

# PUERTO RICO

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## Visualizing Cancer Data Using Business Intelligence Interactive Dashboard

### NATIONAL PROGRAM OF CANCER REGISTRIES SUCCESS STORY

**SUMMARY:** During the last decade the Puerto Rico Central Cancer Registry (PRCCR) has been improving its data quality and completeness using different sources of information. Having different sources of information, data become hard to analyze without a visual layer of abstraction. After analyzing several factors, we opted for Microsoft Power BI (PBI) as our business intelligence platform. This powerful tool helps us evaluate inconsistencies, outliers, and share insights of our database with researchers in a professional and easy way.

**CHALLENGE:** The PRCCR database relates and explores information from the cancer database, death certificates, pathology reports, and health insurance claims, allowing PRCCR to recover important information for research purposes and for completeness evaluation. This heterogeneous and large database is not easy to explore without a visual layer of abstraction. For this reason, we were searching for new ways to readily evaluate, analyze, summarize and visualize our data without major technical knowledge.

**SOLUTION:** After evaluating several interactive data visualization software options, including the learning curve for designers and end users, and taking into consideration budget constraint, we selected PBI by Microsoft as our business intelligence platform. A dashboard with eleven windows were designed to allow users make specific selections to show outputs graphically and in tables. The dashboard includes many demographic and clinical variables, and shows counts with basic graphics, calculates rates, and allows user to visualize maps, among other utilities.

**RESULTS:** PBI allows users to design specific windows with different variables and connect multiple databases to perform specific searches and quality control tasks. We are currently using the tool for the PRCCR monitoring process and to assess research initiatives. The PRCCR-Business Intelligence project continues under development, since we are planning to add new analysis tools using electronic medical records and death certificates.

**SUSTAINING SUCCESS:** This powerful data visualization tool helps us evaluate inconsistencies, outliers, and share insights of our database with researchers in a professional and easy way. Some of the analysis done with the tool have been useful to determine the viability of research projects. Data from cancer registries is complex and requires knowledge of specific software for data management and data analysis. Access to data visualization tools such as PBI definitively makes cancer information more easily accessible to staff and external audiences.

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