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## PR-CEAL Overview

For the past two years, the National Institutes of Health has funded the COVID-19 Disparities Community Engagement Alliance (CEAL) program to combat misinformation and mistrust in scientific research, particularly in scientific research, racial, and ethnic minority communities in the United States. The research team of the program in Puerto Rico, PR-CEAL, has carried out urgent research to find out, for example, the barriers and facilitators for vaccination against COVID-19 and the impact of prolonged COVID 'Long-COVID' on the island. In addition, we have developed more than one hundred (118) educational and community outreach activities to learn about the most pressing health needs and determine if our communities are resuming their visits to the doctor as prevention and early detection measures for cancer and other chronic diseases of great relevance to the public health of Puerto Rico.

The achievement of this academic-scientific effort is due to the support of community-based organizations and other interdisciplinary groups. These groups have been key in the use of scientific findings for the urgent dissemination of information based on scientific evidence and the development of campaigns aimed at our communities, thus avoiding misinformation.



Dr. Vivian Colón  
**Principal Investigator**



Dr. Cynthia Pérez  
**CO-Principal Investigator**







## Participation in COVID-19 clinical trials, willingness to participate, and trust in sources of information among persons with and without cancer in Puerto Rico.

**Authors:** Fabiola A. Rivera-Gastón, MPH(1); Hérmilis Berríos-Ortiz, MS(1); Jeslie M. Ramos-Cartagena, MS(2); Andrea López-Cepero, PhD, MHSN(3); Vivian Colón López, PhD, MPH(1); Cynthia M. Pérez, PhD(4); Ana P. Ortiz, PhD, MPH(1)(4)

**Affiliations:** (1) University of Puerto Rico, Comprehensive Cancer Center, San Juan, Puerto Rico; (2) University of Puerto Rico/MD Anderson Cancer Center Partnership for Excellence in Cancer Research Program, San Juan, Puerto Rico; (3) Emory University, Rollins School of Public Health, Department of Epidemiology, Atlanta, Georgia; (4) Graduate School of Public Health, Medical Sciences Campus, University of Puerto Rico, San Juan, Puerto Rico.

**Introduction.** Cancer patients have a high risk of severe COVID-19 and complications from it. Although the COVID-19 pandemic has led to an increase in the conduction of clinical trials (CTs), there is a scarcity of data on CT participation among cancer patients. We aimed to describe the level of participation in a COVID-19 CT, willingness to participate, as well as trust in sources of information for CTs among persons with and without a previous cancer diagnosis in Puerto Rico. **Methods.** Data collected from November 2021 to March 2022 from two cross-sectional studies were merged and used for analysis. Informed consent, telephone, face-to-face, and online interviews were conducted among participants  $\geq 18$  years old living in Puerto Rico ( $n=987$ ). Descriptive statistics and bivariate analysis (Fisher's exact test and chi-squared test) was done to describe the outcomes of interest, overall and by cancer status. **Results.** Mean age of participants was  $41 \pm 15.5$  years. Most participants were women (71.3%), with an educational level greater than high school (89.5%) and with an annual family income below \$20,000 (75.1%). Overall, 4.4% of participants ( $n=43$ ) reported history of cancer diagnosis. Only 1.8% of the population reported to have participated in a COVID-19 CT to receive either a treatment or vaccine; stratifying by cancer, none of the cancer patients had participated in a COVID-19 CT, and only 1.9% of non-cancer patients participated. While 37.0% of the participants indicated being very willing to sign up for a CT assessing COVID-19 treatment, willingness was higher in cancer patients (55.8%) than among participants without cancer (36.1%). Regarding trust in sources of information for CTs, the level of trust ("a great deal/ a fair amount") was higher for their physicians (87.6%), researchers (87.0%), the National Institute of Health (86.7%), their local clinics (82.9%), and a university hospital (82.7%), while it was lower for a pharmaceutical company (64.0%), and for friend, relative, or community leader (37.6%); no differences were observed by cancer status. **Conclusion.** While participation in COVID-19 CTs was extremely low in the study population, the willingness to participate was higher among cancer patients. Education on CTs and their availability are necessary to increase participation in this understudied group. Such efforts will enhance the representation of Hispanic and vulnerable populations, such as cancer patients, on COVID-19 CTs, and thus proper generalizability of study findings in the future. **Acknowledgements:** NIMHD-1OT2HL161827 and U54GM133807.



## COVID-19 clinical trials in Puerto Rico: an assesment by PR-CEAL

**Authors:** Fabiola A. Rivera-Gastón, MPH(1); Mariela Bournigal-Feliciano, MPH(1); Tanyaly Rivera Santiago, MS(1); Jeslie M. Ramos-Cartagena, MS (2), Cynthia M. Pérez, PhD(3), Vivian Colón López, PhD, MPH(1), Ana P. Ortiz, PhD, MPH(1)(3)

**Affiliations:** (1) University of Puerto Rico, Comprehensive Cancer Center, San Juan, Puerto Rico; (2) University of Puerto Rico/MD Anderson Cancer Center Partnership for Excellence in Cancer Research Program, San Juan, Puerto Rico; (4) Graduate School of Public Health, Medical Sciences Campus, University of Puerto Rico, San Juan, Puerto Rico.

**Introduction:** The COVID-19 pandemic has led to an increase in the conduction of treatment and vaccine clinical trials (CTs). We aimed to create a directory of COVID-19 CTs in Puerto Rico (PR) and describe perceived perspectives for participant recruitment among healthcare workers conducting COVID-19 CTs in the island.

**Methods:** The registry of COVID-19 CTs included trials being conducted in PR. The search was done between September 2021 to December 2021 using the following search programs: NIH RePORTER, clinicaltrials.gov and centerwatch.com. Also, 14 professionals working on COVID-19 CTs were in PR interviewed. The telephone based questionnaire included demographics, information of the CTs they worked on, and questions related to barriers and facilitators experienced in the recruitment of participants in COVID-19 CTs.

**Results:** Overall, 24 COVID-19 related CTs were identified; most were focused on treatment (70.8%), followed by prevention (16.7%) and vaccination trials (12.5%). The majority of CTs were funded by pharmaceuticals (33.3%) and biotechnologies companies (29.2%), whereas 25% were funded through federal funds (National Institute of Health and the Veterans Affairs Office). According to the research staff, they perceived that the persons agreed to participate in a COVID-19 CT because they wanted to contribute to scientific knowledge (78.6%), the participant had chronic diseases (92.9%), that they knew CTs would be important for development of effective treatments for COVID-19 (85.7%), and that CTs would be important to return to normalcy (78.6%). Barriers to participate perceived by the research staff were fear of secondary effects (85.7%), becoming guinea pigs (71.4%), not being interested (71.4%), lack of time (57.1%), that participants perceiving a lot effort from their part (57.1%), fear to participate (57.1%) and not knowing about COVID-19 CTs and their procedures (57.1%).

**Conclusion:** Efforts to promote COVID-19 CTs and increase participant recruitment should be improved in PR.

**Acknowledgments:** NIMHD-10T2HL161827





## Investigación participativa sobre esfuerzos de prevención y protección contra el COVID-19 para las comunidades rurales de Castañer, Jayuya y Adjuntas

**Autores:** Marcilyn Colón-Colón (1), EdD, MPH, MA, CHES®, Edna Acosta-Pérez(1)(2), PhD, MS, Zuleska Soto-Román (1) MPHE, Heriberto Martínez-Piña(3), PhD, José O. Rodríguez-Ramos (3), MD, Robin Rusell-Orama (3), MHSA, MBA

**Afiliaciones:** (1) Universidad de Puerto Rico, Recinto de Ciencias Médicas, Facultad de Ciencias Biosociales y Escuela Graduada de Salud Pública, San Juan Puerto Rico; (2) Oficina de Investigación y Vinculación Comunitaria - Consorcio de Investigación Clínica y Traslacional de Puerto Rico (PRCTRC), San Juan, Puerto Rico; (3) Hospital General de Castañer, Inc., Castañer, Puerto Rico

**Introducción:** Investigación participativa fundamentada en la comunidad para conocer los esfuerzos de prevención y protección y respuesta ante el COVID-19 desarrollados por el Hospital General Castañer (HGC) y sus policlínicas en Adjuntas y Jayuya; así como las experiencias en las comunidades por el impacto de la pandemia. **Objetivos:** 1) Conocer las opiniones, experiencias y recomendaciones de los participantes acerca del COVID-19. 2) Identificar las estrategias implementadas de promoción de la salud y prevención ante el COVID-19. **Método:** Se realizaron 3 grupos focales y 26 entrevistas narrativas con pacientes, proveedores de servicios y líderes comunitarios de la región de Castañer, Jayuya y Adjuntas. Las verbalizaciones fueron analizadas siguiendo un sistema de validación de jueces independientes. Las metacategorías más relevantes identificadas del análisis de contenido fueron: Aspectos facilitadores de salud, Carga de responsabilidad académica en las familias y Estatus de salud mental. **Resultados:** De los esfuerzos implementados por el HGC destacan: Telesalud, trabajo remoto/flexible, servicio de entrega de medicamentos en el hogar y transportación a citas médicas. La pandemia ha aumentado la responsabilidad y roles en las madres de familias y ha afectado negativamente la salud mental en la población. **Conclusión:** El HGC se ha convertido en un recurso vital para las comunidades mediante la implementación de diferentes estrategias innovadoras para atender sus necesidades de salud. Algunas oportunidades para la acción incluyen promover esfuerzos educativos basado en evidencia, capacitar al personal y establecer alianzas con los diferentes sectores participantes para mejorar el estado de salud de la población. **Reconocimientos:** Esta investigación fue apoyada por una subvención otorgada por los Institutos Nacionales de la Salud de La Alianza de Participación Comunitaria contra las Disparidades del COVID-19 de Puerto Rico (PR-CEAL, por sus siglas en inglés) (OT2HL161827) y La Alianza Hispana para la Investigación Clínica y Traslacional (La Alianza) con el apoyo de los Institutos Nacionales de Salud del Instituto Nacional de Ciencias Médicas Generales (NIGMS-U54GM133807). Protocolos aprobados por el IRB del Recinto de Ciencias Médicas (A9360118),(A7080121). **Agradecimientos:** Especial agradecimiento a las estudiantes graduadas de nivel de maestría de la Escuela Graduada de Salud Pública del Recinto de Ciencias Médicas - Nathaly Villareal Rivera, Laura Mora Lemus y Valeria Schleier Albino por su apoyo con las transcripciones de audio a texto. Se reconoce la colaboración del equipo de Alcance Comunitario del Hospital General de Castañer, Inc., compuesto por Erik Ramos, Thaís González, Melanisse Matías, Wilnellys Cortés, Stephanie González, Zuleyka Camacho y Néstor Núñez por su diligencia y gran desempeño en la identificación y el reclutamiento de participantes para el estudio.



## Colaboración intersectorial para la identificación y manejo de retos y oportunidades comunitarias ante el COVID-19

**Autores:** Marcilyn Colón-Colón (1), EdD, MPH, MA, CHES®, Edna Acosta-Pérez(1)(2), PhD, MS, Zuleska Soto-Román (1) MPHE, Heriberto Martínez-Piña(3), PhD, José O. Rodríguez-Ramos (3), MD, Robin Rusell-Orama (3), MHSA, MBA

**Afiliaciones:** (1) Universidad de Puerto Rico, Recinto de Ciencias Médicas, Facultad de Ciencias Biosociales y Escuela Graduada de Salud Pública, San Juan Puerto Rico; (2) Oficina de Investigación y Vinculación Comunitaria - Consorcio de Investigación Clínica y Traslacional de Puerto Rico (PRCTRC), San Juan, Puerto Rico; (3) Hospital General de Castañer, Inc., Castañer, Puerto Rico

**Resumen.** Por medio de una investigación de acción participativa con enfoque en la colaboración intersectorial se investigó el impacto de la pandemia de COVID-19 y respuesta por parte de las comunidades de Castañer, Adjuntas y Jayuya. Los objetivos del estudio fueron: 1) Identificar los factores multiniveles que actúan como barreras o facilitadores para la prevención y atención de COVID-19 y; 2) Conocer las opiniones, experiencias y recomendaciones de los participantes acerca de las prioridades de salud relacionadas con el COVID-19 y sus necesidades de desarrollo de capacidades. Se utilizó un diseño de métodos mixtos para comprender mejor la naturaleza y contexto de los problemas de salud identificados y los recursos de servicios relacionados con la pandemia y otras condiciones de salud. Para esto, se recogieron datos relacionados en el estudio de necesidades de salud realizado por el Hospital General de Castañer (HGC) y de los 8 foros comunitarios virtuales realizados por La Alianza en 51 municipios, se realizaron 3 grupos focales y 26 entrevistas narrativas a profundidad con personal de salud del HGC, usuarios de servicios del HGC y líderes y/o miembros de la comunidad y se administró una encuesta en 4 comunidades de Maricao, Castañer, Jayuya y Adjuntas. La muestra del Estudio del HGC fue de 1,146 participantes de los municipios de Maricao, Yauco, Jayuya, el Poblado de Castañer y Adjuntas de los cuales su mayoría fueron mujeres (60.5%). En los grupos focales y entrevistas narrativas participaron 33 y 26 personas, respectivamente. La muestra de la encuesta fue de 100 participantes. La información cualitativa de las entrevistas y grupos focales fue transcrita verbatim, seguido por un análisis de contenido por medio de validación de jueces. En cuanto a hallazgos preliminares, más de un 50% seleccionó a sus 'amigos cercanos y familiares', 'el Grupo de Trabajo de Coronavirus de los Estados Unidos', 'líder religioso o espiritual' y 'médico o proveedor de atención médica como sus fuentes más confiables. En contraste, el 52% consideró que los 'contactos de redes sociales' (Facebook, Twitter) eran fuentes no confiables. Entre las barreras principales se identificaron la desinformación y la desconfianza con respecto a la manufactura, el propósito y la confiabilidad de las vacunas de COVID-19. En las entrevistas narrativas las personas compartieron su frustración ante el exceso de información y debido a la aparición de nuevas variantes. Algunos de las recomendaciones para la acción incluyen el proporcionar educación y contrarrestar los mensajes erróneos basados en creencias religiosas y entre las personas con un bajo nivel de educación para promover la vacunación y las pruebas de detección. Los hallazgos generales sugieren la necesidad de abordar la desinformación, los conceptos erróneos y la fatiga de los mensajes mediante la creación de alianzas con sectores religiosos; fortalecer las destrezas del personal de atención en salud a nivel general y no solo el de emergencias; y el aplicar modelos de cambio de comportamiento individual y social en el desarrollo y presentación de mensajes relacionados con la protección, prevención y manejo del COVID-19.



## COVID-19 Vaccine booster hesitancy among hispanic adults: The Puerto Rico Community Engagement Alliance against COVID-19 Disparities (PR-CEAL)

**Authors:** Berríos-Ortiz H(1) , López-Cepero A (2) , Pérez CM(3), Cameron, S(3), Pons, Adriana (1), Colón-López V (1)

**Affiliations:** (1) Comprehensive Cancer Center-University of Puerto Rico, Cancer Control and Population Sciences, San Juan, Puerto Rico; (2) Emory University, Rollins School of Public Health, Department of Epidemiology; (3) University of Puerto Rico, Medical Sciences Campus, Department of Biostatistics and Epidemiology

**Introduction:** Hispanic/Latino communities have suffered a disproportionate burden due to the COVID-19 pandemic. Although Puerto Rico has one of the highest COVID-19 primary series vaccination rates nationwide, this estimate contrasts with the low uptake of booster doses (32.7%). This study aimed to assess health belief correlates of COVID-19 vaccine booster uptake. **Methods:** PR-CEAL recruited 787 participants via an online survey between December 2021 and January 2022. Sociodemographic characteristics and questions framed using the Health Belief Model were assessed. Analyses included adjusted Poisson regression models to estimate prevalence ratios (PR) of booster refusal. **Results:** Overall, 22% of participants planned (10%) or refused (12%) the vaccine booster. Participants with lower income [PR=1.92; 95%CI=1.30, 2.84], in disagreement with vaccine benefits [PR=4.16; 95%CI=3.06, 5.64], and in agreement with booster concerns [PR=2.93; 95%CI=2.12, 4.04], efficacy [PR=2.76; 95%CI=2.00, 3.82], and safety [PR=2.97; 95%CI=2.15, 4.08] were significantly more likely to refuse the booster. **Conclusion:** Booster vaccination refusal was associated with lower perceived vaccine benefits and higher barriers among adults in Puerto Rico. Results informed CEAL team intervention strategies for public health campaigns to increase booster vaccine uptake. **Acknowledgements:** This research was funded by the National Heart, Lung, and Blood Institutes (NHLBI) Agreement OT2HL161827 as part of the National Institutes of Health Community Engagement Alliance. Dr. López-Cepero is funded by K12HD085850.



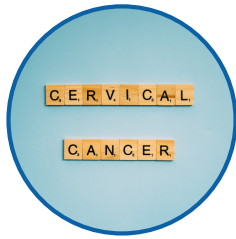


## Hispanic health and booster vaccination acceptance in Puerto Rico: Needs assessment of the Puerto Rico Community Engagement Research Alliance (PR-CEAL) Against COVID-19 Disparities

**Authors:** Adriana Pons Calvo, MS (1), Cynthia M. Pérez, PhD (2), Karelys Canales Birriel, MPHE, CHES (1), Norangelys Solis Torres, BS (1), Zaydelis Tamarit Quevedo, MS (1), Vivian Colón-López, PhD, MPH (1)

**Affiliations:** (1) University of Puerto Rico Comprehensive Cancer Center, Cancer Control and Population Sciences Division, San Juan, Puerto Rico. (2) Department of Biostatistics and Epidemiology, Graduate School of Public Health, Medical Sciences Campus, University of Puerto Rico, San Juan, Puerto Rico

**Background & Objectives:** Hispanics are more likely to develop chronic health conditions such as cancer, cardiovascular disease, diabetes, and obesity. COVID-19 has led to poor treatment control and delay of their chronic diseases, leading to comorbidities, complications, and lower quality of life. During this pandemic, community outreach strategies have played a critical role in developing targeted health promotion initiatives to reduce COVID-19 misinformation and inequities around COVID-19 to encourage to be up to date on the COVID-19 vaccine. This study aimed to determine COVID-19 booster uptake and assess its association with self-reported chronic conditions in a sample of Hispanic adults living in Puerto Rico (PR). **Methods:** The Community Engagement Alliance (CEAL) Against COVID-19 Disparities consists of a total of 21 teams nationwide who work closely with the communities hardest hit by COVID-19. The Puerto Rico CEAL Community Outreach Group (PR-COEG) developed a community survey tool to assess needs-related prevention and education of COVID-19, emergent topics related to COVID-19, and health concerns during the pandemic. Health promoters interviewed volunteer participants in 59 community engagement activities island-wide in collaboration with community-based organizations (CBOs). Poisson regression with robust variance was performed to estimate the prevalence ratio (PR) of self-reported chronic conditions across COVID-19 booster vaccination acceptance. **Results:** As of July 22nd, 929 participants were reached, with the vast majority of those interviewed (98%) reported receiving their COVID-19 primary series. More than three quarters (76%) received at least one booster shot. The most prevalent chronic conditions reported by the participants were hypertension (40%), diabetes (36%), hypercholesterolemia (27%), respiratory problems (17%), and mental health (17%). A significantly higher COVID-19 booster acceptance was observed among people who self-reported hypertension (PR=1.65, 95% CI=1.26-2.14), hypercholesterolemia (PR=1.65, 95% CI=1.13-2.39), and mental health (PR=2.22, 95% CI=1.17-4.22). **Conclusions:** Booster rates are higher among people who report chronic conditions. Given these differences, parallel efforts are needed to develop targeted booster uptake education, reinforce the importance among immunocompromised people, and establish steady prevention strategies for healthy communities. **Acknowledgments:** Research reported in this NIH Community Engagement Alliance (CEAL) Against COVID-19 Disparities publication was supported by the National Institutes of Health under Award Number (1OT2HL161827).



## Influenza vaccination and cervical, breast, and colorectal cancer screening in a sample of women in Puerto Rico

**Authors:** Katherine Hill (1); Cynthia M. Pérez, PhD(2), Adriana Pons, MS(3), Karelys Canales Birriel MPHE CHES(3), Andrea López Cepero PhD(4), Norangelys Solís Torres, BS (3), Zaydelis Tamarit Quevedo, MS (3), and Vivian Colón-López PhD, MPH(5)

**Author Affiliations:** (1)Yale School of Medicine; (2)University of Puerto Rico Medical Sciences Campus, Department of Biostatistics and Epidemiology; (3) Puerto Rico Community Engagement Alliance against COVID-19 disparities (PR-CEAL), University of Puerto Rico Comprehensive Cancer Center; (4)Department of Epidemiology, Rollins School of Public Health, Emory University, Atlanta, Georgia; (5) University of Puerto Rico Comprehensive Cancer Center, Cancer Control and Population Sciences Division

**Objective:** To determine if women in Puerto Rico who received the influenza vaccine have an increased likelihood of participating in cervical, breast, and colorectal cancer screening.

**Methods:** The Puerto Rico Community Engagement Alliance against COVID-19 disparities team attended community outreach events throughout Puerto Rico and completed a face-to-face survey among women age  $\geq 18$ . The following variables were used: independent: influenza vaccination in the past year; dependent: percentages of eligible (by age) women who received cervical, breast, and colorectal screening in the past year. P-values were calculated using Pearson  $\chi^2$  test.

**Results:** The final sample included 400 women with a median age of 61 (IQR = 20). Of these, 47.0% received the influenza vaccine in the past year. Screening rates were as follows; cervical cancer: 64.5% vaccinated women vs. 53.1% non-vaccinated women (p-value=0.08), breast cancer: 80.7% vaccinated women vs. 70.9% non-vaccinated women (p-value=0.08), colorectal cancer: 13.0% vaccinated women vs. 8.0% unvaccinated women (p-value=0.19).

**Conclusions:** No differences in cancer screening rate were found by influenza vaccination status. Influenza vaccination appointments may therefore represent a missed opportunity to promote preventative cancer screening in Puerto Rico.

## Community Outreach

### DATA

Data since October 2021- December 2022



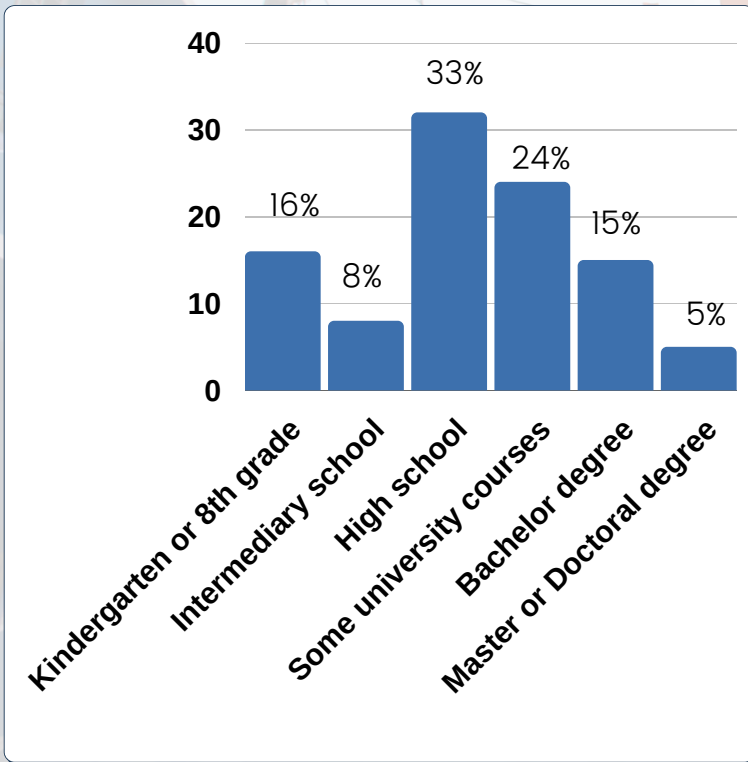
**1,806** participants surveyed



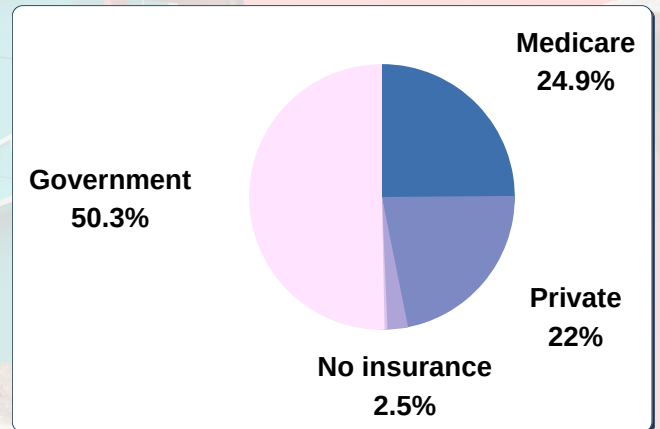
**79%** women  
**21%** men

Mean age: 57± 15.9

### Education level



### Medical insurance





## Community Outreach

### DATA

Data since October 2021- December 2022

### COVID-19 History

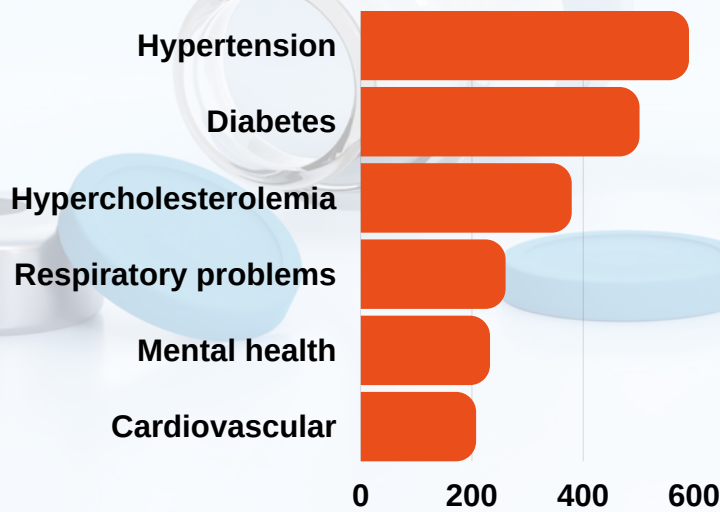
**28%** (n=399)

reported a previous COVID-19 infection



**78%** reported symptoms such as cough, muscular pain, joints pain, fever, breath deficiency, fatigue, loss of smell and taste

### Health problems



### Booster dose

**83%** (n=1078)

**34%** are willing to receive it

### Updated dose (bivalent)

**8%** (n=46)

**56%** are willing to receive it

### Flu shot

**44%** (n=628)

**46%** are willing to receive it

### 3 top reasons to not received any of the vaccines

- **37%** don't consider it necessary or important
- **25%** other reasons (allergies, medical advice, side effects)
- **20%** don't consider it safe

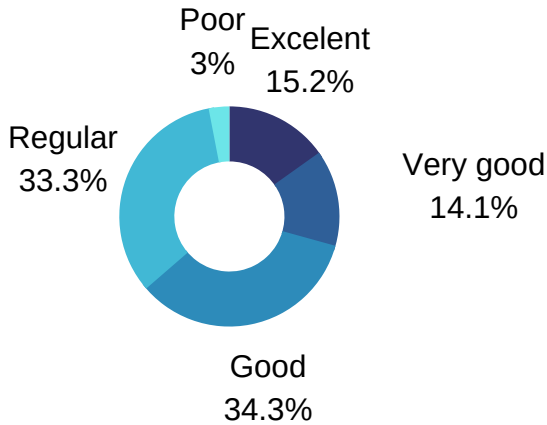
## Community Outreach

### DATA

Data since October 2021- December 2022

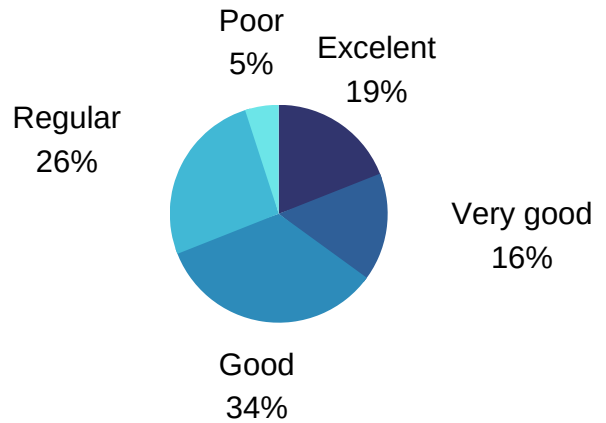
### Health perception

#### General health



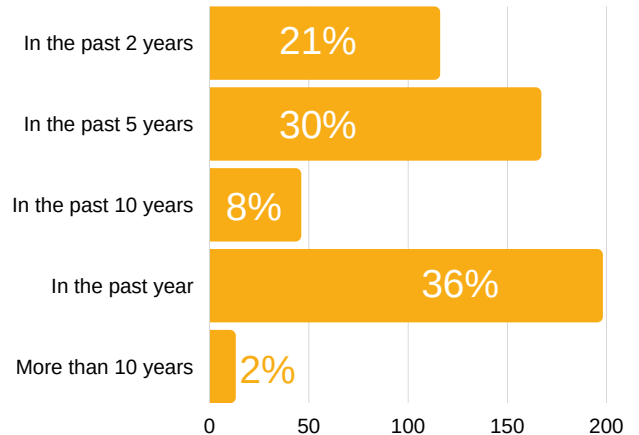
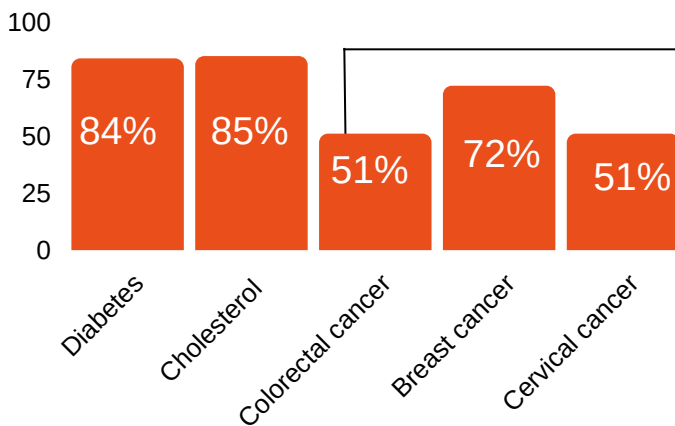
#### Mental health

47% who reported a **regular** and **poor** mental health indicated that the pandemic worsened this status.

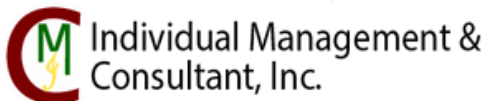


### Screening practices

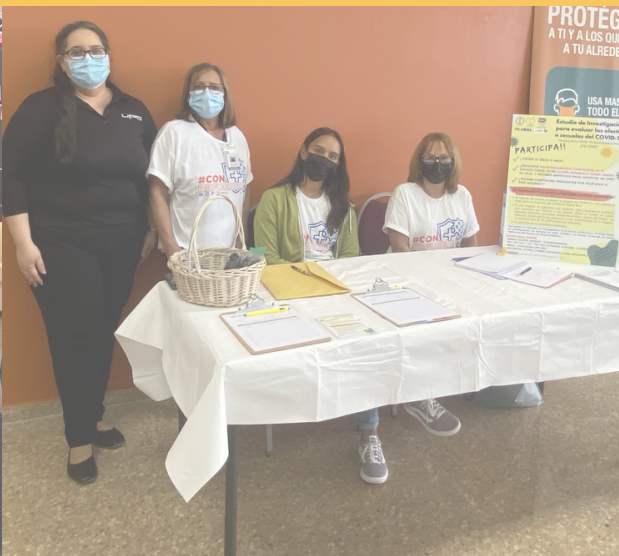
#### How long ago was a screening test for colorectal cancer performed?



## Thank you, PR-CEAL Collaborators!







**PR-CEAL**  
PUERTO RICO COMMUNITY ENGAGEMENT ALLIANCE



[www.prceal.org](http://www.prceal.org)



[prceal@gmail.com](mailto:prceal@gmail.com)