SARS-CoV-2 would be adverse clinical news, a review was undertaken to see if there were ethnic differences in the veteran population being tested at the Veteran Affairs Medical Center (VAMC) on the risk of testing positive for SARS-CoV-2.

Methods: As part of a quality assurance/quality improvement project, a manual retrospective review of all SARS-CoV- 2 RT-PCR tests performed at the VAMC from March 11th, 2020 to April 13th, 2020. These tests were reviewed within
the computerized medical record system to determine the age, gender, ethnicity of the patients, and test result of the patient.

Results: There were 571 patients who had tested for SARS-CoV-2. Out of these patients, 99 of these patients had a positive test result. The ethnic breakdown of the unique patients with a positive test result was 67 were African- American (68% of positive results), 2 Asian-American (2%), 1 Native Hawaiian or other Pacific Islander/Hispanic mixed (1%), 17 Caucasian (17%), and 12 declined to answer or left ethnic field unanswered. Among the 471 who had negative results, only 197 or 42% were African American and 118 were Caucasian (25%).

Conclusion: African Americans had more infections with SARS-CoV-2 compared to the other ethnic groups. Caucasians had many of the negative results, and positive results were otherwise not common in the other ethnic groups in the VAMC cohort. Given this first report in the literature of the disproportionate impact SARS-CoV-2 is having on those of African American ethnicity, appropriate clinical access and low threshold to test is essential.

Prognostic and Theragnostic Applications of Circulating Tumor DNA (CtDNA) in Metastatic Castrate- resistant Prostatic Carcinoma in Veterans: A Novel Promise in Precision Oncology

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Introduction/Objective: Utility of CtDNA in peripheral blood through liquid biopsies serves as a robust biomarker for precision oncology. Prostate cancer is most common cancer diagnosed in veterans, more commonly presenting at advanced stage with increased incidence of metastatic castrate-resistant prostatic carcinoma (MCRPC). Minimally invasive liquid biopsy is not limited by tumor site, type, tumor heterogeneity, and most importantly enables real time disease monitoring for best therapy decisions in MCRPC. The literature is sparse depicting the role of CtDNA in MCRPC in veteran patient population with distinct demographics/frequency of Tp53 mutations. We herein aim to study role of CtDNA in liquid biopsies for prognosis, treatment decisions and outcome in veterans with MCRPC.

Methods: QA documents from Foundation One (Cambridge MA, NGS) on liquid biopsies performed for the Corporal Michael J. Crescenz Veteran Affairs Medical Center (CMCVAMC) from May 2019 to April 15, 2020 were reviewed. All liquid biopsies were performed on MCRPC with evidence of tumor progression. Statistical data for adequacy, type of mutations either altering therapy, disease course or outcome was noted.

Results: A total of 23 liquid biopsies were performed. 21/23 (91.3%) biopsies were adequate, 19/21 (90.4%) showed signature mutations for resistance to therapy, predicting prognosis, or suggesting poor outcome with decreased overall survival. 4/21 (19%) showed androgen receptor amplification (ARV7 mutation) that helped in making treatment decisions. Increased frequency of Tp53 mutations were noted (12/21 (57.1%) compared to general population (30- 40%)) indicating worse prognosis/aggressive disease course with decreased survival.

Conclusion: Combined exposure of herbicide agent orange and smoking may be a fertile soil for observed differences in type and frequency of genomic alterations in veteran patient population with MCRPC. Comprehensive genomic profiling on CtDNA through minimally invasive liquid biopsy is feasible and can be successfully implemented in veterans with multiple co-morbidities. Although ARV7 mutation is much more common in general population, veterans with advanced hormone resistant prostatic carcinoma may benefit from aggressive approach in developing targeted therapy focused on DNA repair genes, especially Tp53.

Improved Across the Board Access to SARS-CoV-2 Laboratory Testing in an Integrated Medical System; the Veteran Affairs Medical Center (VAMC) Experience

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Introduction/Objective: Due to the spread of SARS-CoV-2 – the causative pathogen behind COVID-19, a significant impact on society including significant death, morbidity, strain on the nation's medical systems, and an economic shutdown of many sectors has come to pass. While society has been affected by this virus, it has also been documented in the mainstream news that this pandemic has disproportionately affected non-white minority groups, and that access to testing for vulnerable populations have been limited. Similarly, previously published epidemiological data by Zuvekas et al. show that

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populations with health insurance, higher socioeconomic class, and white in race have received significantly better access to private health care resources. As veterans represent a vulnerable population, as part of quality assurance, testing data was reviewed to verify that this trend was not also affecting the VAMC.
Methods: As part of a quality assurance/quality improvement project, a retrospective manual review of all SARS-CoV- 2 RT-PCR tests performed at the VAMC from March 11th, 2020 to April 13th, 2020. These tests were reviewed within the computerized medical record system to determine the age, gender, and ethnicity of the patients. The demographic data from this search was compared with the population statistics of the major metropolitan city that the VAMC is located in.
Results: Out of 571 patients who were tested for SARS-CoV-2, 264 (46%) had an ethnic African-Americans background, 135 (24%) had an ethnic Caucasian or white background, 8 had an ethnic Hispanic background, 3 had an ethnic native Hawaiian or other Pacific Islander background, 2 had an ethnic Asian background (0.4%), and 1 had an ethnic American Indian or Alaskan Native background. The rest had left ethnicity unanswered or was unknown/declined to state. The majority of those tested were males (392 or 69%). Ages of patients tested ranged from 24 to 98 years of age. The ethnic distribution of those tested was like the ethnic distribution within the city where the VAMC was located.
Conclusion: Quality healthcare to the entire population also means that healthcare should be accessible to all members who require it. The VAMC offers broad access for testing to all its patients of all ethnicities. This demonstrates, in the changing healthcare landscape, one of the many advantages of the Veteran Affairs system.

Liquid Biopsy In Stage Iv Non-Small Cell Lung And Prostate Cancers And Prevalence Of Ethnicity And Risk Factors: A Va Medcial Center Experience

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Introduction/Objective: The advent of Liquid biopsy (LB) is a milestone in precision oncology. This minimally invasive revolutionary technique analyses circulating tumor DNA and detects signature genomic alterations. Advanced-stage prostate cancers are more common in African Americans both in general and veteran patient population, while general cohort Caucasians are more prone to advanced/metastatic NSCLC. Risk factor for these cancers is smoking; agent orange exposure and its relationship with aggressiveness/ethnicity for veterans is sparse in the literature. We performed a QA study for advanced lung/prostate cancers of veteran patients on LB.
Methods: QA documentation from Foundation One (Cambridge MA, NGS) on LB performed for the regional Veteran Affairs Medical Center (VAMC) from May 2019 to April 2020 were reviewed. The testing was performed on advanced NSCLC/prostate cancer cases with evidence of advanced tumor progression. Data for ethnicity, risk factors, post therapy PSA, Gleason score and genetic mutations noted.
Results: A total of 30 LBs were performed over this time period. Of 30 LBs, 23 were prostate and 7 were lung cancers. 2/30 had unknown ethnic background. 19/28 (67.8%) were of African American origin, 18 of which had advanced prostate cancers. 11/28 were white, of which 3/30 were advanced NSCLC. One patient declined to reveal risk factor exposure, hence 17/29 (58.6%) had smoking, 15/29 (51.7%) had a risk of herbicide, agent orange exposure; and, 10/29 (34.4%) had both risk factor exposures. 6/29 (20.6%) African American veterans had combined risk factors. 9/10 (90%) veterans which had dual exposure presented with either Gleason score of 9 or as metastasis. Post therapy PSA ranged from 0.5 to 1870 ng/ml and did not corelate with the aggressiveness of the cancer or therapy response.
Conclusion: Veteran patient population has slightly higher incidence of ethnic African Americans presenting with advanced NSCLC/prostate cancers compared to general patient cohort. Although incidence of smoking is similar, combined exposure with agent orange, increases the aggressiveness of the disease three-fold. Real-time monitoring of the therapy response and multimodal benefits by LB is of immense help in morbidly ill veterans, compared to post- therapy PSA monitoring or invasive tissue biopsy. Role of LB should also be explored for early screening/triaging the veterans.

Incidence of Androgen Receptor and DNA Repair Gene Mutations in Advanced Solid Malignancies: Clinical Impact of Liquid Biopsy at Veteran Affairs Medical Center

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Introduction/Objective: The advent of Liquid biopsy targeting genetic mutations in solid tumors is a major milestone in field of precision oncology. This minimally invasive, novel revolutionary technique analyses circulating tumor cells (CTC) in peripheral blood and detects signature genomic alterations. DNA repair gene (DDR) mutations have been reported in 25-40% of prostatic cancers and >50% of non-small cell lung

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