

Vulnerability Assessment Report and Jurisdictional Plan: South Carolina

Josh Mercadel, MSPH
Lara Schneider, MSPH, PhD(c)

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Executive Summary

Background: In November 2014, Scott County, IN, experienced simultaneous outbreaks of Human Immunodeficiency Virus (HIV) and Hepatitis C Virus (HCV). Investigators were able to attribute the outbreaks to needle-sharing among the rural county's prescription opioid abusers, which ultimately resulted in 215 new cases of HIV; over 90% of these HIV cases had coinfections of HCV.

Purpose: The purpose of this report is threefold: first, to identify the South Carolina (SC) counties at the highest risk for injection drug use and resultant bloodborne infection outbreaks; second, to identify the resources SC currently has that could help ameliorate the burden of addiction and bloodborne infection outbreaks; and last, to present possible interventions as well as identify preventative services at both the state- and county-level that may lead to reducing the risk of substance abuse and infection outbreaks resulting from injection drug use (IDU).

Methods: A Social Vulnerability approach (Flanagan et al, 2011) was used to rank SC counties on their overall vulnerability to substance abuse and possible bloodborne infection outbreaks resulting from IDU. Based on literature and feedback from statewide stakeholders, several relevant variables were identified; advisors from Centers for Disease Control and Prevention (CDC) provided further guidance on categorizing the variables, resulting in an Overdose and Bloodborne Infection Index (OBII) with two domains: risk factors and mitigating factors. Z-scores for each variable in the Risk and Mitigating domains were calculated and summed by county; overall Vulnerability was calculated by subtracting the sum of the Mitigating Factors from the sum of the Risk Factors.

Variables Used: All data is from the year 2017 and measured at the county level.

Risk Factors: Percent Unemployment, Prescription opioids per 100,000, Drug deaths per 100,000, HIV incidence per 100,000, Opioid overdoses per 100,000, Naloxone administrations per 100,000, Drug crimes per 100,000, Endocarditis cases per 100,000, Acute HCV cases per 100,000, Percent rural, Difference in HCV and HIV rates, Medicaid opioid treatment claims per 100,000, HIV cases who reported IDU per 100,000.

Mitigating Factors: Per Capita Income, Substance abuse clinics per 100,000, EMS personnel per 100,000, Presence of Urgent Care facility, Mental health clinics per 100,000, Buprenorphine-waivered providers per 100,000, Law enforcement personnel per 100,000, Hospitals/Emergency departments, Primary care providers per 100,000, Presence of major highway within 5 miles of county border, Population density, Mental health providers per 100,000, Opioid treatment clinics.

Key Messages:

- Opioid abuse is still a problem in SC.
- Prevention and treatment services are concentrated in urban areas, leaving rural populations particularly vulnerable to outbreaks of bloodborne infections.
- Surveillance of hepatitis C virus in South Carolina could be improved by following up with healthcare providers for symptoms of acute hepatitis C virus in patients and risk factors for hepatitis C virus acknowledged by patients.

- Implementation of evidence-based solutions, in conjunction with current efforts across the state, could minimize the risk of bloodborne infection outbreaks as a result of needle sharing among persons who inject drugs.

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Part I: Vulnerability Assessment

Background & Rationale

November 2014 saw the beginning of an outbreak of human immunodeficiency virus (HIV) among the residents of Scott County, IN. Within the following year, a total of 181 new HIV cases were diagnosed in the area, in stark contrast to the five cases diagnosed in the ten years prior. Most (87.7%) of those diagnosed with HIV between November 2014 and November 2015 reported having injected a prescription opioid; furthermore, 92.3% of these new HIV cases were coinfecting with hepatitis C virus (HCV) (Peters et al, 2016).

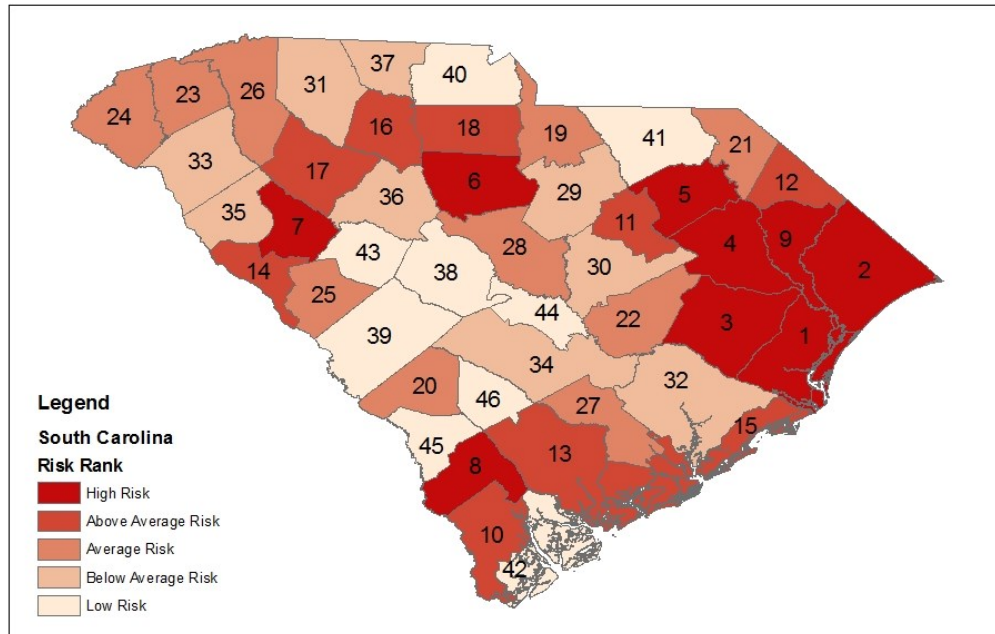
The relative speed and ease with which the HIV and HCV infections spread through Scott County highlighted not only the opioid epidemic that has been building in the US since the early 2000s, but the additional public health burdens that may occur in tandem. HCV is the most common infection associated with injection drug use (IDU); prevalence estimates of HCV among long term (>3 years) persons who inject drugs (PWID) are 75%-90% and 18%-38% in short term (<3 years) PWID (Amon et al 2008). While HIV is not as easily transmitted via syringe sharing, the Scott County outbreak illustrates that the introduction of a single HIV strain into the close community of PWID can have far-reaching consequences.

In response to the Scott County outbreaks of HIV and HCV, the Centers for Disease Control and Prevention (CDC) recognized the threat of additional HIV/HCV outbreaks in areas with similar conditions. Using acute HCV cases as a proxy for IDU, Van Handel et al (2017) conducted a vulnerability assessment where they built a prediction model using indicators of IDU (drug overdoses, prescription opioid sales, median per capita income, percent white population, percent unemployed, and buprenorphine prescribing potential) and HIV proximity (likelihood of HIV introduction by neighboring areas) to identify counties at a high risk of HIV and HCV outbreaks as a result of needle sharing among PWID. Because of constraints inherent in national analyses, and a lack of acute HCV data in the state, South Carolina received funding to conduct their own vulnerability assessment using data and methods at their discretion; this report details the findings and methodology of that assessment, as well as suggestions for decreasing vulnerability to HIV/HCV outbreaks via IDU across the state.

The vulnerability assessment of South Carolina has 3 domains: Risks, Mitigators, and Overall Vulnerability. The Risks domain includes variables that help describe each county's risk for opioid overdose and transmission of HIV/HCV from needle sharing among PWID. The Mitigator domain includes variables that help describe each county's ability to prevent and treat opioid abuse and incident cases of HIV/HCV cases. Scores for the Risk and Mitigator domains were calculated by summing the z-scores (a standardization transformation that relates each county's data point for a variable to the distribution of that variable for all counties) for all variables within each domain. The Overall Vulnerability domain contains no unique variables, but simply weights each county's risk factors in relation to its mitigators; the Overall Vulnerability score for each county was calculated by subtracting its Mitigators score from its Risks score.

*All data presented is for the year 2017

1.a. Overdose and Bloodborne Infection Risk Factors



List of variables

- Percentage Unemployed
- Prescription Drugs per 100,000
- Drug deaths per 100,000
- HIV Incidence per 100,000
- Percentage Overdose due to Opioids
- Naloxone per 100,000
- Drug Crime per 100,000
- Cases of Endocarditis per 100,000
- Cases of Acute HCV per 100,000
- Percentage Rural
- Differences of HCV and HIV
- Opioid Medicaid per 1000,000
- Prevalence of Injection Drug Use among HIV+ per 100,000

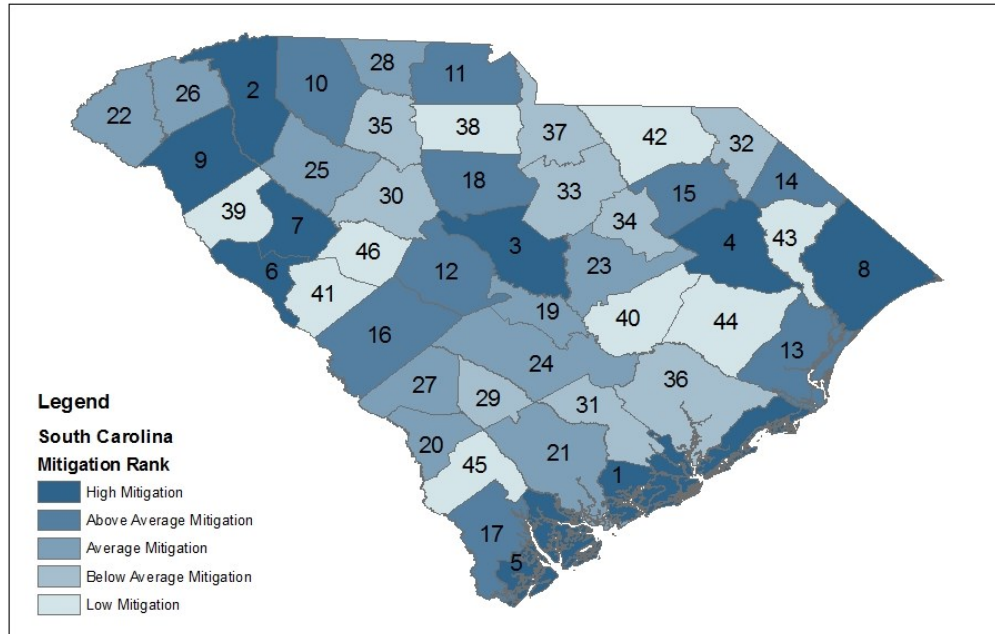
Methodology

For details on where data for each variable was obtained, the raw data for each variable by county, the z-scores for each variable by county, and how z-scores are calculated, please refer to Part III: Technical Notes – Methods. For county rank maps of each risk variable, please refer to Part III: Technical Notes – Indicator Maps.

Comments

The risk ranking map includes data on only factors that were determined to be a potential risk factor towards outbreaks of bloodborne infections as a result of needle sharing. The counties that showed to have the highest risk factors in order were: Georgetown, Horry, Williamsburg, Florence, Darlington, Fairfield, Greenwood, Hampton and Marion. The counties with the least risk were: Bamberg, Allendale, Calhoun, Saluda, Beaufort, Chesterfield, York Aiken and Lexington. In the above map we see a cluster of 6 counties in the north east section near the coast of the state. Many occurrences of drug related crime and activity can be contributed to Horry county which was found to be 2nd in the overall risk. The counties in the immediate vicinity of Horry could be experiencing increased risk due to this activity occurring within this county. The other three counties that are not near Horry, Hampton, Fairfield and Greenwood, still exhibit some of the highest risk factors in the state. Although proximity to Horry cannot give reason to why these counties are experiencing increased risk factors, they still have their own contributing factors to put them in the top 20%. A cluster of low risk counties such as Lexington, Aiken, Calhoun, Saluda, Bamberg and Allendale can be seen on the map in the central and western boarder of the state. The characteristics of these counties differ greatly in what contributes to the reduced risk factors but reduced rates of incidence of disease is a major factor.

1.b. Overdose and Bloodborne Infection Mitigating Factors



List of variables

- Per Capita Income
- Substance Abuse Clinics per 100,000
- Emergency Medical Service Personnel per 100,000
- Urgent Care (Y/N)
- Mental Health Clinics per 100,000
- Buprenorphine Doctors per 100,000
- Law Enforcement Officers per 100,000
- Hospitals and Emergency Departments
- Primary Care Providers per 100,000
- Highway (Y/N)
- Population Density
- Mental Health Providers per 100,000
- Opioid Treatment Clinics per 100,000

Methodology

For details on where data for each variable was obtained, the raw data for each variable by county, the z-scores for each variable by county, and how z-scores are calculated, please refer to Part III: Technical Notes – Methods. For county rank maps of each mitigating variable, please refer to Part III: Technical Notes – Indicator Maps.

Comments

The mitigator ranking map includes data on only factors that were determined to be an effect that would reduce the harm a risk factor would have on a population. The counties that showed to have the highest mitigating factors in order were: Charleston, Greenville, Richland, Florence, Beaufort, McCormick, Greenwood, Horry, Anderson. The counties with the least mitigating factors in order were: Saluda, Hampton, Williamsburg, Marion, Chesterfield, Edgefield, Clarendon, Abbeville and Chester. The top five highest mitigating counties have a few things in common that could have led to the high rank achieved. The populations in each of these counties is larger than most of the other counties, the per capita income is higher, there are city centers in each of them and finally the funding for resources is present. These counties do rank high on the risk factors however the mitigating factors are also present due to abundant resources. If the lowest rank counties are considered they appear to be lower because of reduce population, reduced per capita income and a lack of resources to mitigate risk factors. Some of these counties are underdeveloped and lower income leading to a lack of funding and capability to deal with potential risk factors.

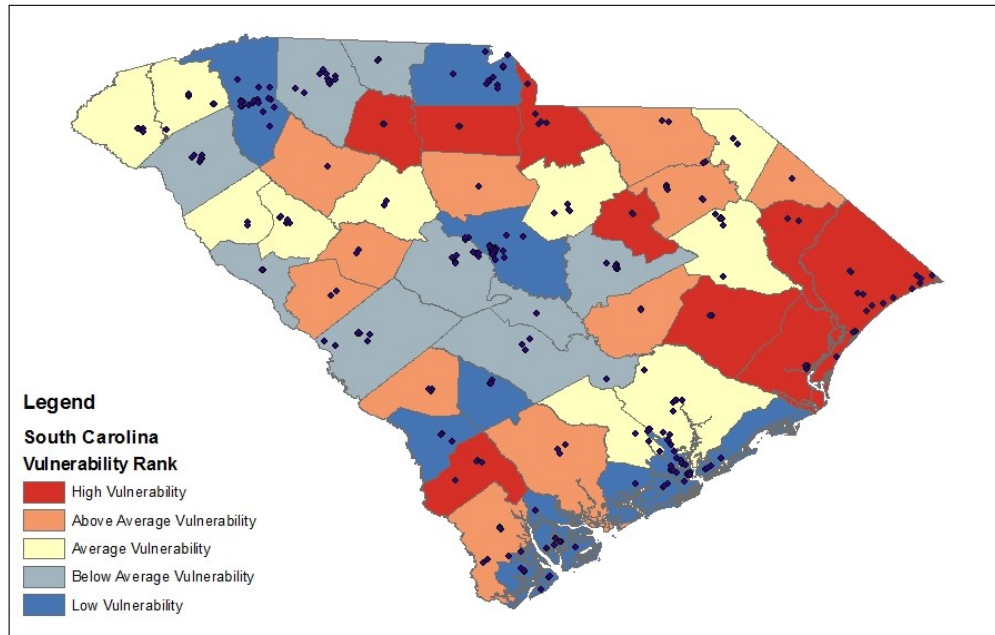
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of HIV incidence and drug related crime in the highly populated York county and Charlotte metropolitan area. Within the least vulnerable counties, there is a common theme associated with most: Charleston, Greenville, Lexington Richland and York are some of the highest per capita income counties in the state. They also have an abundance of resources to mitigate the impact of an HIV/HCV outbreak and address substance abuse disorders. Counties with low vulnerability scores, such as Charleston, may have high rates of drug crime or other risk factors but also have large numbers of police officers and medical personnel and substance abuse clinics. When discussing vulnerability among the counties in South Carolina, it is important to not only identify which counties are most vulnerable, but also try to identify what is contributing to these counties' vulnerability. Further maps go into more detail on the contributing factors of the ranking system.

Part II: Resource Inventory, Resource Gaps, and Jurisdictional Plan

2.a. Resource Inventory



*Resources reflect those available as of September 2019; for interactive map and full contact information for state-acknowledged HIV, HCV, sexually transmitted disease, and substance use disorder testing and treatment facilities, please visit gis.dhec.sc.gov/HIVLocator/.

The map above shows where the listed services are available across South Carolina in relation to vulnerability status:

- HIV testing (HIV tst)
- HIV treatment (HIV trt)
- HIV linkage and re-engagement services (HIV link)
- HCV testing (HCV tst)
- HCV treatment (HCV trt)
- Substance Use Disorder treatment (SUD trt)

For a complete listing of each agency/provider, location, and specific services provided, please see Appendix 1 – Resource Inventory.

2.b. Resource Gaps

As a country, every state has different challenges. This also applies at the county level, and South Carolina has a surplus of evidence to show this. With no true metropolitan areas, rurality is common; the disbursement of these areas into every sector of the state is uneven, as shown by this project and the generated maps. A large proportion of the counties that came up as highly vulnerable were resource deprived: they had fewer available services, lower proximity to population-dense areas, and lower per capita income. For example, the counties identified as having the greatest risk have an average rural percentage of 60.7; seven of the 9 counties are classified as being 50% or more rural. Further, the per capita income among the most vulnerable counties is on average \$21,480 compared to an average \$24,061 per capita income among the least vulnerable counties.

The state of South Carolina is challenged by the distribution of its populace and lack of adequate services within reasonable reach of its residents. This study has shown evidence that living in a rural area and having a reduced income can attribute to increased risk for HIV and HCV acquisition due to opioid use. Allocation of resources to the areas identified should be prioritized, due to the lack of access and availability of preventative programs and treatment options.

Jurisdictional Plan

2.c. Strategy Recommendations

Increased Naloxone distribution and overdose patient follow up

Naloxone (often identified by the brand names Narcan® and Evzio) is a medication used to treat opioid (including heroin, morphine, oxycodone, etc.) overdoses; it is an opioid antagonist that works by blocking opioid receptor sites in the nervous system. Naloxone can be administered by injection (intramuscular, subcutaneous, or intravenous) or intranasal spray; multiple doses can be used safely if the primary dose does not restore respiratory function, and naloxone has no effect if the person has not used opioids. This versatility allows nonmedical respondents, such as police officers or family members, to easily and effectively use naloxone when an overdose occurs. Given the ease of administration and safety of ingestion, naloxone has become a primary treatment of opioid overdose. In 2016, South Carolina passed legislation allowing for pharmacies to dispense naloxone without a patient-specific prescription. As a result, first responders, family members, care givers, not just opioid abusers themselves, can prepare for an overdose event. The benefits of this legislation would be maximized by increasing awareness of naloxone's availability to the community at large; a public awareness campaign would decrease ambiguity regarding the legality of naloxone possession, encourage education on naloxone administration techniques, and promote procurement among citizens concerned about family and friends currently abusing opioids.

Currently, South Carolina is expanding naloxone distribution to law enforcement officers through the LEON (Law Enforcement Officer Narcan) program, which provides Narcan to police officers and trains them on opioid overdose identification, treatment, and reporting. Since implementation in 2016, the LEON program has trained and equipped 9,763 officers across 202 agencies, and they continue to expand; total Narcan administrations equal 1,075 among 993 persons treated, with a 95.4% successful rate of opioid overdose reversal. 2019 Narcan administrations currently tally at 468, which is

more than all of 2018 (n=424). Fire departments across the state also have the option of enrolling in ROLL (Reducing Opioid Loss of Life), which provides education, training, and overdose reversal kits. Enrollment in ROLL includes 102 departments with 1,616 firefighters, and in 2019 the program has logged 37 Narcan administrations. All training and supplies are provided by DHEC free of charge to maximize utilization among the state's emergency services.

Another program being pilot tested in South Carolina is the Community Outreach Paramedic Education (COPE) program, a joint effort between paramedics and law enforcement that is focused on facilitating entry into treatment programs for patients who survived an overdose event. After a Narcan administration or opioid overdose-related hospital discharge, a paramedic and police officer follow-up with the overdose survivors at their residence to educate them and any household members on substance abuse treatment options. If the person is willing to enter treatment that day, they are escorted to a treatment facility and enrolled immediately, which removes the barrier of waiting that prohibits many from entering treatment (MacMaster 2005; Redko, Rapp & Carlson 2006). Only three agencies are currently a part of COPE, but SCDHEC is hoping to enroll more after evaluating the 2019 statistics on treatment utilization.

Increased medicated assisted treatment (MAT) access, particularly in rural areas

Medication-assisted treatment (MAT) for opioid use disorder, including opioid substitution therapy (OST), helps curtail transmission of HIV and HCV among PWID by replacing injection opioid use with administration of controlled level medication that alleviates withdrawal symptoms and psychological cravings. MAT is not simply replacing one drug for the other; rather, MAT allows for the cessation of illicit drug use while minimizing the negative physical and psychological consequences of withdrawal and usually includes additional therapy and behavioral modification strategies. Administration of MAT is closely supervised by a physician and may continue for as long as deemed necessary.

There are three medications currently approved for MAT of OUD: methadone, buprenorphine, and naltrexone. Each medication offers its own benefits and drawbacks. Methadone has been used for decades to successfully treat substance abuse disorders and is the only MAT option approved for use in pregnant and breastfeeding women. The biggest concern with methadone MAT is that methadone itself can become addictive, so administration (oral) is closely monitored (at least initially) and requires physical presence at a Substance Abuse and Mental Health Services Administration (SAMHSA)-certified opioid treatment program (OTP). This inhibits use among rural and poor populations, where daily transportation to and from the OTP site is unfeasible. Since methadone is the only option for pregnant and breastfeeding women and some patients require high levels of supervision during treatment, increasing the number of OTP offering methadone in rural and suburban settings should be a priority.

Naltrexone is another MAT treatment option and can be dispensed by any health care provider authorized to prescribe medications. For OUD, it is commonly administered as an extended-release injectable but requires a full 7-10 days of detoxification from opioids and may result in life-threatening conditions if drugs or alcohol are taken while on naltrexone. This is because naltrexone does not activate opioid receptors in the nervous system, as methadone and buprenorphine do, but blocks them; this can increase sensitivity to previously tolerable levels of opioids and alcohol. Therefore, close supervision of patient intake is required for naltrexone use and may not be a good option for patients with multiple relapse episodes or unstable conditions. In conjunction with therapy and good social support,

naltrexone is a safe (non-habit forming) option for OST and should be promoted as part of a comprehensive recovery plan.

The last FDA-approved medication to treat OUD is buprenorphine. While the chemical effects of buprenorphine are like those of methadone, buprenorphine has been approved for both prescribing and dispensing outside of certified OTPs; this greatly increases the availability and convenience of MAT to those with OUD in rural and suburban settings. Because buprenorphine is an opioid partial agonist which can produce the euphoric effects of opioid drugs, it has potential for misuse and abuse. To counteract this, buprenorphine is often combined with naloxone into tablets that when taken orally can safely satisfy cravings while blocking withdrawal; injection of crushed pills, however, results in onset of withdrawal and acts as a deterrent to misuse.

Currently, the federal government requires registration of health care professionals with SAMSHA's Center for Substance Abuse Treatment (CSAT) prior to any buprenorphine treatment. Registration for buprenorphine waivers is an approval process, and practitioners must wait up to 45 days after application submission for final determination. Once approved, the number of patients receiving buprenorphine from the provider is limited to 30; waivers to increase the number of patients receiving buprenorphine can be applied for after a year from the date of the initial application. Amendments to the current process, including shorter physician approval times and waiver distribution based on need and utilization, could increase timely access to care in areas where it is most needed, particularly in rural and underserved parts of the state.

Introduction of syringe service programs (SSPs) in South Carolina

While controversial, syringe service programs (SSPs), also known as needle and syringe programs (NSPs) or needle exchange programs (NEPs), are an evidence-based intervention that helps prevent the transmission of bloodborne infections by providing sterile needles/syringes to PWID at little to no cost. Currently, there is no South Carolina legislation allowing SSPs to operate legally; and while there is no law specifically prohibiting needle exchanges, getting caught with even one used needle could result in drug paraphernalia charges under current SC law. Additionally, federal funding was only recently allowed to be used to support SSPs, with the caveat that the money could not purchase needles or syringes; most state laws, including those of South Carolina, regulate the retail sale of syringes so that the purchase of syringes without evidence of a medical need is difficult. In combination, these factors create an environment that encourages the reuse and exchange of syringes among PWID and increases the likelihood of bloodborne infection transmission.

Despite the resistance to SSPs in America, the United Nations, World Health Organization, and American Medical Association have all endorsed SSPs as a cost-effective solution for managing HIV and hepatitis outbreaks among PWID (UNAIDS, Wodak & Cooney 2004, Seelye 1997). There is robust literature that supports SSPs not only for the attenuation of bloodborne infection transmission but also increased utilization of addiction treatment services (Fernandes et al. 2017; Strathdee et al. 1999). Rather than promote substance abuse, SSPs are often a point of contact between PWID and counselors and advocates, which over time has demonstrated increased acceptance to substance abuse treatment among PWID previously opposed to treatment in Vancouver, Canada and Sydney, Australia, where SSP operations are institutional and large-scale (Potier et al. 2014). Given the wealth of evidence that SSPs curb infection transmission and facilitate treatment efforts, this report would be remiss if it did not offer

legislative change to allow implementation of institutional, state-wide SSPs as a solution to bloodborne infection outbreaks resulting from unsterile needle usage.

Increased Hepatitis C testing

Currently, the CDC only recommends HCV testing for the following groups:

- Adults born between 1945-1965
- Current injection drug users
- Persons who have ever injected drugs
- Persons with certain medical conditions (i.e., received clotting factor concentrates prior to 1987, ever on long-term dialysis, have persistent abnormal alanine amino transferase levels, HIV positive)
- Recipients of transfusions or organs prior to 1992 or from a later identified HCV-positive donors
- Persons exposed occupationally by needle pricks, sharps, or mucus
- Children born to HCV-positive women

Persons with these behaviors or attributes such as: persons who use other drugs, who have tattoos and/or body piercings, have a history of multiple sex partners or sexually transmitted disease infections, those with a long-term HCV-positive partner, and recipients of any transplanted tissue currently not included on the list, are at higher risk of contracting HCV than the general population. In response to the increased cases of HCV observed nationally, the US Preventive Services Task Force (USPSTF) released a draft recommendation statement in September 2019 advocating for one-time HCV testing for all American adults, and repeat testing for high-risk groups. They recognize that the most important risk factor for HCV is injection drug use, and that the national opioid epidemic has spread HCV to previously low-risk populations.

Treatment options have improved, and early treatment is more cost-effective; increasing HCV testing in South Carolina is the first step to reducing the spread and eventually eradicating HCV in the state. Current surveillance methods of HCV do not differentiate between acute and chronic types well and reporting of both has been limited. Educating primary care providers on the symptoms of acute HCV, risk factors for HCV contraction, and benefits of early detection would improve state surveillance and, over time, decrease the number of new infections. In 2019, the South Carolina Department of Corrections (SC DOC) began testing and treating incarcerated persons for HCV infection; prison populations are at high risk for several diseases, including HCV, so the improved treatment plan will hopefully ameliorate the problem. SC DHEC is also funding a pilot program for rapid HIV/HCV testing of persons who receive naloxone to treat an overdose event; rapid testing takes 1-5 minutes and helps health officials identify those potentially spreading the infection among PWID. Ultimately, integration of HCV testing into standard blood panels across SC healthcare systems would yield the best-case ascertainment and allow health care providers the most opportunities to treat HCV.

Part III: Technical Notes

3.a. Stakeholder Input

SC Vulnerability Assessment - Stakeholders (Internal & External)	
Stakeholder	Organization
Ali Mansaray	DHEC - STD/HIV & Viral Hepatitis
Andrew Fogner	DAODAS - Epidemiologist
Antony Price	DHEC - STD/HIV, Intervention Specialist
Arnold Alier	DHEC - EMS &T
Brittany Vannort	SC Harm Reduction CoAI - Director of Outreach
Claire Youngblood	DHEC - Acute Disease Epi, Research Analyst
Clayton Catoe	Lancaster EMS
Daniela Nitcheva	DHEC - Vital Statistics
Danielle Henderson	DHEC - Health Improvement
Demetria Carswell	SCDHHS - Director of Enterprise Reporting
Elona Rhame	DHEC - Immunization
Emma Kennedy	DHEC - STD/HIV, HIV Surveillance Coordinator
Harley Davis	DHEC - PHSIS
Jim Maxwell	DAODAS - Statistician
Joe Lane	Sumter Police - Sgt.
Keneisha Whittington	DHEC - STD/HIV, HS
Kennard DuBose	DOC - Behavioral/Mental Health & Substance Abuse Services
Kenneth Polson	DHEC - EMS &T
Khosrow Heidari	DHEC - Drug Control, Senior Epidemiologist
Linda Bell	DHEC
Linda Brown	DAODAS
Marya Barker	DHEC- Acute Disease Epi
Maurice Adair	AID Upstate, Prevention Coordinator
Melanie Davis	DOC - Infection Control Officer
Natalia Rice	SLED - SCIBRS
Pam Davis	DHEC - STD/HIV, Lab Consultant
Teresa Foo	DHEC - Immunization
Terri Stevens	DHEC - Surveillance & Technical Support
Thomas VanDemark	Myrtle Beach Fire Dept.
Victor Grimes	DHEC - EMS &T
Zakiya Grubbs	DHEC - STD/HIV, CDC Assignee (HCV)
Sazid Khan	DAODAS
Kenric Ware	South University
Kabra Benford	ECCHC
Divya Ahuja	USC Med School
Eric Meissner	MUSC
Stephen Feetham	SCDHHS

Nandini Sen	DHEC
Meisha Thomas	CareSouth-Carolina
Susannah Smalls	Opioid Team, DHEC contractor
Katherine Richardson	DHEC

MINUTES - South Carolina Vulnerability Assessment (SC VA) Stakeholder's Meeting

March 1, 2019

I. Attendees

- Thank you to everyone who participated! If you were unable to physically attend or call in, we would still value your participation in future meetings and will continue to update you on the project moving forward.
- We had representatives from several DHEC departments (Viral Hepatitis, STD/HIV, Vital Records, Drug Control), DAODAS, EMS, Police/Fire, Opioid research team, SCDOC, SCDHHS, CareSouth Carolina, and South University (apologies to anyone I missed)
- If anyone is interested in connecting with someone from the meeting and were unable to get their contact information, please email me and I will forward along as needed.

II. SC VA Goals and Methods

- Goal of SC VA: To identify counties at high risk for both opioid overdose and blood-borne infection outbreaks (specifically HIV/HCV/HBV) associated with non-sterile drug injection
- Plan to do this by using a proxy variable (CDC and Tennessee (TN) used acute HCV cases) for injection drug use (IDU) and using statistically significant predictors (variables) to create a vulnerability score that lets counties be ranked from most vulnerable to opioid overdoses/blood-borne infections
- Briefly went over the methodology used by CDC for their nationwide assessment (2015) and TN's state-driven assessment (2017), with attention given to variable inclusion, model selection, and importance to state-specific predictors
- SC VA is also tasked with a gap analysis to identify areas of high risk with low resources for opioid/HIV/HCV prevention and treatment

III. Status Updates

- Currently assembling data; most is publicly available, discussed options for accessing data not open to public
- Susannah Smalls, lead of the Opioid Team in the Division of Population Health Data, gave an update of all the projects (past, current, and future) her team is undertaking and how they help address the gap analysis of the SC VA (see slide #18 for specifics).
- Highlighted new CDC funding opportunity (up to 8 million over 3 years) that allocated funds for community partners' prevention efforts

IV. Stakeholder's Roles

- Expectation of stakeholders is to attend as many 2-hour, quarterly meetings as possible to receive updates, inform analysis, and help disseminate findings of SC VA
- Project ends August 31, 2019

V. Roundtable Discussion

- IDU proxy variable
 - Discussed how reporting of HCV cases in SC makes it hard to distinguish acute and chronic cases
 - Talked about using HIV/AIDS cases with IDU listed as risk behavior, NARCAN administrations, and hospital admits for IDU-associated conditions (i.e., venous/arterial injury/urticarial, septicemia, cellulitis, etc.)
 - Agreed that HCV among young adults (<25 years) and hospitalization data were best proxies, following up with Claire Youngblood (Acute Disease Epidemiology) and DAODAS/SCDHHS (Linda Brown/Andrew Fogner/Sazid Khan and Stephen Feetham) this week
- List of Potential indicators
 - A list of all variables considered by CDC/TN was provided to attendees for review; due to time constraints, agreed that attendees would look over at their convenience and provide feedback on variables that they felt needed to be included/excluded
- Gap analysis components
 - Required Gap analysis components include: comprehensive list of SC HIV/HCV/HBV testing sites, referral networks for HIV/HCV/HBV, pharmacies providing Naloxone
 - Asked attendees to consider other resources they would like included
 - Highlighted that other health issues (e.g., syphilis) are on the rise at least in part due to IDU, may include in analysis if time permits

VI. Summary & Next Steps

- New Opioid funding provided opportunity to improve HCV surveillance in SC; suggested rapid testing (HIV/HCV) of suspected overdose patients by EMS
- Coordinate with DAODAS/SCDHHS/DHEC data stewards to get best IDU proxy data
- Finalize all data requests and compile into one datasheet for analysis
- By next meeting, hope to have preliminary data available (maps of each predictor across SC counties, parsimonious predictive model)

MINUTES - South Carolina Vulnerability Assessment Stakeholder's Meeting

June 20, 2019

- 2 new team members:
 - Samira Khan – Project Coordinator
Khans1@dhec.sc.gov

- Joshua Mercadel – Analyst
mercadja@dhec.sc.gov
 - Most of the data complied
 - Maps on gathered data presented; slides have been updated to reflect data source, variable definition (where unclear), and any anticipated changes to variable
 - All map scales defined by Jenks natural breaks
 - Challenges in regression modeling discussed; presented alternative approach that uses county's calculated Z-scores to assess variability by both domain and overall
 - Suggested domains: infection, drug use, access to care, Sociodemographic, and geographic
 - Discussed importance of ensuring proper directionality when developing scores
 - Vulnerability Assessment Plan
 - Written report that establishes methodology, presents findings, and offers suggestions to address prevention and intervention gaps
 - Stakeholder's ideas for addressing gaps discussed: needle exchange programs, etc.
 - Office of Rural Health has (very) similar project already completed (see email attachment)
 - Dissemination
 - Planned presentation for SC HIV/STD/Viral Hepatitis Conference Oct 2019
 - Governor's Opioid Summit
 - Postings on justplainkillers.com and SC DHEC websites
 - Outreach events in vulnerable counties
 - Next meeting – August 2019
 - Applied for no-cost extension, expect project to wrap in November 2019
 - Next meeting will be presentation of findings and discussion of additional gap needs and dissemination efforts
-

MINUTES - South Carolina Vulnerability Assessment Stakeholder's Meeting

June 20, 2019

- Presented final methodology and results of SC Vulnerability Assessment
 - Methodology
 - Due to modelling issues, went with a Social Vulnerability approach
 - Identified 'indicator variables': data with known relationship to drug use, HIV incidence/prevalence/transmission, HCV incidence/prevalence/transmission, medical and emergency services, and treatment/prevention services for drug use/HIV/HCV
 - Calculated scores for 3 domains: risk, mitigation, and overall vulnerability
 - Risk: included 12 variables with association to drug use/HIV/HCV (for list of variables, see PowerPoint)

- Mitigation: included 12 variables with association to treatment/prevention of drug use/HIV/HCV (for list of variables, see PowerPoint)
 - Overall Vulnerability: Risk score – Mitigation score; high scores a function of more risks and fewer mitigators
 - Results (for full results, see PowerPoint)
 - Risk ranks
 - Mitigation Ranks
 - Overall Vulnerability
 1. Williamsburg
 2. Hampton
 3. Marion
 4. Georgetown
 5. Horry
 6. Lee
 7. Chester
 8. Lancaster
 9. Union
- Jurisdictional Plan
 - Part of report that prioritizes problems and offers solutions
 - Analysts' suggestions:
 1. Increased Naloxone distribution
 2. Increased access to medicated assisted treatment (MAT)
 3. Introduction of syringe service programs (SSPs)
 4. Improve acute HCV surveillance
 - Stakeholders' suggestions:
 - Provide education to primary care providers (PCPs) on risk factors and symptoms of acute HCV
 - Expand state funding for MAT coverage
 - Amend buprenorphine waiver program to increase number of providers and waiver utilization
 - Decrease stigma of drug abuse
 - Increase HIV/HCV testing
 - Focus on PCPs as diagnostic and treatment point for both substance abuse and bloodborne infection
 - Use criminal justice system as a point of treatment rather than punishment
 - Offer estimates for number of people to be served
 - Overall suggestion: offer possible solutions/alternatives for each target area presented

- Overall suggestion: look to community business and organization partners for solutions
 - Dissemination
 - Presenting at:
 - *NEW* DHEC CSD meeting (Sept 19)
 - Internal Opioid CoAg group (Oct 3)
 - SHAPE meeting (Oct 9)
 - SC HIV/STD/Viral Hepatitis Conference (Oct 16)
 - Postings on justplainkillers.com with link from SC DHEC website
 - Outreach events in vulnerable counties
 - Still planning
 - Suggested: DHEC Data Walks (TBD)
 - Feedback
 - Attendees completed feedback forms for suggestions on future vulnerability assessments
-

We would like to specifically acknowledge our Stakeholders for donating their time, expertise, and energy on this project; their contributions were invaluable, as is their commitment to reducing substance abuse and bloodborne infection transmission.

3.b. Methods

The South Carolina Vulnerability Assessment (SC VA) was informed by several resources. Funded on NCHHSTP's Opioid Crisis CoAg (Grant TP18-1802-Opioid Supplemental) and guided by the Centers for Disease Control and Prevention, the intended methodology was meant to closely follow that of Van Handel, et al. (2016) and Rickles, et al. (2017), who used counts of acute hepatitis C virus (HCV) as a proxy for injection drug use in Poisson regression analyses to predict counties with high risk of injection drug use (IDU) and incident human immunodeficiency virus (HIV) and HCV infections resulting from needle sharing among persons who inject drugs (PWID).

To that end, 26 variables were pulled at the county level from mostly publicly available sources; hospitalization data and internal SC Department of Health and Environmental Control (DHEC) data were obtained with permission through data sharing agreements. Table 1 lists all the variables included in the SC VA, where the data was obtained, and the year data was collected. Decisions on variable inclusion were a multistep process, where relevance, data quality, and correlations between other indicators and possible outcomes were considered. Further detail in indicator selection can be found later in this section.

Table 1: Indicator Source, Format & Year

Indicator	Source	Type & Year
Percent Unemployed	ACS	%, 2017
Rx Drugs per 100,000	SCRIPTS	Rate, 2017
Drug Deaths per 100,000	SC DHEC – Vital Statistics	Rate, 2017
HIV Incidence per 100,000	SC DHEC - STD/HIV/AIDS	Rate, 2017
Percent Overdose due to Opioids	RFA	%, 2017
Naloxone per 100,000	RFA	Rate, 2017
Drug Crime per 100,000	SLED	Rate, 2017
Endocarditis per 100,000	RFA	Rate, 2017
Acute HCV per 100,000	SC DHEC – STD/HIV/AIDS	Rate, 2017
Percent Rural	CHR	%, 2017
HCV HIV Difference	Derived from SC DHEC - STD/HIV/AIDS	Rate difference, 2017
Opioid Medicaid per 100,000	SAMHSA	Rate, 2017
IDU HIV prevalence per 100,000	SC DHEC - STD/HIV/AIDS	Rate, 2017
Per Capita Income	ACS	Population Average, 2017
Substance Abuse Clinics	SAMHSA	Rate, 2017
EMS personnel per 100,000	SC DHEC - EMS	Rate, 2017
Population Density	ACS	Raw count, 2017
Mental Health Providers per 100,000	SAMHSA	Rate, 2017
Buprenorphine-waivered Drs per 100,000	SAMHSA	Rate, 2017
Law Enforcement Officers per 100,000	SLED	Rate, 2017
Hospitals	SCHA	Raw count, 2017

Primary Care Providers per 100,000	SAMHSA	Rate, 2017
Highway	SC DOT	Dichotomous (Y/N), 2017
Urgent Care	NBC News report/Google	Dichotomous (Y/N), 2014/2019
Opioid Treatment Clinics per 100,000	SAMHSA	Rate, 2017
Mental Health Clinics per 100,000	SAMHSA	Rate, 2017
Abbreviations: ACS=American Community Survey, CHR=County Health Rankings, RFA=SC Revenue and Fiscal Affairs Office, SAMHSA=Substance Abuse and Mental Health Services, SC DHEC=South Carolina Department of Health and Environmental Control, SC DOT=South Carolina Department of Transportation		

It became clear after discussing the SC surveillance protocol for reporting HCV that most positive HCV tests are classified as chronic HCV, because the acute designation requires submission of a note of symptoms and/or diagnosis from a healthcare provider with submitted lab testing. Often, acute HCV symptoms are unnoticed or ignored by both patients and healthcare providers (Sagnelli et al 2014), which contributes to the underreporting of acute HCV in SC. Data on chronic HCV is more robust than acute HCV in SC, so using counts of chronic HCV in persons aged <40 years was considered, but ultimately rejected due to problems with fitting statistical models. Unaltered chronic HCV data also had model fit problems, as did models fit using counts of opioid overdose deaths and infective endocarditis cases.

The models considered were Poisson and Negative Binomial regression models, which model the number of predicted events (in this case, HIV/HCV outbreaks) given certain criteria. First, each considered proxy outcome (acute HCV cases, all HCV cases, opioid overdose deaths, infective endocarditis cases) were univariately modeled by the fifteen indicators used by Van Handel, et al. to explore model fit and to assess each indicator's association with the outcome of interest. Model fit statistics for both Poisson and negative binomial models were poor, and estimates of associations (i.e., beta coefficients) were close to 0 (range: -0.8 to 0.5, >80% between -0.1 and 0.1). Such small effect sizes, combined with poor model fit, prompted a search for alternative methods.

After considering these issues with CDC science officers and statistical consultants, as well as other states experiencing similar methodological issues, the decision was made to take a Social Vulnerability approach. The Social Vulnerability Index (SVI) was created to identify socially vulnerable populations and rank US census tracts according to their ability to respond to and recover from a disaster (natural or otherwise) based on the resident population's demographics. It ranks four domains (Socioeconomic Status, Household Composition & Disability, Minority Status & Language, Housing & Transportation) based on 2-5 demographic indicators in addition to Overall Vulnerability, which aggregates all the indicators into a single summary rank. A complete description of the Social Vulnerability Index methodology is detailed in the 2011 article by Flannagan et al.

This vulnerability index serves a similar purpose, in that it identifies geographic areas at risk for the specific disasters of overdose and bloodborne infection outbreaks based on each area's resident population, precipitating events, and available aid services. The Overdose and Bloodborne Infection Index (OBII) includes 2 domains, one to quantify and rank each SC county's risk of overdose and one to

quantify and rank each SC county's services and ability to prevent and treat overdose and bloodborne infection. When approached this way, overall vulnerability become a function of how high a county's risk is minus how many services to prevent and treat are in that county:

$$\text{Overall Vulnerability} = \text{Risk Factors} - \text{Mitigating Factors}$$

We felt it important to have an equal number of risk factors and mitigating factors, so that in theory, a county's overall vulnerability could be 0, representing a situation where a county's risk of overdose and bloodborne infection outbreak is equal to its ability to treat such events. It is also important to note that a negative vulnerability score is also possible; this indicates that a county's ability to respond to an outbreak event is greater than its risk.

The decision to include each indicator was a combination of evidence from the Poisson and Negative Binomial exploratory regressions (i.e., magnitude of beta coefficient), stakeholder input (i.e., singled out as important to include), and logistic considerations (i.e., reciprocal variables). While not a perfect reciprocal match, each risk factor identified as important by either Stakeholders or analyses was then matched with a mitigating factor that would counteract that risk. For example, the risk 'Drug Crime per 100,000 population' was matched with 'Law Enforcement Officers per 100,000 population'. This was done to approximate balance across the risks and mitigators. The list of Risks, along with their Mitigating counterparts is below.

Table 2: Matched Risk to Mitigator Variables

Risks	Mitigators
% Unemployed	Per Capita Income
Rx Drugs per 100,000	Substance Abuse Clinics per 100,000
Drug Deaths per 100,000	EMS personnel per 100,000
HIV Incidence per 100,000	Population Density
% Overdose due to Opioids	Mental Health Providers per 100,000
Naloxone per 100,000	Buprenorphine-waivered Drs per 100,000
Drug Crime per 100,000	Law Enforcement Officers per 100,000
Endocarditis per 100,000	Hospitals
Acute HCV per 100,000	Primary Care Providers per 100,000
% Rural	Highway (Y/N)
HCV HIV Difference	Urgent Care (Y/N)
Opioid Medicaid per 100,000	Opioid Treatment Clinics per 100,000
IDU HIV prevalence per 100,000	Mental Health Clinics per 100,000

In order to rank each county on its risk, mitigation, and overall vulnerability, the decision was made to calculate a z-score for each variable by county. A z-score is a standardized score that relates each county's indicator value to how many standard deviations away it is from the indicator's mean value. The formula is shown below:

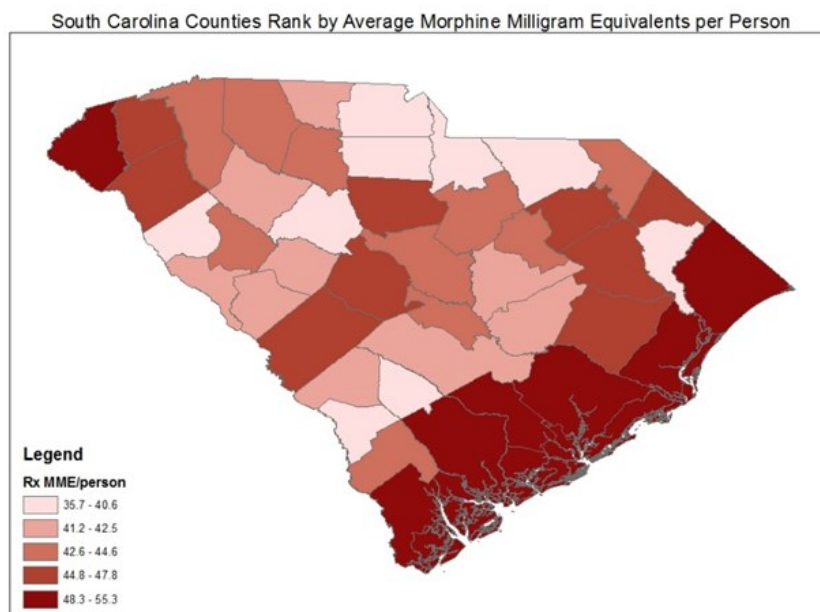
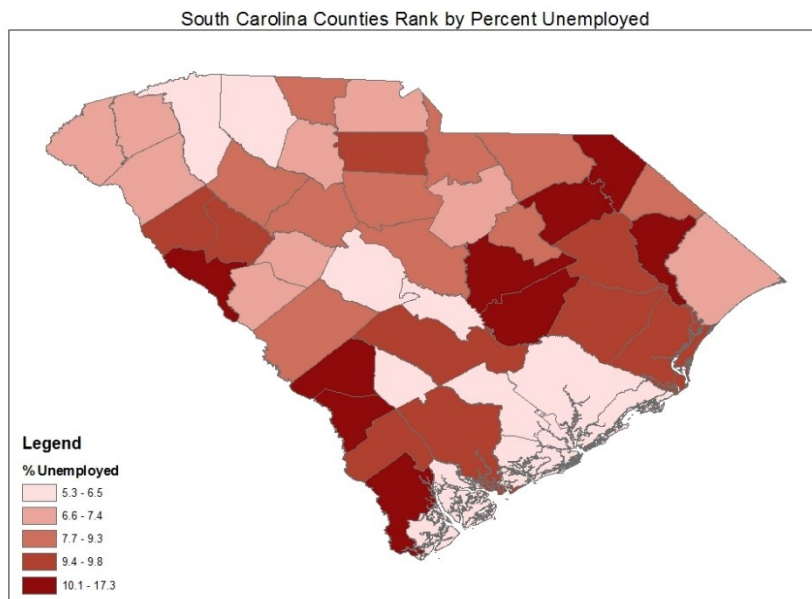
$$Z = \frac{x - \bar{x}}{s}$$

Where x equals the county's indicator value, x bar equals the mean indicator value for all counties, and s equals the standard deviation of the indicator's distribution. Standardizing each indicator allows for

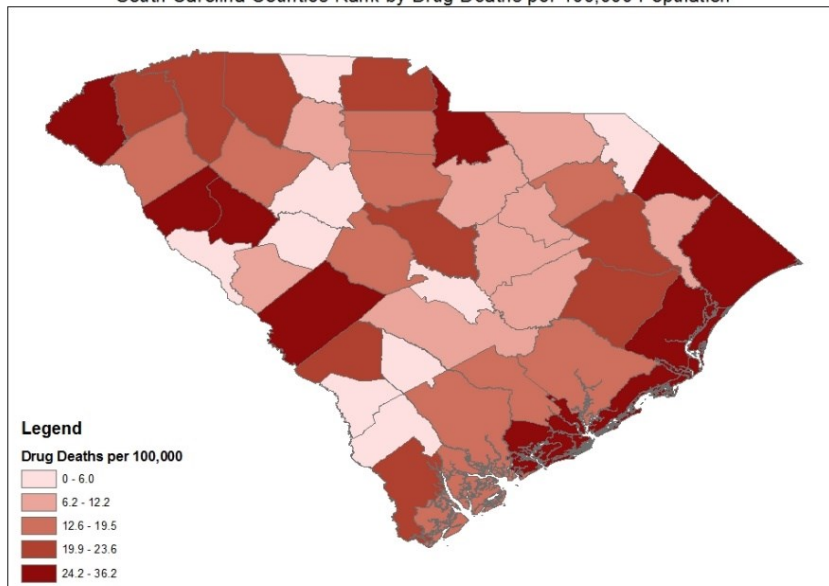
intradomain addition and interdomain subtraction by scaling each variable into a unitless value that represents the direction and relative magnitude of that county to the mean value (with z-scores, the mean always equals zero). Z-scores were calculated for all risk and mitigator indicators, then summed by county to create the Risk and Mitigation scores, respectively. The Overall Vulnerability score was, as stated, simply the Risk score minus the Mitigation score. These scores were then ordered from highest to lowest, with the highest in each category receiving a rank of '1' and the lowest receiving a rank of '46' to convey that the county in each domain with the highest score represented the county with the highest level of risk, resources, and overall vulnerability to overdose and bloodborne infection outbreak. These ranks were then categorized into 'high' (ranks 1-9), 'above average' (ranks 10-18), 'average' (ranks 19-28), 'below average' (ranks 29-37), and 'low' (ranks 38-46) to focus attention on counties with the most risks and/or lowest resources.

Preliminary analyses and ranks were derived using SAS® 9.4 (SAS Institutes Inc., Cary, NC); all maps were generated using ArcGIS® ArcMap™ 10.7 (Esri®, Redlands, CA).

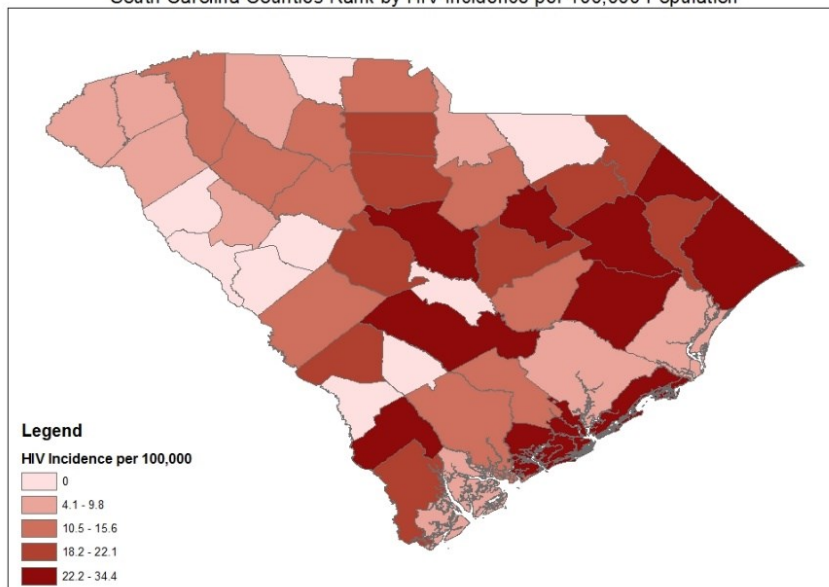
Risk Indicators



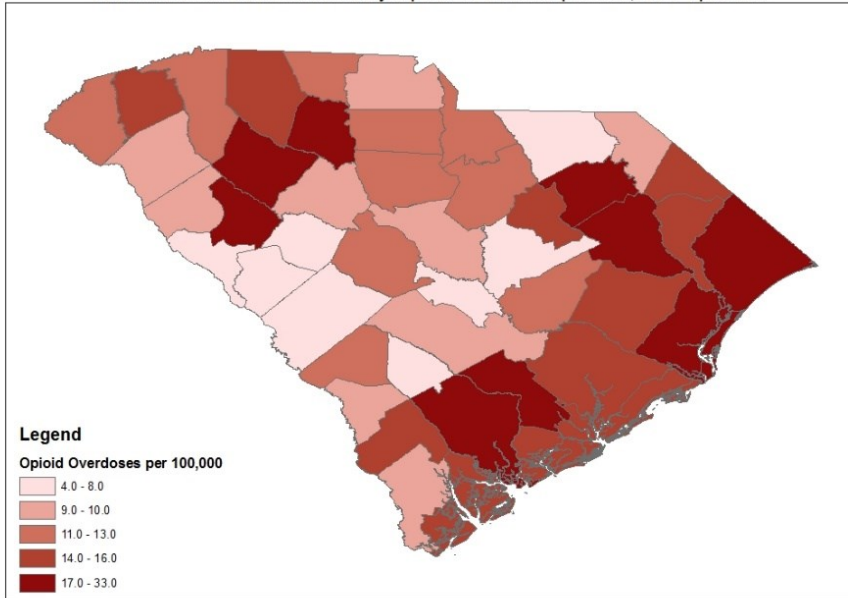
South Carolina Counties Rank by Drug Deaths per 100,000 Population



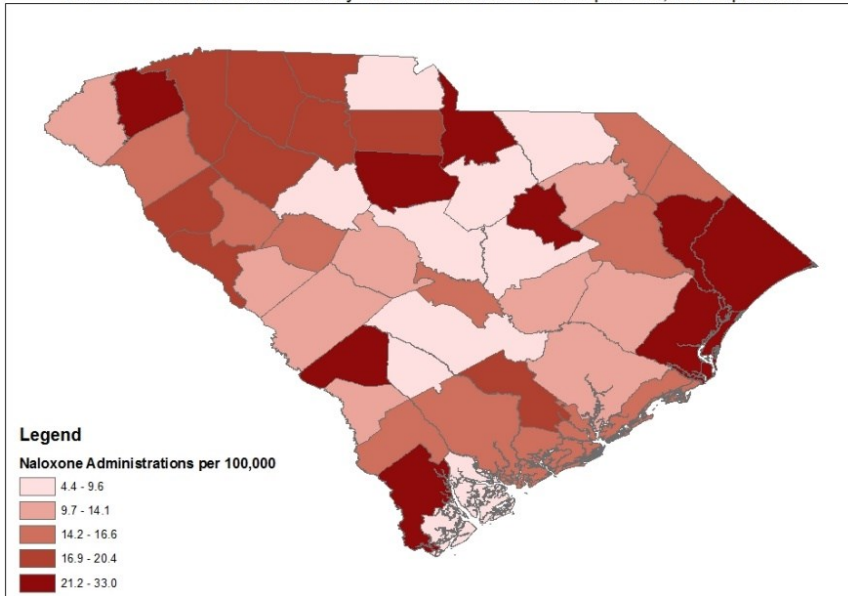
South Carolina Counties Rank by HIV Incidence per 100,000 Population



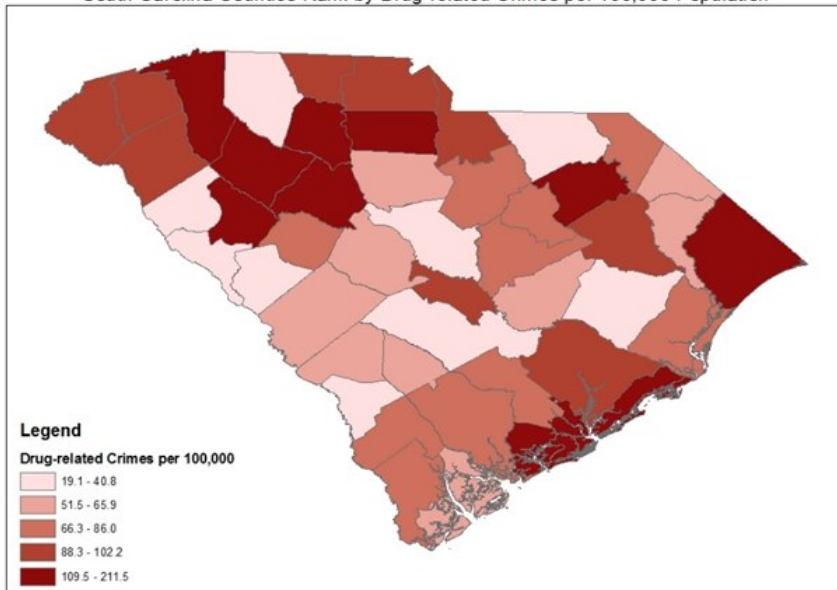
South Carolina Counties Rank by Opioid Overdoses per 100,000 Population



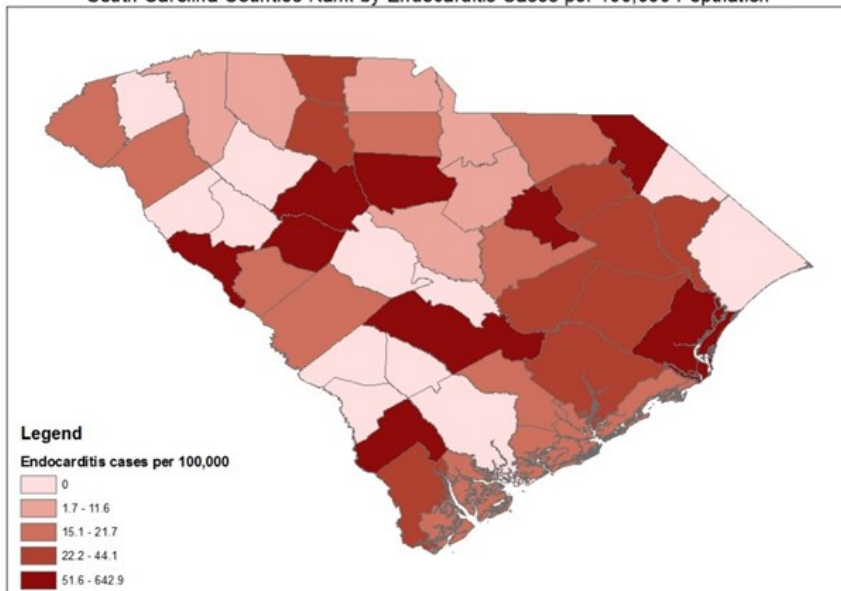
South Carolina Counties Rank by Naloxone Administrations per 100,000 Population



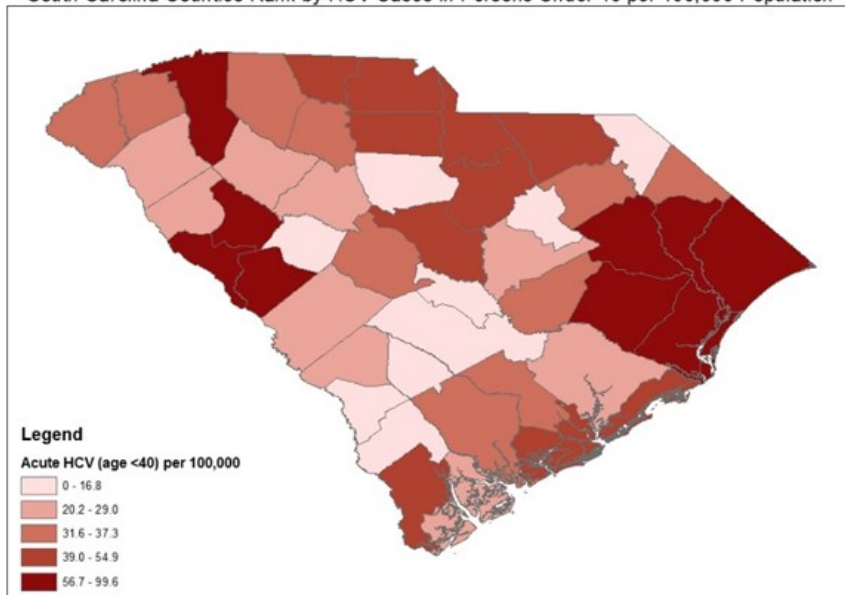
South Carolina Counties Rank by Drug-related Crimes per 100,000 Population



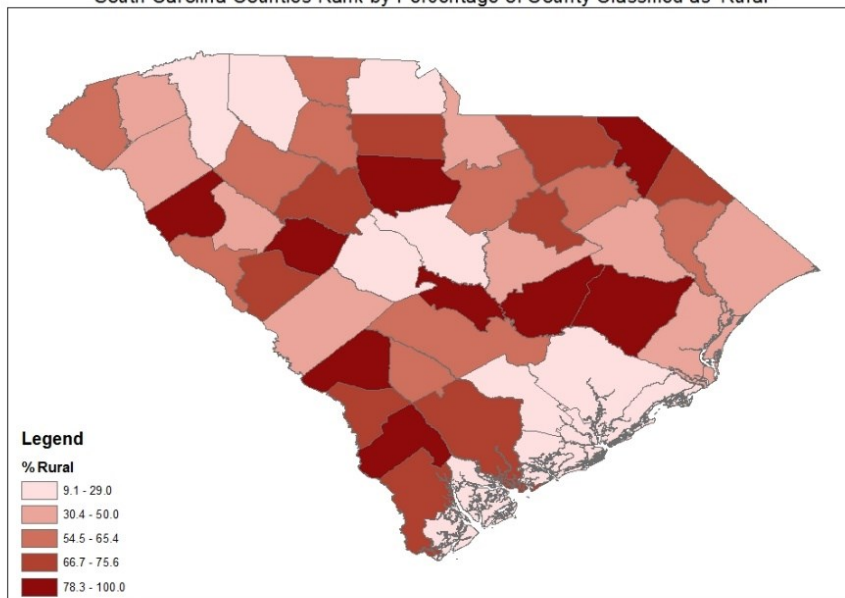
South Carolina Counties Rank by Endocarditis Cases per 100,000 Population



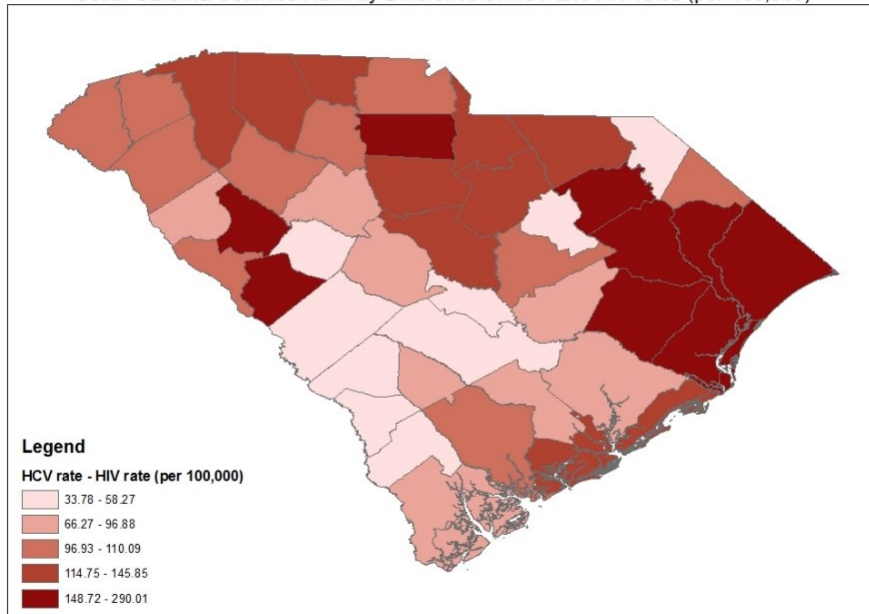
South Carolina Counties Rank by HCV Cases in Persons Under 40 per 100,000 Population



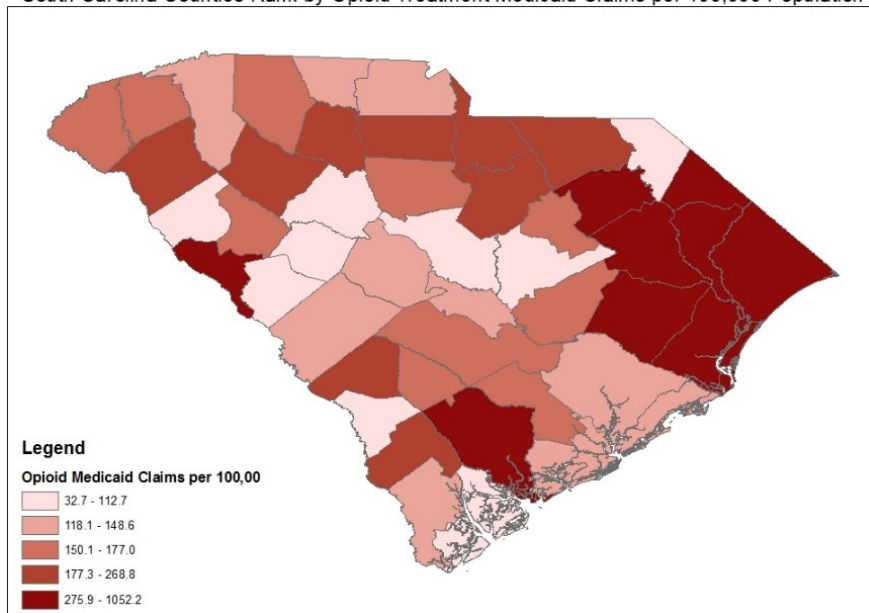
South Carolina Counties Rank by Percentage of County Classified as 'Rural'



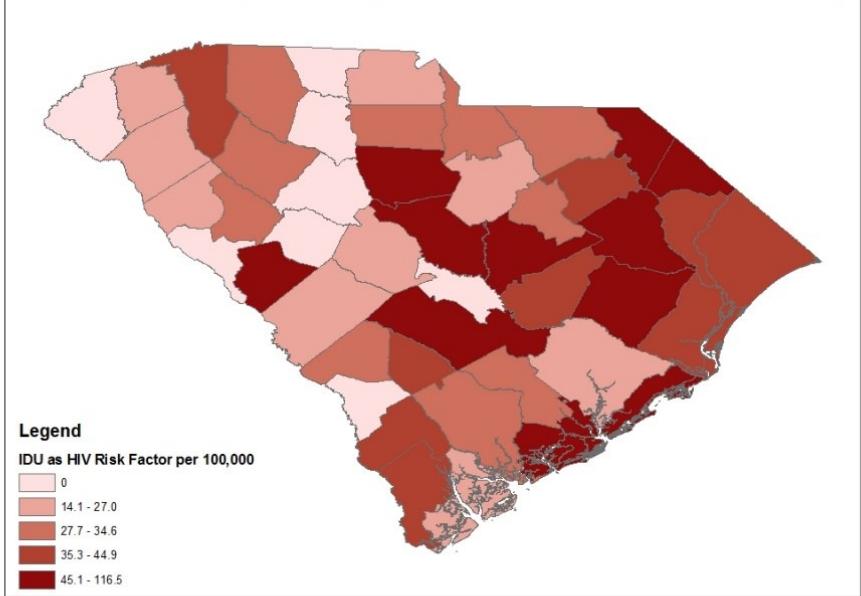
South Carolina Counties Rank by Difference of HCV and HIV rates (per 100,000)



South Carolina Counties Rank by Opioid Treatment Medicaid Claims per 100,000 Population

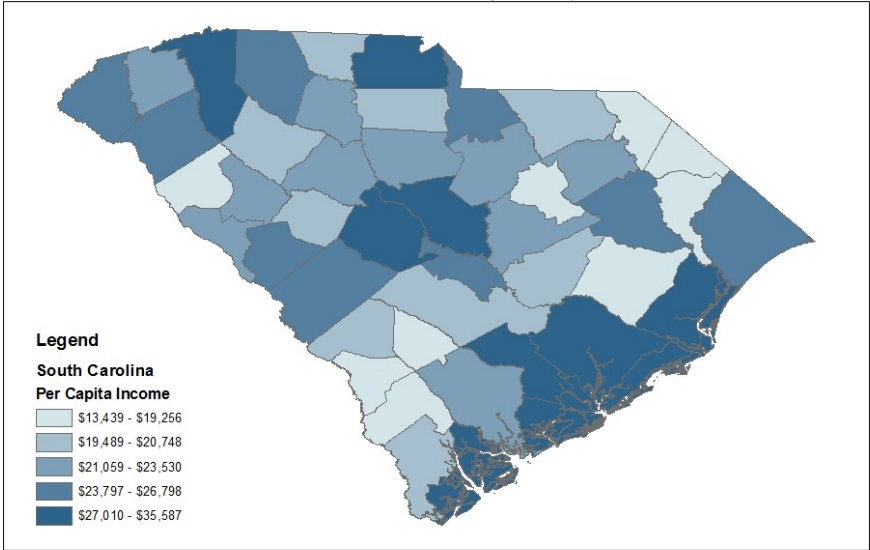


South Carolina Counties Rank by Reported Injection Drug Use as HIV Risk Factor per 100,000 population

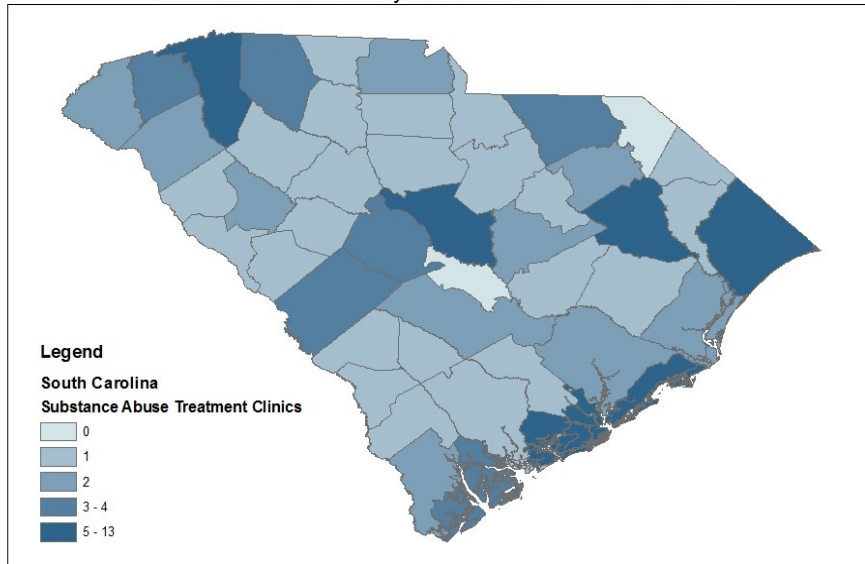


Mitigation Indicators

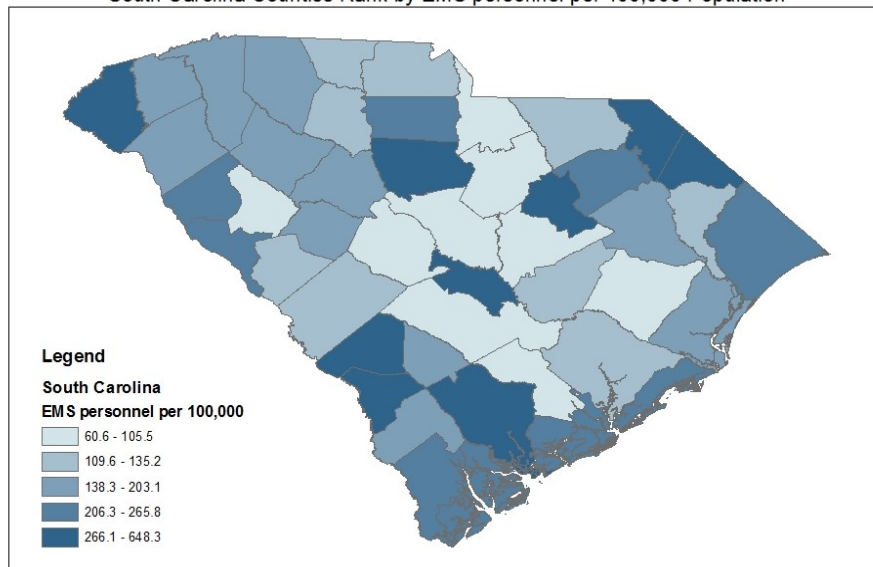
South Carolina Counties Rank by Per Capita Income



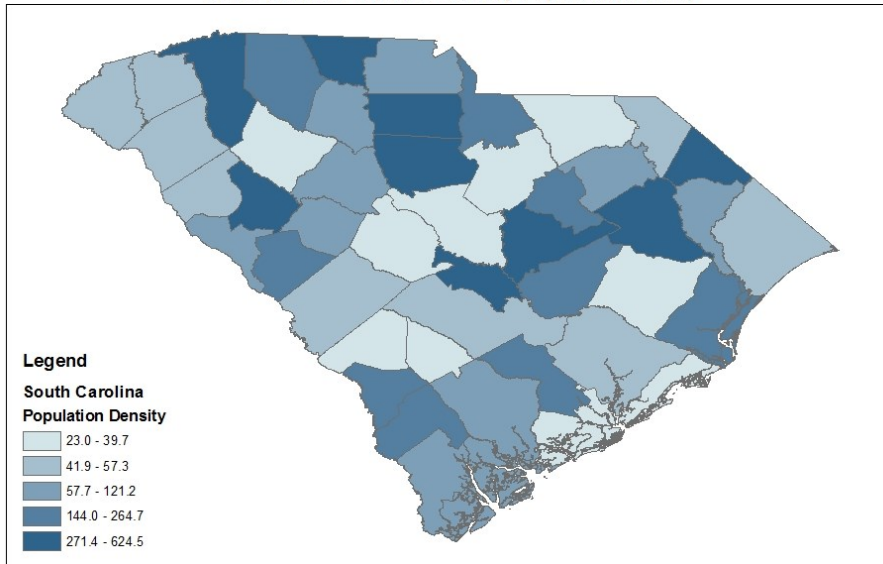
South Carolina Counties by Substance Abuse Treatment Clinics



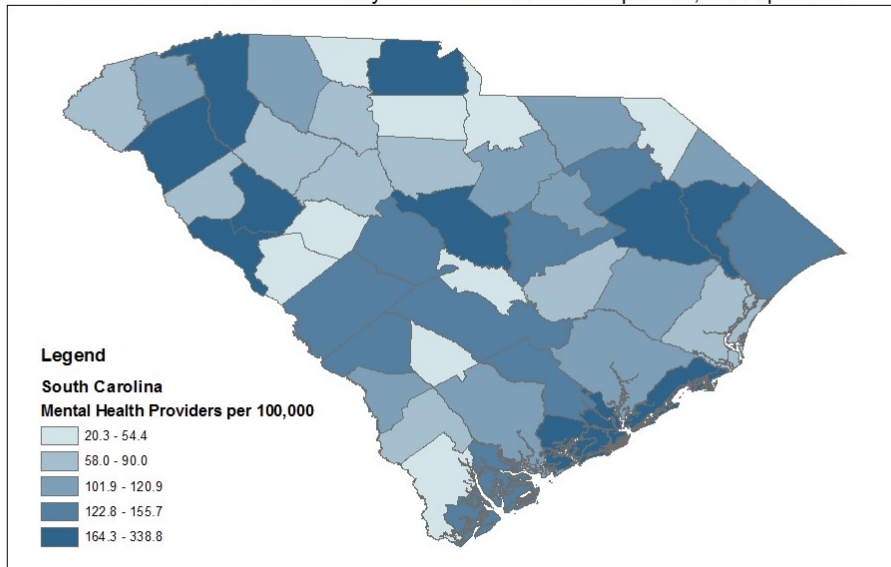
South Carolina Counties Rank by EMS personnel per 100,000 Population



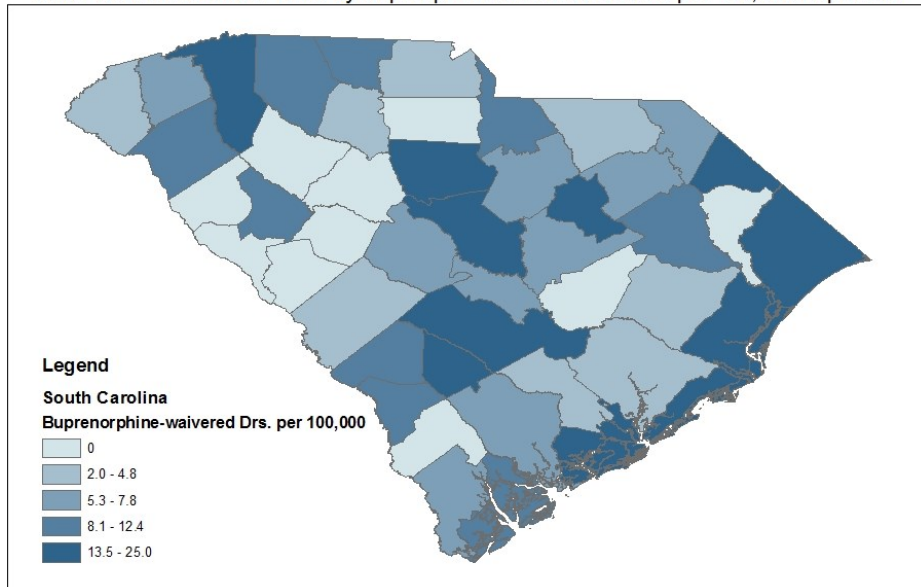
South Carolina Counties Rank by Population Density



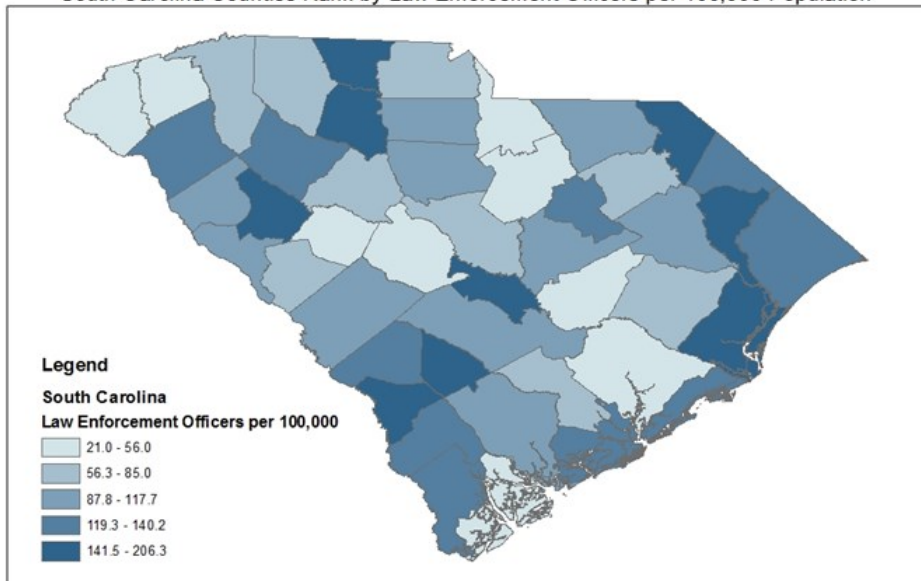
South Carolina Counties Rank by Mental Health Providers per 100,000 Population



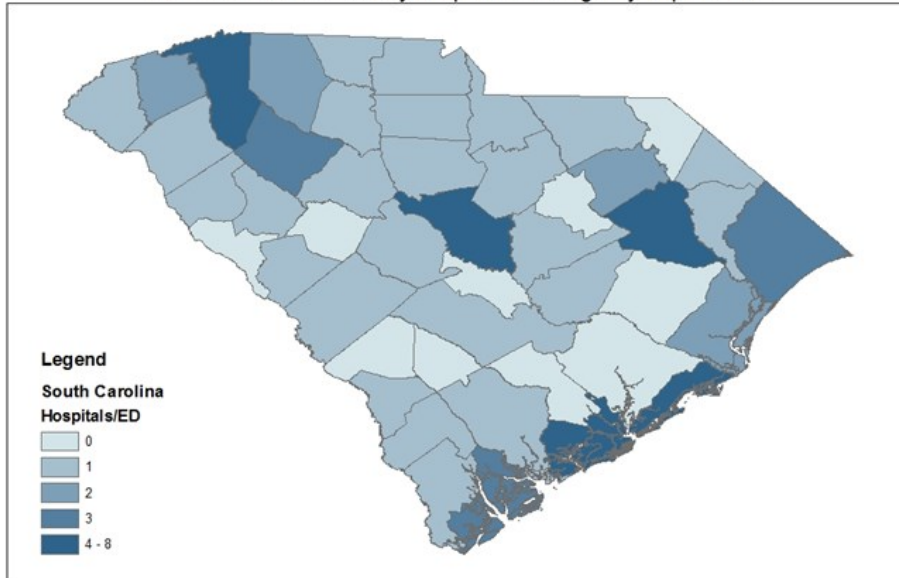
South Carolina Counties Rank by Buprenorphine-waivered Doctors per 100,000 Population



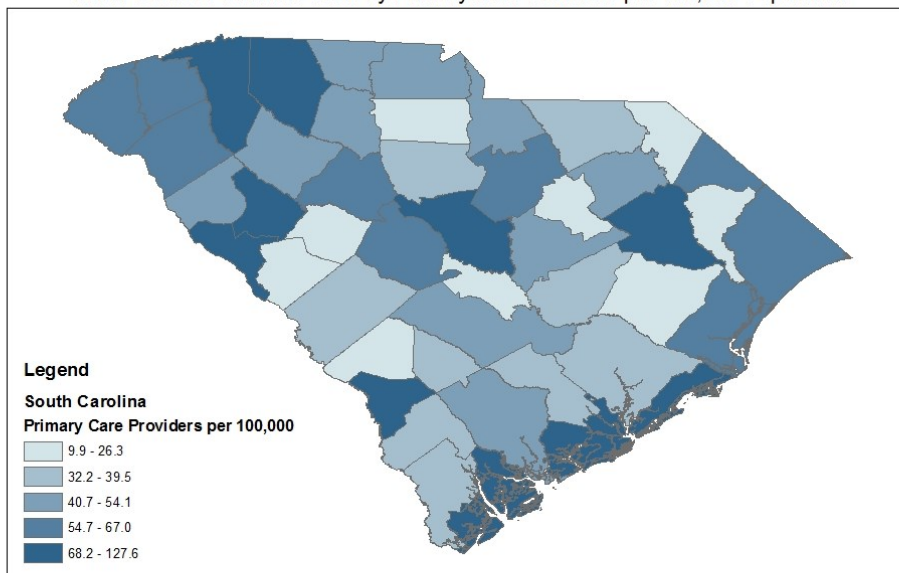
South Carolina Counties Rank by Law Enforcement Officers per 100,000 Population



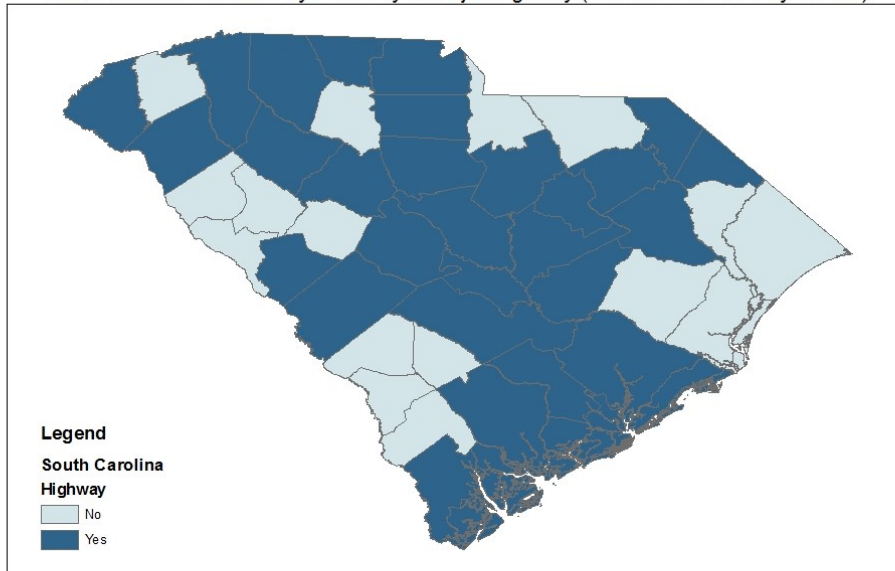
South Carolina Counties by Hospitals & Emergency Departments



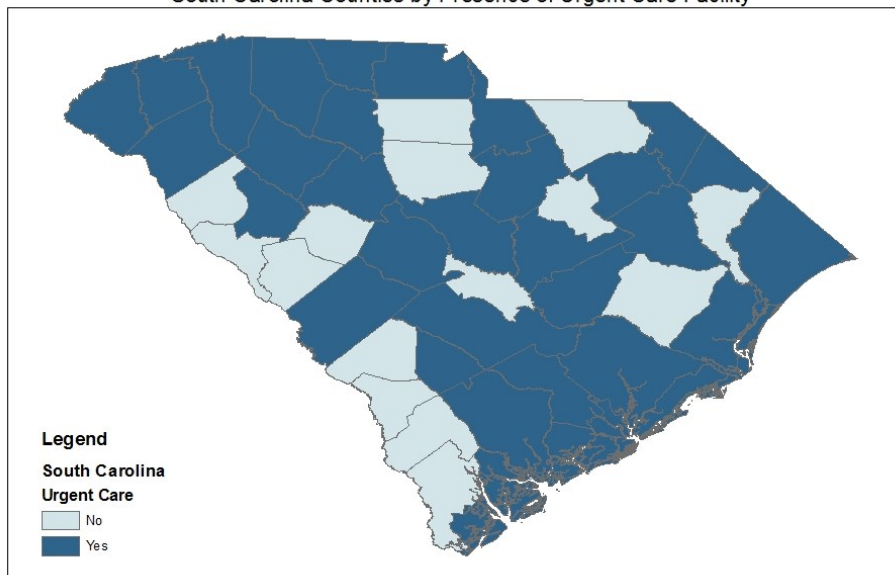
South Carolina Counties Rank by Primary Care Providers per 100,000 Population



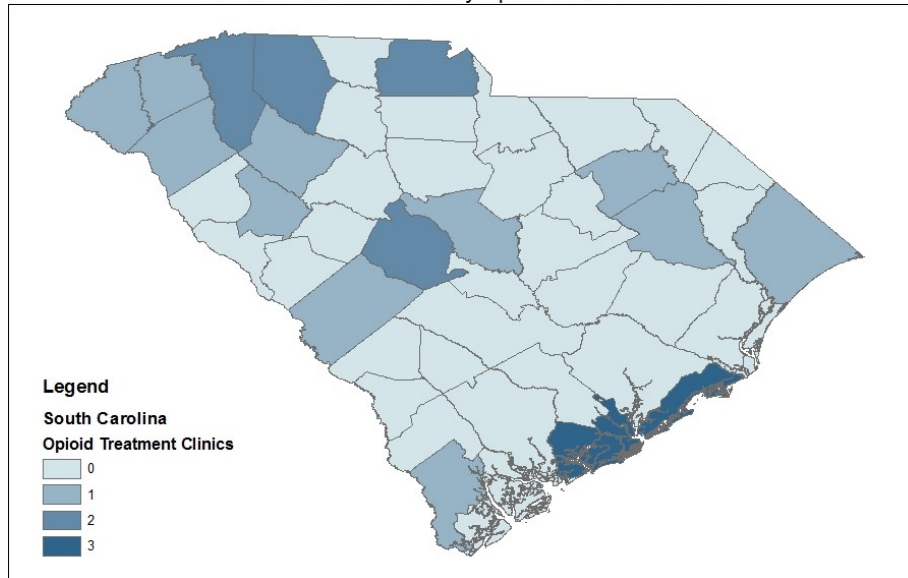
South Carolina Counties by Proximity to Major Highway (<5 miles from County Border)



South Carolina Counties by Presence of Urgent Care Facility



South Carolina Counties by Opioid Treatment Clinics



South Carolina Counties Rank by Mental Health Providers per 100,000 Population

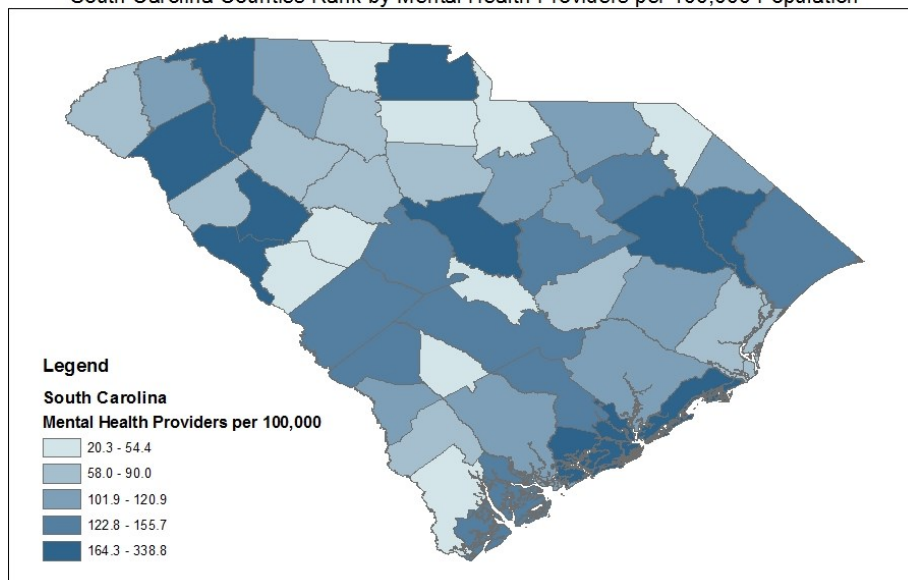


Table 3: County Ranks for each Risk Indicator, Mitigating Indicator, and Overall Vulnerability

Name	Risk Factors (High is Bad)													Mitigating Factors (Low is Bad)													Summary Scores		
	% Unemployed	Rx MME	Drug Mortality	HIV Incidence	Drug Crimes	Opioid Overdoses	Naloxone Admins	Endocarditis Cases	Acute HCV	% Rural	HCV - HIV	QUD Medicaid Claims	IDU among HIV +	Population Density	Per Capita Income	Buprenorphine Drs.	Opioid Treatment Centers	SUD Treatment Center	Mental Health Centers	Highway Access	Urgent Care Available	Primary Care Providers	Mental Health Providers	Hospitals/Eds	Police Officers	EMS personnel	Risk (High is Bad)	Mitigation (Low is Bad)	Vulnerability (High is Bad)
Abbeville	18	41	3	38	39	31	17	35	37	7	35	40	35	34	39	36	17	12	8	N	N	23	36	12	20	13	35	39	22
Aiken	21	17	7	26	30	41	31	20	35	34	38	35	33	16	12	29	6	32	21	Y	Y	32	15	12	19	35	39	16	35
Allendale	1	45	42	38	46	31	36	35	42	16	43	42	39	46	46	12	17	1	38	N	N	8	21	12	3	4	45	20	41
Anderson	34	16	21	32	17	31	20	25	31	33	24	17	32	9	16	15	6	41	32	Y	Y	10	9	12	11	20	33	9	37
Bamberg	38	46	42	38	33	43	46	35	45	28	34	21	16	40	38	9	17	4	38	N	Y	36	43	37	2	22	46	29	42
Barnwell	9	31	18	15	32	20	9	35	30	4	39	14	24	38	35	16	17	9	6	N	N	42	14	37	18	2	20	27	17
Beaufort	41	9	23	34	36	18	41	28	29	42	33	45	36	7	2	12	17	28	19	Y	Y	7	12	5	42	14	42	5	43
Berkeley	40	7	28	34	11	10	29	17	32	38	37	30	34	12	9	30	17	41	32	Y	Y	33	26	37	46	33	32	36	26
Calhoun	38	28	42	38	12	44	25	35	40	1	41	29	39	39	15	22	17	45	2	Y	N	43	46	37	8	1	44	19	39
Charleston	46	5	6	9	7	14	27	22	13	45	17	37	5	3	1	1	32	27	Y	Y	1	1	1	12	12	15	1	46	
Cherokee	26	34	41	38	13	25	14	16	16	23	12	32	39	18	32	11	17	32	38	Y	Y	28	39	12	9	37	37	28	31
Chester	10	44	25	15	8	20	18	23	17	14	6	13	28	31	31	36	17	17	15	Y	N	39	44	12	23	15	18	38	7
Chesterfield	21	38	33	38	38	40	43	19	18	11	11	10	27	28	36	35	17	5	38	N	N	35	28	12	27	32	41	42	20
Clarendon	5	30	31	20	29	20	37	14	23	3	29	26	18	30	30	36	17	21	17	Y	Y	37	30	12	45	36	22	40	11
Colleton	16	6	26	27	23	4	21	35	19	10	27	7	20	42	28	27	17	23	4	Y	Y	24	24	12	28	9	13	21	16
Darlington	4	14	27	13	6	3	30	18	26	25	8	8	12	20	26	25	6	20	16	Y	Y	21	18	8	36	11	5	15	12
Dillon	20	15	9	8	37	18	22	35	22	15	21	2	10	24	45	6	17	16	13	Y	Y	18	27	12	17	5	12	14	19
Dorchester	42	7	20	24	24	5	16	27	28	43	30	24	25	10	8	33	17	44	27	Y	Y	29	16	37	31	45	27	31	25
Edgefield	30	36	34	38	45	44	33	21	6	12	3	44	1	33	17	36	17	13	9	Y	N	38	40	12	37	29	25	41	13
Fairfield	19	18	19	10	34	20	1	3	43	9	15	25	8	44	24	3	17	10	7	Y	N	30	31	12	26	7	6	18	10
Florence	16	10	10	5	10	7	25	15	7	32	9	6	7	13	18	17	6	11	19	Y	Y	4	6	4	25	21	4	4	29
Georgetown	15	1	1	29	26	1	7	4	4	30	7	4	14	25	6	5	17	15	22	N	Y	12	33	8	1	18	1	13	4
Greenville	45	25	17	23	9	25	13	32	9	44	13	31	19	1	5	7	2	23	32	Y	Y	3	5	1	35	24	26	2	45
Greenwood	12	22	8	31	4	8	24	35	3	31	4	23	21	17	22	14	6	21	25	N	Y	5	4	12	5	40	7	7	24
Hampton	12	26	40	6	28	14	27	1	39	8	42	15	11	41	41	36	17	7	38	N	N	34	35	12	13	23	8	45	2
Horry	31	2	2	6	5	2	5	35	1	37	5	3	13	8	13	8	6	35	37	N	Y	15	11	5	10	16	2	8	5
Jasper	7	4	10	12	25	31	6	13	11	18	31	34	17	37	34	20	6	3	10	Y	N	31	42	12	15	10	10	17	14
Kershaw	32	19	30	19	22	25	42	31	10	26	10	18	38	22	19	19	17	35	22	Y	Y	16	20	12	41	41	29	33	27
Lancaster	27	38	5	30	16	28	4	29	12	29	14	12	29	15	11	18	17	40	30	N	Y	22	41	12	40	39	19	37	8
Laurens	25	37	24	22	2	8	11	35	36	21	20	16	26	21	29	36	6	37	24	Y	Y	19	34	5	16	27	17	25	18
Lee	21	27	37	2	20	10	2	2	38	13	44	27	23	36	43	4	17	6	38	Y	N	45	22	37	14	8	11	34	6
Lexington	44	11	21	18	35	28	32	35	27	40	32	36	30	4	4	26	2	38	25	Y	Y	14	10	12	43	44	38	12	38
Marion	7	43	35	14	31	10	8	10	8	27	2	5	15	26	40	36	17	17	38	N	N	40	7	12	6	31	14	6	32
Marlboro	3	20	42	15	27	31	22	6	44	1	46	46	4	29	44	20	17	45	10	Y	Y	41	45	37	4	3	9	43	3
McCormick	2	33	42	38	42	39	15	9	5	24	23	1	39	45	21	36	17	2	1	N	N	2	3	37	24	17	21	32	21
Newberry	24	42	39	27	1	30	43	8	34	17	36	39	39	27	23	36	17	25	18	Y	Y	11	37	12	30	18	36	30	30
Oconee	36	3	4	33	15	20	34	24	21	20	28	20	39	19	10	33	6	25	27	Y	Y	17	32	12	44	6	24	22	28
Orangeburg	12	35	32	3	41	31	45	7	41	22	40	22	9	23	37	9	17	28	12	Y	Y	26	13	12	22	46	34	24	34
Pickens	33	13	16	37	14	14	3	35	24	35	19	19	37	11	20	23	6	27	36	N	Y	13	25	8	38	27	23	26	23
Richland	27	23	13	4	43	31	40	30	15	46	18	43	3	2	7	2	6	30	13	Y	Y	6	2	3	29	38	28	3	44
Saluda	34	31	38	38	19	41	19	5	46	6	45	41	39	35	33	36	17	8	38	N	N	46	38	37	39	25	43	46	15
Spartanburg	42	24	14	36	40	14	12	34	25	39	16	28	21	6	14	17	2	39	32	Y	Y	9	23	8	33	26	31	10	36
Sumter	6	29	36	11	21	39	39	26	33	36	22	38	6	14	25	24	17	31	5	Y	Y	20	17	12	21	43	30	23	33
Union	29	20	29	21	3	5	10	12	20	19	25	11	39	32	27	31	17	14	38	N	Y	27	29	12	7	30	16	35	9
Williamsburg	10	12	12	1	44	10	35	11	2	5	1	9	2	43	42	32	17	17	3	N	N	44	19	37	32	42	3	44	1
York	36	40	14	25	18	31	38	33	14	41	26	33	31	5	3	28	2	43	30	Y	Y	25	8	12	34	34	40	11	40

Appendix 1. Resource Inventory

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Cornerstone	103 Whitehall Street	Abbeville		X				X	
Abbeville County Health Department	909 W. Greenwood Street, Suite 2	Abbeville		X		X			
HopeHealth- Aiken	150 University Parkway	Aiken	X	X	X	X	X		
Palmetto Gastro & Hepatology	103 Gregg Ave, Suite 101	Aiken					X		
Aiken Center for Alcohol and Other Drug Services	1105 Gregg Highway	Aiken						X	
Aiken County Health Department	222 Beaufort Street, NE	Aiken		X		X			
BHG Aiken Treatment Center	410 University Parkway, Suite 1560	Aiken						X	X
New Life Center	570 Memorial Avenue	Allendale						X	
Allendale County Health Department	571 Memorial Avenue North	Allendale		X		X			
AnMed Health Gastroenterology Specialists	2000 East Greenville Street, Suite 2900	Anderson					X		
AnMed Health Infection Management	703 North Fant Street, Suite B	Anderson					X		
Anderson/Oconee Behavioral Health Services	226 McGee Road	Anderson						X	
Anderson County Health Department	220 McGee Road	Anderson		X		X			
Southwest Carolina Treatment Center	341 West Beltline Boulevard	Anderson						X	X

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Tri-County Commission on Alcohol and Drug Abuse	608 North Main Street	Bamberg						X	
Bamberg County Health Department	370 Log Branch Road	Bamberg		X		X			
Palmetto Gastro & Hepatology	85 Wren Street	Barnwell					X		
Axis I Center of Barnwell	1644 Jackson Street	Barnwell						X	
Barnwell County Health Department	11015 Ellenton Street Highway 278	Barnwell		X		X			
Beaufort Memorial Lowcountry Medical Group	300 Midtown Drive	Beaufort					X		
Medical Associates of the Lowcountry Gastroenterology-Beaufort	95 Sea Island Pkwy, Suite 102	Beaufort					X		
Good Neighbor Free Medical Clinic of Beaufort	30 Professional Village Circle	Beaufort					X		
Beaufort County Alcohol and Drug Abuse Department	1905 Duke Street	Beaufort						X	
Beaufort County Health Department- Main Office	601 Wilmington Street	Beaufort		X		X			
Trinity Behavioral Care	1035 Cheraw Street	Bennettsville						X	
Marlboro County Health Department	711 Parsonage Street Extension	Bennettsville		X		X			
The Lee Center	108 East Church Street	Bishopville						X	
Lee County Health Department	810 Brown Street	Bishopville		X		X			

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Coastal Gastroenterology- Bluffton	29 Plantation Park Drive, Bldg. 200, Suite 203	Bluffton					X		
Beaufort County Health Department- Bluffton	4819 Bluffton Parkway	Bluffton		X		X			
The ALPHA Behavioral Health Center	709 Mill Street	Camden		X				X	
Kershaw County Health Department	1116 Church Street	Camden		X		X			
Kershaw Health	1315 Roberts Street	Camden			X				
Medical University of South Carolina	179 Ashley Ave.	Charleston	X						
Medical University of South Carolina, Infectious Disease Clinic	135 Rutledge Ave, Rutledge Tower 7th Floor	Charleston		X	X	X	X		X
Medical University of South Carolina Women's Health	135 Cannon St.	Charleston					X		
Roper St. Francis Healthcare, The Wellness Center	1481 Tobias Gadson Blvd.	Charleston	X	X	X			X	
Charleston Center	5 Charleston Center Dr.	Charleston		X		X		X	X
Fetter Health Care Network	51 Nassau Street	Charleston	X	X		X			
Charleston Gastroenterology Specialists	1962 Charlie Hall Boulevard	Charleston					X		

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Medical University of South Carolina, Digestive Disease Center	Ashley River Tower, 25 Courtenay Drive	Charleston					X		
Digestive and Liver Disease Care	1606 Ashley River Road	Charleston					X		
Lowcountry Infectious Diseases & Infusion Center- Charleston	1938 Charlie Hall Blvd, Unit B	Charleston					X		
Palmetto Digestive Health Specialists- West Ashley	2073 Charlie Hall Blvd.	Charleston					X		
Ralph H Johnson VA Medical Center	109 Bee Street	Charleston					X		
Hazel Pittman Center	130 Hudson Street	Chester						X	
Chester County Health Department	129 Wylie Street	Chester		X		X			
The ALPHA Behavioral Health Center	1218 East Boulevard	Chesterfield						X	
Chesterfield County Health Department	203 North Page Street	Chesterfield		X		X			
GateWay Counseling Center	219 Human Services Road	Clinton						X	
Laurens County Health Department	93 Human Services Road	Clinton		X		X			
Clear Skye Treatment Centers	1035 Medical Ridge Road	Clinton						X	X

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
AIDS Healthcare Foundation/ Grace Medical Group	3025 Farrow Road	Columbia	X	X	X		X		
The Joseph H. Neal Wellness Center	1813 Laurel Street	Columbia		X	X	X			
University of South Carolina, School of Medicine, Immunology Center	1 Richland Medical Park, Suite 420	Columbia	X				X		
Palmetto AIDS Life Support Services (PALSS)	2638 Two Notch Road, Suite 108	Columbia	X	X	X	X	X		
Eau Claire Cooperative Health - Waverly Family Practice	1228 Harden Street	Columbia	X		X				
LRADAC	2711 Colonial Dr.	Columbia		X		X		X	
Associates in Gastroenterology, P.A.	1070 Wildewood Centre Drive	Columbia					X		
Carolina Digestive Disease	1520 Taylor Street, Suite 200	Columbia					X		
Columbia Gastroenterology Associates	2739 Laurel Street, Suite 1	Columbia					X		
Columbia Gastroenterology Associates	100 Palmetto Health Pkwy., Suite 102	Columbia					X		

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Consultants in Gastroenterology & the South Carolina Endoscopy Center Northeast	11 Gateway Corners Park	Columbia					X		
Consultants in Gastroenterology- St. Andrews	7033 St Andrews Road, Suite 304	Columbia					X		
Eau Claire Internal Medicine	4605 Monticello Road Building A, Suite 3	Columbia					X		
Palmetto Gastroenterology, P.A.	2750 Laurel Street, Suite 201	Columbia					X		
Wm. Jennings Bryan Dorn VA Medical Center	6439 Garners Ferry Road	Columbia					X		
Richland County Health Department	2000 Hampton Street	Columbia		X		X			
Acercamiento Hispano/Hispanic Outreach	827 Wildwood Avenue	Columbia		X	X	X			
Crossroads Treatment Center of Columbia	1421 Bluff Road	Columbia						X	X
CARETEAM+ Family Health and Specialty Care	100 Professional Park Drive	Conway	X	X	X	X	X		X
Lowcountry Infectious Diseases & Infusion Center	128 Professional Park Dr., Unit B	Conway	X				X		
Shoreline Behavioral Health Services	2404 Wise Road	Conway		X		X		X	X

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Horry County Health Department- Conway Clinic	1931 Industrial Park Road	Conway		X		X			
Fetter Health Care Network- Elijah Wright Health Center	1681 Old Highway 6	Cross		X	X	X		X	
Pee Dee Health Care	201 Cashua Street	Darlington					X		
Darlington County Health Department	305 Russell Street	Darlington		X		X			
Trinity Behavioral Care	204 Martin Luther King Jr. Boulevard	Dillon						X	
Dillon County Health Department	201 West Hampton Street	Dillon		X		X			
Palmetto Carolina Treatment Center	325 Inglesby Parkway, Unit F	Duncan						X	X
Recovery Concepts of the Carolina Upstate	1653 East Main Street	Easley						X	X
Cornerstone	603 Augusta Road	Edgefield						X	
Edgefield County Health Department	21 Star Road	Edgefield		X		X			
Estill Medical Center	454 Second Street E	Estill	X	X					
HopeHealth Medical Plaza	360 N. Irby Street	Florence	X	X	X	X	X		
Carolinas Infectious Disease	805 Pamplico Hwy, Medical Mall B, Suite B-125	Florence					X		
HopeHealth Palmetto	600 E. Palmetto St.	Florence					X		
Circle Park Behavioral Health Services	238 South Coit Street	Florence						X	

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Florence County Health Department	145 East Cheves Street	Florence		X		X			
Starting Point of Florence	1341 North Cashua Drive	Florence						X	X
Digestive Disease Associates of York County	1700 First Baxter Crossing, Suite 102	Fort Mill					X		
York County Treatment Center	377 Rubin Center Drive, Suite 101	Fort Mill						X	X
Cherokee County Commission on Alcohol and Drug Abuse	201 West Montgomery Street	Gaffney						X	
Cherokee County Health Department	400 South Logan Street	Gaffney		X		X			
Clear Skye Treatment Centers	104 Willis Plaza	Gaffney						X	X
Tidelands Waccamaw Gastroenterology at Georgetown	1011 North Fraser Street	Georgetown				X	X		
Georgetown County Alcohol and Drug Abuse Commission	1423 Winyah Street	Georgetown		X				X	
Georgetown County Health Department	531 Lafayette Circle	Georgetown		X		X			
Palmetto Primary Care Physicians	7 S Alliance Drive Suite 202A	Goose Creek					X		
Berkeley County Health Department	106 Westview Drive Boulevard	Goose Creek		X		X			
AID Upstate	830 Pendleton Street	Greenville	X	X	X	X	X		

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Gastroenterology Associates	200 Patewood Drive, Suite 200B	Greenville					X		
The Phoenix Center	1400 Cleveland Street	Greenville		X				X	X
Gastroenterology Consultants of IMA	1025 Verdae Blvd., Suite A	Greenville					X		
Gastroenterology Consultants of IMA	3308 Brushy Creek Rd	Greenville					X		
GHS Gastroenterology & Liver Center	890 W. Faris Rd., Suite 100	Greenville					X		
Greenville Health System- Infectious Disease	890 W Faris Road, Suite 520	Greenville					X		
Greenville VA Outpatient Clinic	41 Park Creek Drive	Greenville					X		
Greenville County Health Department	200 University Ridge	Greenville		X		X			
Greenville Free Medical Clinic	600 Arlington Avenue	Greenville					X		
Crossroads Treatment Center of Greenville	157 Brozzini Court, Suite A-D	Greenville						X	X
Greenville Metro Treatment Center	602 Airport Road, Suite C	Greenville						X	X
Upper Savannah Care Services	108 Venture Court	Greenwood	X		X				
Digestive Disease Group PA	103 Liner Drive	Greenwood					X		
Cornerstone	1612 Rivers Street	Greenwood						X	
Greenwood County Health Department	1736 South Main Street	Greenwood		X		X			

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Greenwood Treatment Specialists	110 Court Avenue, West	Greenwood						X	X
Hampton Medical Center	200 Elm Street E	Hampton	X	X					
New Life Center	102 Ginn Altman Avenue, Suite C	Hampton		X				X	
Medical Associates of the Lowcountry Gastroenterology- Hardeeville	1010 Medical Center Drive, Suite 210	Hardeeville					X		
Donald E. Gatch Medical Center	522 Stiney Road	Hardeeville	X	X					
Medical Associates of the Lowcountry Gastroenterology	1010 Medical Center Drive, Suite 210	Hardeeville					X		
CareSouth Carolina, Care Innovations - Hartsville	1268 South 4th Street	Hartsville	X	X	X	X	X	X	X
Rubicon Family Counseling Services	510 East Carolina Avenue	Hartsville		X				X	
Darlington County Health Department- Hartsville Clinic	130 East Camden Avenue	Hartsville		X		X			
Starting Point of Darlington	1451 Retail Row	Hartsville						X	X
HH Gastroenterology	Island Medical Plaza, 35 Bill Fries Dr., Bldg. F	Hilton Head					X		
Coastal Gastroenterology- Hilton Head	23 Main Street, Suite 101-B	Hilton Head					X		

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Orangeburg County Health Department- Holly Hill	8423A Old State Road	Holly Hill		X		X			
Fetter Health Care Network- Hollywood Health Center	5225 Highway 165	Hollywood	X	X	X	X		X	X
Midlands Gastroenterology	One Wellness Blvd. Suite 110	Irmo					X		
Midlands Gastroenterology	One Wellness Blvd., Suite 110	Irmo					X		
Barrier Islands Free Medical Clinic	3226 Maybank Highway, Building C	Johns Island					X		
Charleston County Health Department- Johns Island	3574 Maybank Highway	Johns Island		X		X			
HopeHealth Kingstree	520 Thurgood Marshall Blvd., Suite B	Kingstree					X		
Williamsburg County Department on Alcohol and Drug Abuse	115 Short Street	Kingstree		X				X	
Williamsburg County Health Department	520 Thurgood Marshall Highway	Kingstree		X		X			
Florence County Health Department- Lake City Clinic	137 North Acline Avenue	Lake City		X		X			
Catawba Gastroenterology	108 Health Care Drive	Lancaster					X		
Counseling Services of Lancaster	114 South Main Street	Lancaster						X	
Lancaster County Health Department	1833 Pageland Highway	Lancaster		X		X			

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Consultants in Gastroenterology-Lexington	811 W. Main, Suite 208	Lexington					X		
LRADAC	1068 South Lake Drive	Lexington		X				X	
Lexington County Health Department	1070-B South Lake Drive	Lexington		X		X			
Little River Medical Center	4303 Live Oak Drive	Little River	X	X		X	X	X	X
McLeod Digestive Health Center Seacoast	3980 Highway 9 East, Suite 320	Little River					X		
Horry County Health Department-Stephen's Crossroad Clinic	107 Hwy 57 North	Little River		X		X			
Sandhills Medical Foundation-Lugoff	40 Baldwin Avenue	Lugoff	X	X	X	X	X		
Clarendon Behavioral Health Services	14 North Church Street	Manning		X				X	X
Clarendon County Health Department	110 East Boyce Street	Manning		X		X			
Trinity Behavioral Care	1305 North Main Street	Marion		X				X	
Cornerstone	504 North Mine Street	McCormick						X	
McCormick County Health Department	204 Highway 28	McCormick		X		X			
Fetter Health Care Network- Rose D. Gibbs Health Center	106 W Main Street	Moncks Corner		X	X	X		X	
Ernest E. Kennedy Center	306 Airport Drive	Moncks Corner		X		X		X	

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Palmetto Digestive Health Specialists- Moncks Corner	2061 Highway 52	Moncks Corner					X		
Palmetto Digestive Health Specialists- Moncks Corner	730 Stoney Landing Rd.	Moncks Corner					X		
Berkeley County Health Department- Moncks Corner	109 West Main Street	Moncks Corner		X		X			
Lowcountry Gastroenterology Associates	1300 Hospital Drive Suite 300	Mount Pleasant					X		
Palmetto Digestive Health Specialists- Mt. Pleasant	3500 Hwy. 17N Suite #325	Mount Pleasant					X		
Charleston County Health Department- Mt. Pleasant	1189 Sweetgrass Basket Parkway, Suite 100	Mt. Pleasant		X		X			
Marion County Health Department	206 Airport Court, Suite B	Mullins		X		X			
Tidelands Waccamaw Gastroenterology at Murrells Inlet	Waccamaw Medical Park West 4040 Highway 17 Bypass, Suite 302	Murrells Inlet					X		
Strand GI Associates	945 82nd Parkway, Suite 3A	Myrtle Beach					X		
Horry County Health Department- Myrtle Beach Clinic	700 21st Avenue North	Myrtle Beach		X		X			
Center of Hope of Myrtle Beach	104 George Bishop Parkway	Myrtle Beach						X	X
Westview Behavioral Health Services	800 Main Street	Newberry						X	

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Newberry County Health Department	2111 Wilson Road	Newberry		X		X			
Palmetto Community Care	3547 Meeting Street Road	North Charleston	X	X	X	X			X
Charleston County Health Department- North Area	3963 Whipper Barony Lane	North Charleston							
Charleston County Health Department- Northwoods	2070 Northbrook Boulevard, Suite #A20	North Charleston		X		X			
Crossroads Treatment Center of Charleston	2470 Mall Drive, Unit C & D	North Charleston						X	X
Center for Behavioral Health South Carolina	2301 Cosgrove Avenue #1	North Charleston						X	X
Fetter Health Care Network-Enterprise	2047 Comstock Avenue	North Charleston		X	X	X		X	X
Ruth P. Field Medical Center (Chelsea)	721 N Okatie Highway	Okatie	X	X					
HopeHealth- Orangeburg	1857 Joe S. Jeffords Highway	Orangeburg	X	X	X	X	X		
Tri-County Commission on Alcohol and Drug Abuse (TCCADA)	910 Cook Road	Orangeburg		X				X	X
Orangeburg County Health Department	1550 Carolina Avenue	Orangeburg		X		X			
Behavioral Health Services of Pickens County	309 East Main Street	Pickens						X	
Pickens County Health Department	200 McDaniel Avenue	Pickens		X		X			
Port Royal Medical Center	1320 Ribaut Road	Port Royal	X	X					

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Ridgeland Family Medical Center	1520 Grays Highway	Ridgeland	X	X					
New Life Center	113 East Wilson Street	Ridgeland						X	
Jasper County Health Department	651 Grays Highway	Ridgeland		X		X			
Recovery Concepts, LLC	124-A Boardwalk Drive	Ridgeland						X	X
Affinity Health Center	455 Lakeshore Parkway	Rock Hill	X	X	X	X	X	X	X
Digestive Disease Associates of York County	170 Amendment Avenue	Rock Hill					X		
Keystone Substance Abuse Services	199 South Herlong Avenue	Rock Hill		X				X	X
York County Health Department-Rock Hill Clinic	1070 Heckle Boulevard	Rock Hill		X		X			
Rock Hill Treatment Specialists	1274 East Main Street	Rock Hill						X	X
Westview Behavioral Health Services	204 N. Ramage Street	Saluda						X	
Saluda County Health Department	613 Newberry Highway	Saluda		X		X			
Elijah Washington Medical Center	211 Paige Point Road	Seabrook	X	X					
Anderson/Oconee Behavioral Health Services	691 South Oak Street	Seneca		X				X	
Oconee County Health Department	609 N. Townville Street	Seneca		X		X			
Crossroads Treatment Center of Seneca	209 Oconee Square Drive	Seneca						X	X

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Rosa Clark Medical Center	301 Memorial Drive	Seneca						X	X
CareSouth Carolina, Care Innovations - Society Hill	268 S. Main Street	Society Hill	X	X	X	X	X		
Piedmont Care	101 N. Pine Street, Ste 200	Spartanburg		X	X				
Mary Black Gastroenterology	11 Doctors Park Drive Suite 240	Spartanburg					X		
Medical Group of the Carolinas Gastroenterology – Spartanburg	853 North Church Street, Suite 620	Spartanburg					X		
MGC Medical Affiliates- North Grove	1330 Boiling Springs Rd, Suite 2500	Spartanburg	X				X		
MGC Infectious Disease – Spartanburg	853 North Church Street, Suite 410 A	Spartanburg					X		
The Forrester Center for Behavioral Health	187 West Broad Street, Suite 200	Spartanburg						X	
Spartanburg County Health Department	151 East Wood Street	Spartanburg		X		X			
Spartanburg County Health Department- Point Teen Clinic at Tobias	154 George Washington Carver Drive	Spartanburg		X		X			
BHG Spartanburg Treatment Center	239 Access Road	Spartanburg						X	X
Leroy E. Browne Medical Center	6315 Jonathan Francis Sr Road	St Helena Island	X	X					
Tri-County Commission on Alcohol and Drug Abuse	2827 Old Belleville Road	St. Matthews						X	

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Calhoun County Health Department	2837 Old Belleville Road	St. Matthews		X		X			
Fetter Health Care Network- TJ Bell Family Health Center	130 Varnfield Drive, Suite 100	Summerville		X	X	X		X	
Lowcountry Infectious Diseases & Infusion Center- Summerville	1520 Old Trolley Rd, Suite 101	Summerville					X		
Palmetto Digestive Health Specialists- Summerville	1112 N Main St.	Summerville					X		
Dorchester Alcohol and Drug Commission	500 North Main Street, Suite 4	Summerville		X				X	
Dorchester County Health Department	500 North Main Street, Suite 9	Summerville		X		X			
Tandem Health	1278 N. Lafayette Drive	Sumter	X	X	X				
Palmetto Health-USC Infectious Disease-Sumter	115 N. Sumter St., Suite 400	Sumter					X		
Sumter Gastroenterology	641 W Wesmark Blvd	Sumter					X		
Sumter Behavioral Health Services	441 North Main Street	Sumter		X				X	
Sumter County Health Department	105 North Magnolia Street	Sumter		X		X			
Sandhills Medical Foundation	425 N. Salem Avenue	Sumter	X	X	X				
Healthy U Behavioral Health	201 South Herndon Street	Union						X	
Union County Health Department	115 Thomas Street	Union		X		X			

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Hampton County Health Department	531 Carolina Avenue, West	Varnville		X		X			
Fetter Health Care Network-Walterboro	302 Medical Park Drive, Suite 111	Walterboro		X	X	X		X	
Colleton County Commission on Alcohol and Drug Abuse	1439 Thunderbolt Drive	Walterboro						X	
Colleton County Health Department	219 S Lemacks Street	Walterboro		X		X			
Consultants in Gastroenterology & the South Carolina Endoscopy Center	131 Summerplace Drive	West Columbia					X		
Lexington Medical Specialists	110 East Medical Lane, Suite 140	West Columbia	X				X		
Columbia Metro Treatment Center	560 Chris Drive	West Columbia						X	X
Lexington Treatment Specialists	185 Lott Court	West Columbia						X	X
Fairfield Behavioral Health Services	178 US Highway 321 Bypass North	Winnsboro						X	
Fairfield County Health Department	1136 Kincaid Bridge Road	Winnsboro		X		X			
York County Health Department-York Health Center	116 North Congress Street	York		X		X			
Low Country Health Care System	86 Wren Street	Barnwell			X				

Agency	Address	City	HIV trt	HIV tst	HIV link	HCV tst	HCV trt	SUD trt	MAT
Low Country Health Care System	333 Revolutionary Trail	Fairfax			X				
New Horizons Family Health Services	975 W Faris Road	Greenville			X				
Spartanburg Regional Healthcare System	101 E Wood Street	Spartanburg			X				
Abbreviations: HIV testing (HIV tst), HIV treatment (HIV trt), HIV linkage and re-engagement services (HIV link), HCV testing (HCV tst), HCV treatment (HCV trt), Substance Use Disorder treatment (SUD trt)									

References

- Amon JJ, Garfein RS, Ahdieh-Grant L, et al. Prevalence of hepatitis c virus infection among injection drug users in the United States, 1994-2004. *Clin Infect Disease*. 2008;12(15):1852-1858.
- Fernandes RM, Cary M, Duarte G, et al. Effectiveness of needle and syringe programmes in people who inject drugs – an overview of systematic reviews. *BMC Public Health*. 2017;17:309.
- Flanagan BE, Gregory EW, Hallisey EJ, Heitgerd JL, Lewis B. A social vulnerability index for disaster management. *Journal of Homeland Security and Emergency Management*. 2011;8(1):article 3.
- MacMaster SA. Experiences with and perceptions of, barriers to substance abuse and HIV services among African American women who use crack cocaine. *J Ethn Subst Abuse*. 2005;4(1):53-75.
- Potier C, Laprevote V, Dubois-Arber F, Cottencin O, Rolland B. Supervised injection services: what has been demonstrated? A systematic literature review. *Drug Alcohol Depend*. 2014;145:48-68,
- Redko C, Rapp RC, Carlson RG. Waiting time as a barrier to treatment entry: perceptions of substance users. *J Drug Issues*. 2006;36(4):831-852.
- Rickles M, Rebeiro PF, Sizemore L, et al. Tennessee's in-state vulnerability assessment for a "Rapid dissemination of human immunodeficiency virus or hepatitis c virus infection" event utilizing data about the opioid epidemic. *Clin Infect Disease*. 2018;66:1722-1732.
- Peters PJ, Pontones P, Hoover KA, et al. HIV infection linked to injection use of oxymorphone in Indiana, 2014-2015. *N Engl J Med*. 2016;375:229-239.
- Sagnelli E, Santantonio T, Coppola N, et al. Acute hepatitis C: clinical and laboratory diagnosis, course of disease, treatment. *Infection*. 2014;42(4):601-610.
- Seelye KQ. AMA policy group backs needle exchanges. *New York Times*. 1997;A:15.
- Strathdee SA, Celentano DD, Shah N, et al. Needle-exchange attendance and health care utilization promote entry into detoxification. *J Urban Health*. 1999;76(4):448-460.
- UNAIDS. Do no harm: health, human rights, and people who use drugs. 2016; Geneva, Switzerland.
- Van Handel MM, Rose CE, Hallisey EJ, et al. County-level vulnerability assessment for rapid dissemination of HIV or HCV infections among persons who inject drugs, United States. *J Acquir Immune Defic Syndr*. 2016;73(3):323-331.
- Wodak A, Cooney A, et al. Effectiveness of sterile needle and syringe programming in reducing HIV/AIDS among injection drug users. *World Health Organization*.