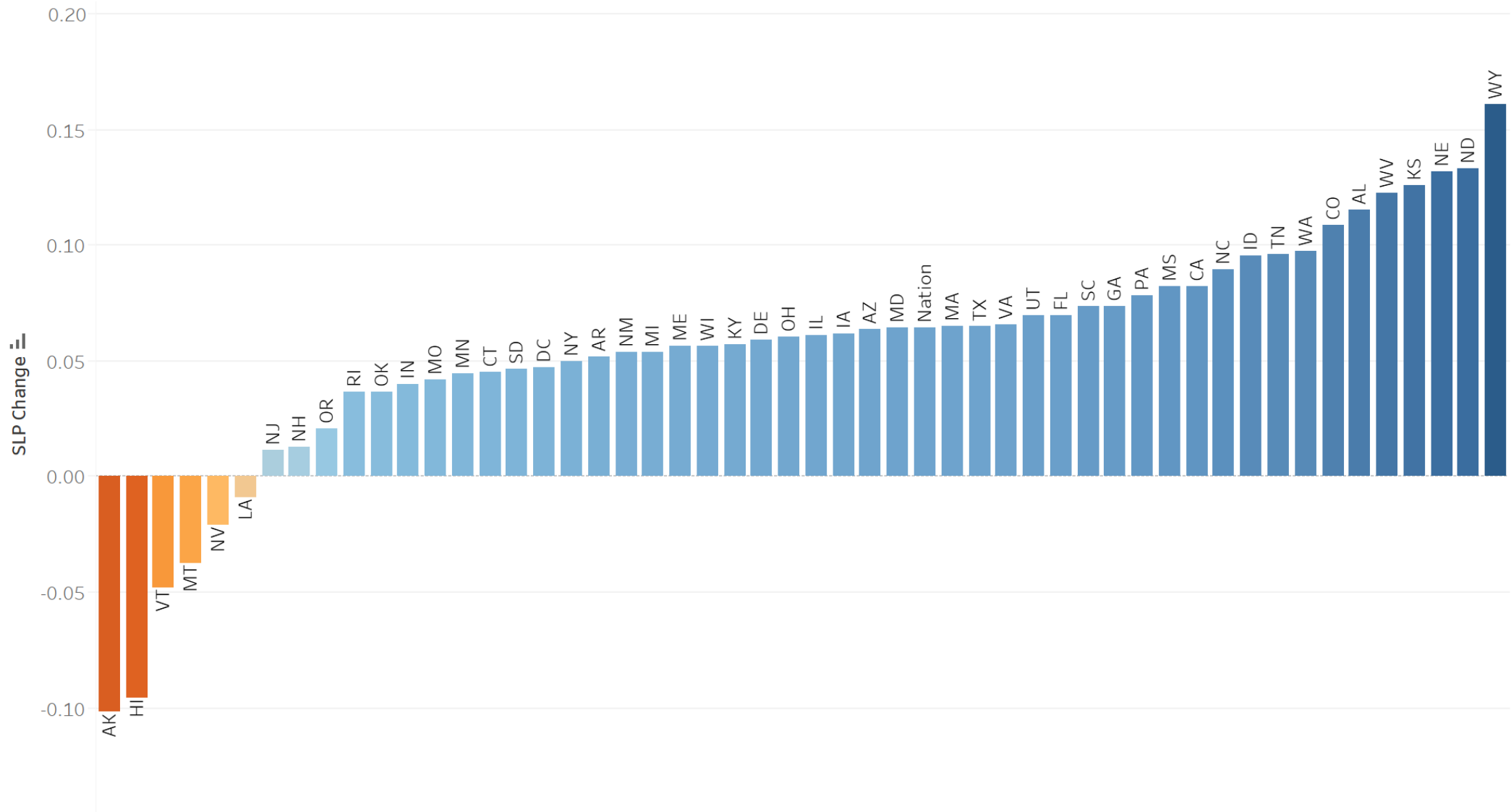
Change in NTA CMI Q1 to Q2 2020



Change in PT CMI Q1 to Q2 2020



Change in SLP CMI Q1 to Q2 2020



SUM(SLP Change)

-0.1017



0.1610

# Learn More about ResDAC

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- Broad River Rehab will provide facility/company specific ResDAC analysis
- Contact us:
  - Broad River Rehab Customers – Contact your RD/AM/RVP/SVP. We will work together with you to get the most out of the data for your facility.
  - Facilities that are not currently a Broad River Rehab Customer – Contact us through our website [www.broadriverrehab.com](http://www.broadriverrehab.com) or contact Joe Eaton [jeaton@broadriverrehab.com](mailto:jeaton@broadriverrehab.com) We can provide a free ResDAC report card for your facility.
  - Anyone can access our experts at Broad River Rehab through our [Ask The Expert Link](#)



# Broad River Rehab Education

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- Broad River Rehab now offers NAB credits for Administrators
- The following courses are available for credit thru Broad River Rehab:
  - SNF Quality Reporting Program (QRP) 2021 & the October NHC/Care Compare Refresh- 1.5 hours
  - CMS SNF Final Rule and MDS Updates- 1.25 hours
  - Promoting Patient Healthcare Literacy- 1.25 hours

[Education — Broad River Rehab](#) (link to content)\*

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# QUESTIONS?