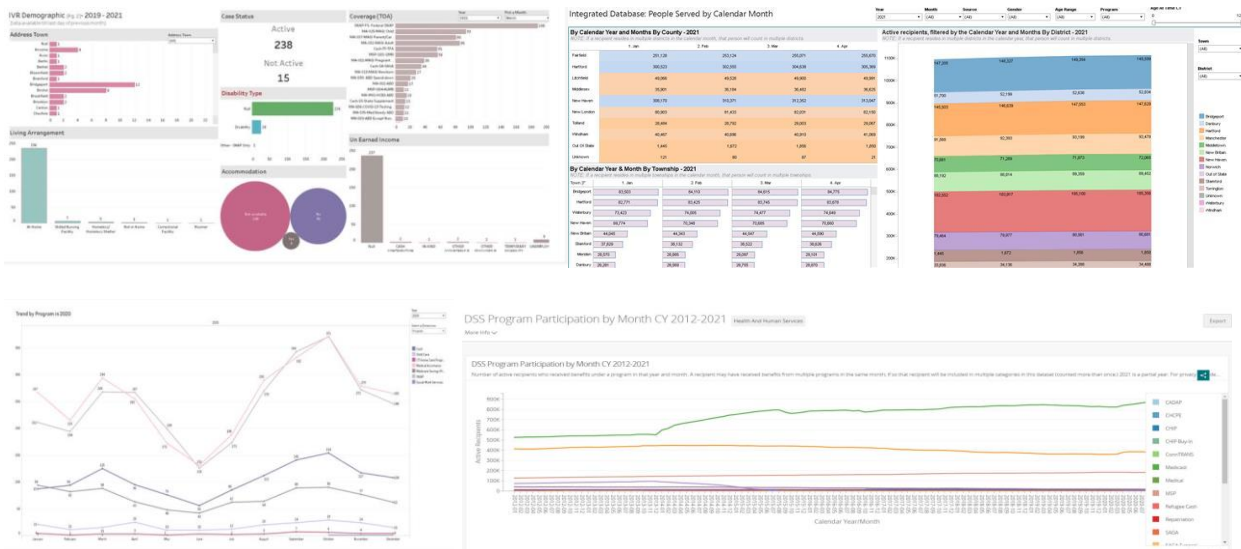# State of Connecticut
DATA MANAGEMENT, ANALYTICS AND VISUALIZATION

Innovative Social Services Dashboards for Data
Management and Visualizations
Moving into the 21st Century

2019 to Present
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DSS ITS Apps Data (Metrics Unit), Department of Social Service

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Executive Overview

To quote Edward R Tufte, "Above all else, show the data". This supports the idea of visualizations to be central to data accessibility and democratization. That in turn allows experts and lay persons alike an avenue to review data and help us to make sense of it (sometimes our differing experiences help us to see and understand data in ways we might not otherwise).

The Department of Social Services opened the eyes of many to the visualization of data. Through collaboration and innovation, a small team of information technology professionals, along with their business counterparts and colleagues, created and developed dashboards that promote timely and accurate data driven, customer service excellence. Data management coupled with detailed and information rich visualizations provide divisions and leadership with the data they need to make important decisions that support the health and wellbeing of the citizens of Connecticut, and undergirds the stewardship of State resources .

IDEA

Prior to the CT DSS Dashboard (Project), CT DSS performance reporting capabilities were limited. The majority of data was gathered manually, which often led to report inaccuracies and discrepancies. Further, reports were published monthly, which meant data was not the most up to date or real time.. They were often static reports that were printed or published online with little to no visualization, making them difficult to read and challenging to decipher. The Project aimed to bring DSS' reporting capabilities into the twenty first century. This effort included the modernization of the State of Connecticut's social services program management, and client access and benefits delivery, by providing effective tools for data management and visualization.

The purpose of this data visualization focus is threefold:

1. Closely Monitor the Medical, Supplemental Nutrition and Cash Programs, generating quality and real time data for Managerial Decision Making, **especially through the unprecedented times of the Covid-19 pandemic.**

   Below is an example illustrating the numerical trends of multiple programs monthly over the calendar year 2020.
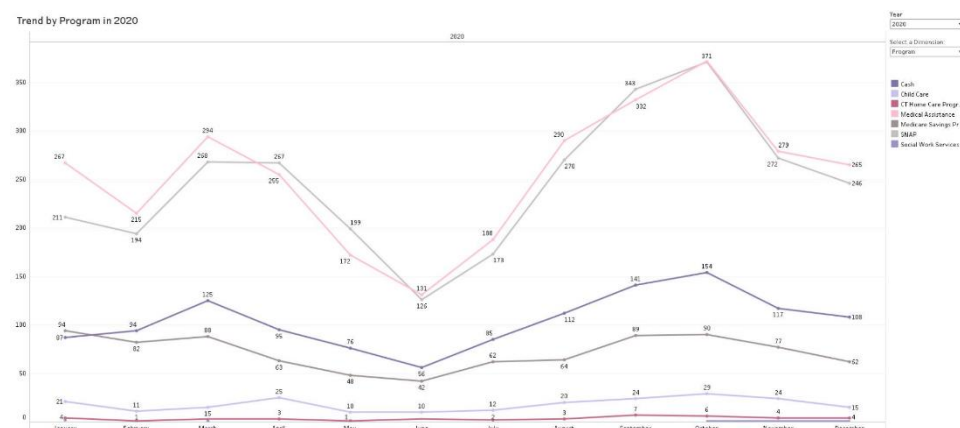
2. Driving Social Services Workers' Performance to Excellence in Customer Service, and ensuring timely, accurate and thorough responses are delivered to our clients by a well trained and equipped workforce, especially during the pandemic.

Below is an example illustrating the customer service volume handled by service center with data analytics and business intelligence.
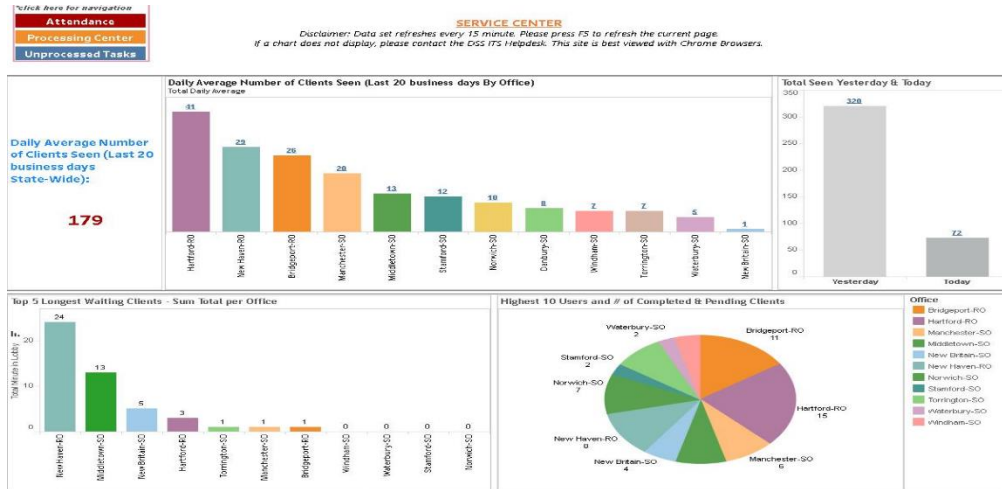

3. Sharing Data with the public to build Trust through Public Transparency, Accountability and Program Integrity. This is essential to ensuring data accessibility and data democratization
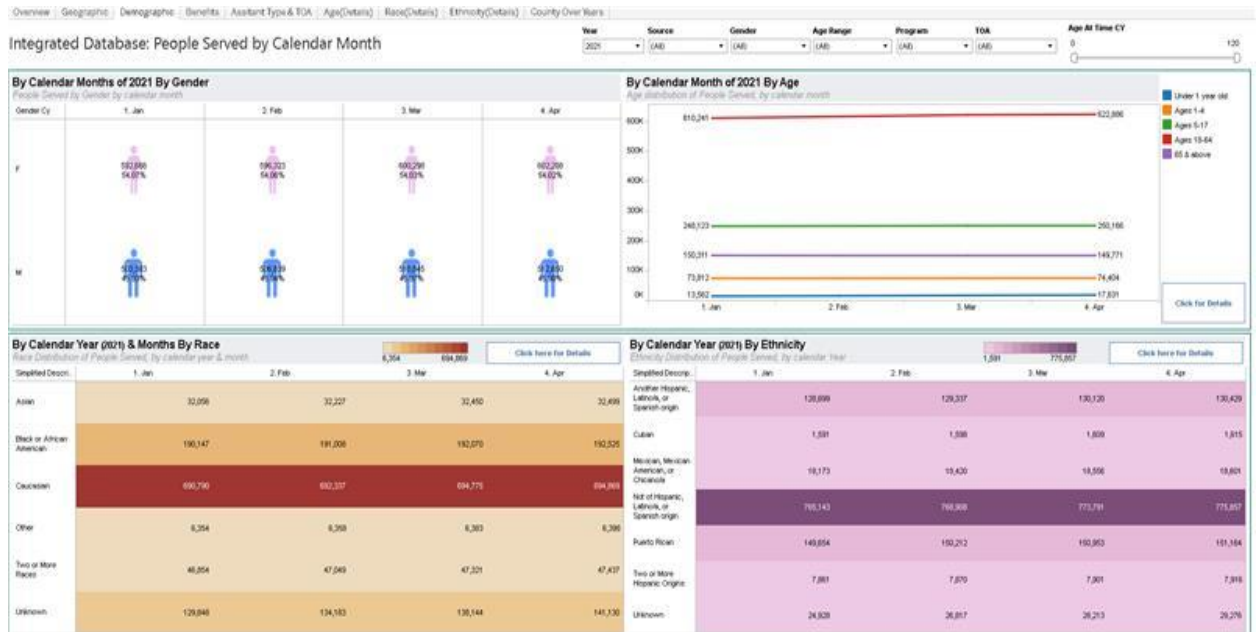

Above is an example illustrating the Enrollment Counts of people served by DSS (Race and Ethnicity) available to the public.

Below is an example of demographics information of enrollment counts of people served by DSS that is available to the public.
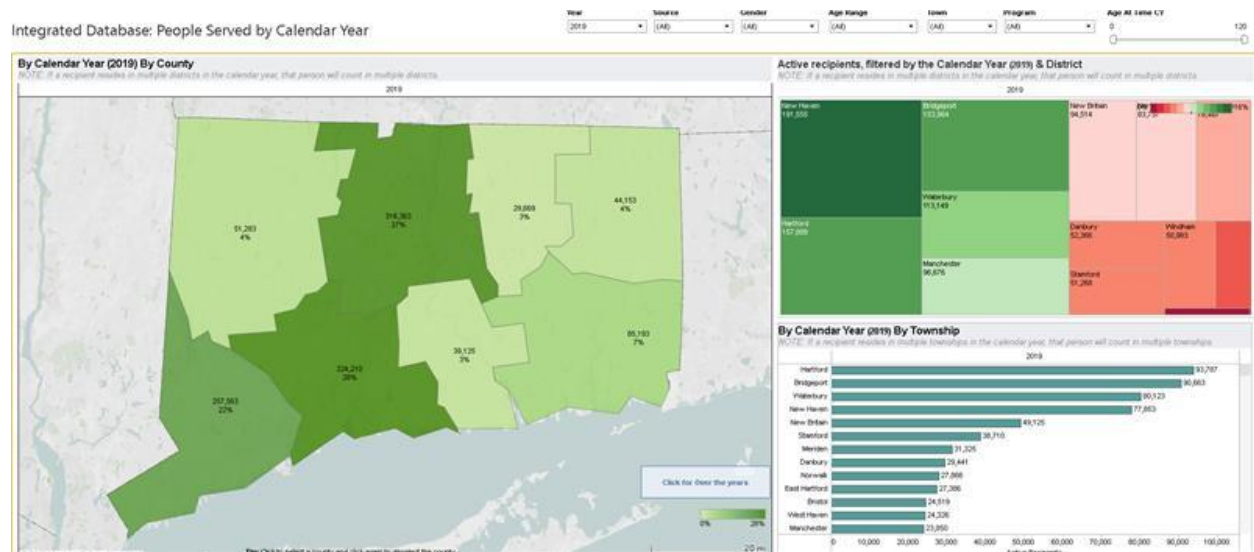
Below is an example illustrating the Historical Participation 2012-2021 in the HUSKY Program (Medicaid and CHIP) of the Population of the State of Connecticut available to the public.
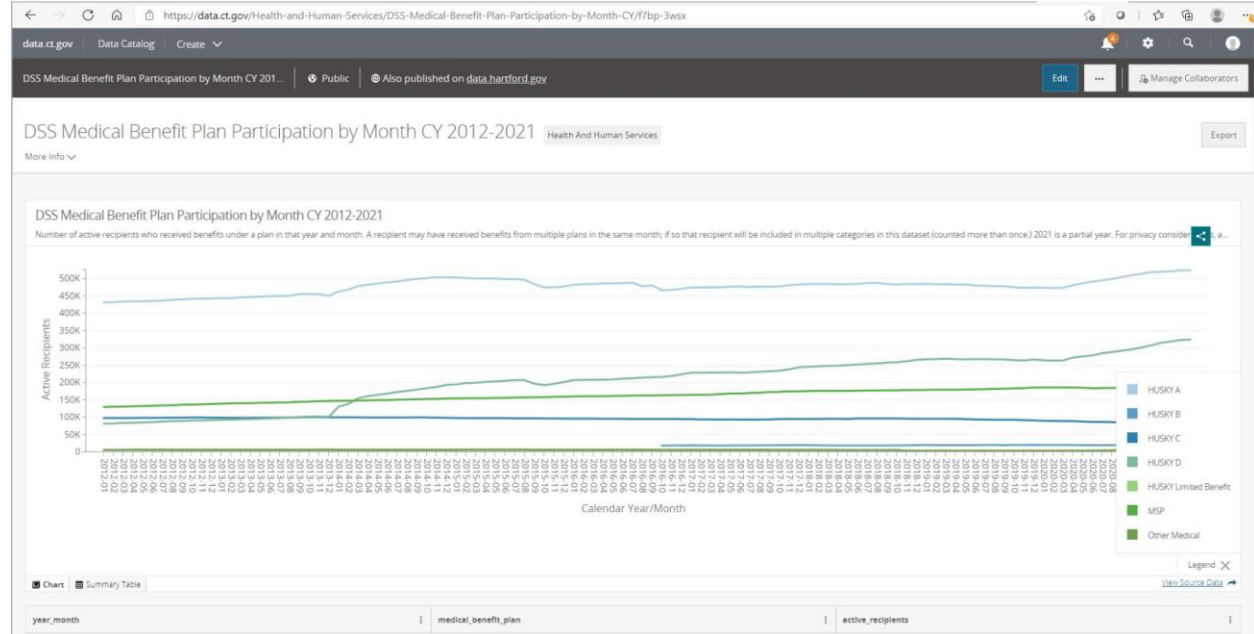
Currently, more than one million people, about a third of the total state population receive aid and benefits for one or more of the following program categories: cash, food and medical. With an increased need for services by the population, and a workforce that is expected to be significantly reduced due to the "Silver Tsunami, "IT technology modernization is paramount to ensure all who accurately qualify under controlling federal and state law for benefits can enroll and get timely access to

the vital services they need for themselves and their family, Failing to meet customer demands is not only undermining of controlling laws and regulations which could result in penalties or costly litigations, monies of which are better spent to provide needed services, but is violative of our social contract with the citizens of Connecticut

By introducing the dashboards at all agency levels, staff and leadership were empowered, within their spheres of influence, to make informed A common and uniform language for communication, internal and external to CT DSS, is now used by field staff and leadership. By setting the expectations high, the agency set itself to follow the pace of the industry and its top-notch products for innovation in customer service. Tableau is among the most popular tools used and it is recognized worldwide for its validity, reliability, and lead. The dashboards are effective monitoring the performance of staff, following KPIs by business area and meeting overall agency standards. They enabled the leadership to identify the staff needs for training and improvement and provide it effectively. Also, the leadership was able to make informed decisions and accurate predictions in time to meet deadlines and performance requirements.

The performance standards are set by policy, whether the law from the legislature, the state statutes, federal regulations, an executive order, agency regulations, uniform policy practices, or the courts under the pressure of complaining citizens and their supportive advocacy groups. Instead of being merely reactive, the state made the choice to be proactive by adopting the dashboards. They served as the tools for setting, monitoring, and assessing performance and service standards. They empowered staff and leadership in meeting the criteria of excellence and exceeding them. The confidence of the public was regained, and the state staff moral boosted while under public scrutiny. The citizens justified demands were addressed as they should be by an orderly and decent government: they can have now easy access to apply for services and see their applications and requests addressed in reasonable times. Also, after enrollment, they can expect the social services and aid they qualify for provided in reasonable times.

Customer service was augmented with less staff thanks to technology and modernization. This success story is universal in the sense the same approach could benefit other state agencies and serve as a template nationwide in collaboration with the federal government. It is also universal as it benefits all: indeed the State of Connecticut has made a deliberate effort to address equity disparities, and make sure all are included, by race and ethnicity, and all protected groups, in particular the ones historically underprivileged including Women, Children, African American and Hispanics.

Implementation

Three priority business needs were identified and addressed simultaneously:

1. Managing and Processing the Customer Enrollment in Social Programs
2. Improving Customer Service in Collaboration with the Field Operations
3. Ensuring our Interactive Voice Response (IVR) serves our clients with equity and effectively

Leadership, management, and field staff were all involved in this common enterprise to make it succeed. The feedback of the customers and the advocacy groups were translated into standards of performance to meet. CT DSS was under pressure from the public, legislature, and courts to meet its legal obligations. Thanks to technology using automation and dashboards, the efficiency was increased with an ever-dwindling numbers of working staff. The limited human resources were allocated on time

by area of need to minimize response times and improve accuracy of benefit granting, making the overall experience of the customers satisfactory and hopefully delightful.

A dedicated full time and diverse IT Team of half dozen workers spearheaded this initiative. Within the larger ITS Division of CT DSS and in collaboration with other professionals, this team was the nexus between the multiple business areas of the agencies.

Using Tableau, the industry standard and lead for data analytics and visualization, and the state of the art search engines, this team was able to pull data from multiple data systems within and outside the organizations complying with all federal and state regulations for HIPAA and cybersecurity, under the oversight of CT DAS BEST the Bureau of Enterprise Services Technology of the State of Connecticut. This model is flexible, in the sense that it accommodated the multiple historical initiatives of the State of Connecticut, and their associated modules to be connected in an elegant way, without disruption or interference with the services provided, and with added value in return, in BA/BI gains.

Impact

The programs are monitored in real time and the population needs assessed and serviced timely, thoroughly, and accurately as required under the law. Forecast is data based and realistic.

Human resources are directed as needed so no geographic area or demographic segment of the population lag, but all are served by a competent and adequate workforce. Training need were identified and provided. The workload is identified and distributed realistically and evenly. No cases would be allowed to go un-addressed, no excuses for lack of means are anymore provided for failing to serve, but all cases are managed in a timely and reasonable fashion.

The public has re-gained confidence in our agency and more data are made public as part of the CT Data Collaborative Government effort.

Prior to this project, the original reports used to make decisions, were comprised of several pages. Aggregating the data required additional analysis and added complexity to decipher.
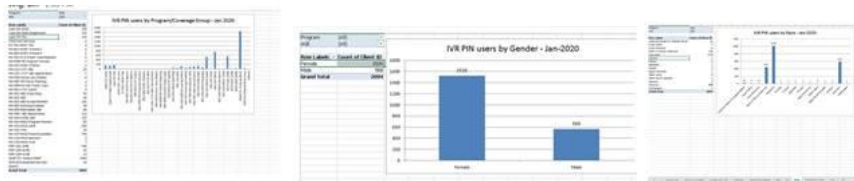
An example of the unique and innovative dashboard is the Interactive Voice Response (IVR) System. The new dashboard has all information at a glance. With no human intervention, it is easy on the eye and simple to read.
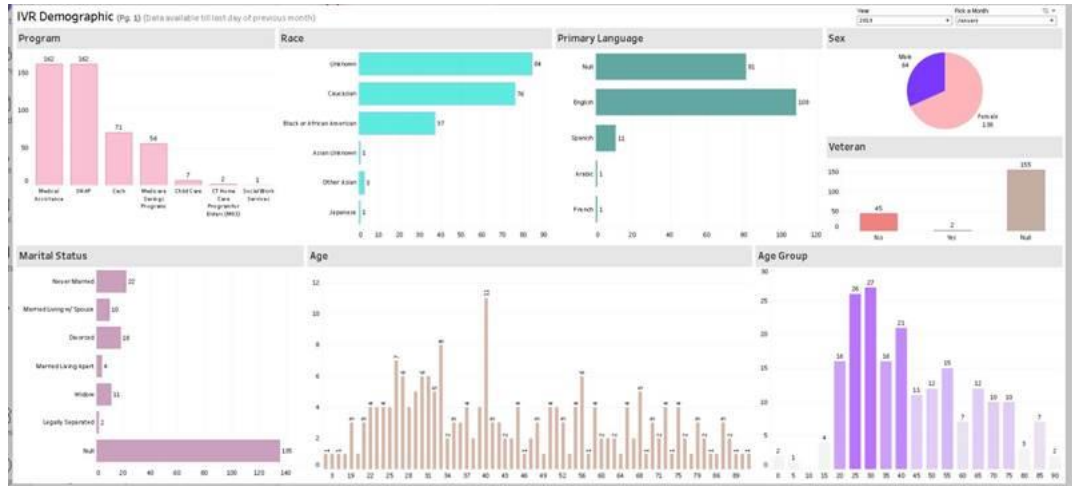
When doing a comparison, the new IVR System reporting dashboard shows a clear and simple visualization of programs and other demographics.

Through innovation, DSS will continue to add reporting capabilities, dashboards, and visual aids to assist the agency in accurately identifying trends. Enabling us to close the gaps and better address the needs of our citizens.

In the future, this means of data management, dashboards and visualizations could be used by other agencies across the state enabling them to make better data driven decisions to meet customer demands.